

**AP - 110**

**Facility-Wide GW  
Monitoring Report**

**April 2015**



April 15, 2015

Mr. Carl J. Chavez  
New Mexico Energy, Minerals & Natural Resources Department  
Oil Conservation Division, Environmental Bureau  
1220 South St. Francis Drive  
Santa Fe, New Mexico 87505

**Re: 2014 Annual Facility-Wide Groundwater Monitoring Report, Navajo Refining Company, Lea Refinery, Lovington, New Mexico, AP-110.**

Dear Mr. Chavez:

Please find enclosed the original and one electronic copy of the *2014 Annual Facility-Wide Groundwater Monitoring Report* (Report) for the Navajo Refining Company (NRC) Lea Refinery (refinery) located in Lovington, New Mexico. The Report summarizes the results of groundwater monitoring activities conducted at the refinery under AP-110 during calendar year 2014.

If you should have any questions or comments regarding this Report, please feel free to contact me at (575) 746-5487 or Robert Combs at (575) 746-5382.

Sincerely,

Scott M. Denton  
Environmental Manager

cc: Navajo: R. O'Brien (Letter only), R. Combs  
HFC: M. Holder (Letter only)  
TRC: J. Speer

# 2014 Annual Facility-Wide Groundwater Monitoring Report



**The HollyFrontier Companies  
Navajo Refining Company  
Lea Refinery  
Lovington, New Mexico**

**April 2015**

**Prepared for:**

  
**HOLLYFRONTIER**  
**Navajo Refining Company**  
**Artesia, New Mexico**

**Prepared by:**



**TRC Environmental Corporation**  
**Austin, Texas**

# 2014 Annual Facility-Wide Groundwater Monitoring Report

The HollyFrontier Companies/Navajo Refining Company  
Lea Refinery  
Lovington, New Mexico

Prepared for:



The HollyFrontier Companies/Navajo Refining Company  
Artesia, New Mexico

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April 2015

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## EXECUTIVE SUMMARY

This *2014 Annual Facility-Wide Groundwater Monitoring Report* documents groundwater monitoring activities conducted at the Lea Refinery (refinery) in Lovington, New Mexico during calendar year 2014. The monitoring objectives are to determine groundwater elevations, flow direction, and gradient and obtain dissolved-phase toxic pollutant concentration data.

The groundwater monitoring program consists of semi-annual groundwater gauging of wells, semi-annual groundwater sampling of wells, and annual reporting. The groundwater monitoring program also included monthly sampling of one refinery water supply well and holding tank until August 2014 when quarterly sampling of three refinery water supply wells was initiated instead in accordance with OCD's May 16, 2014, letter and Navajo Refining Company's (NRC's) response letter on June 20, 2014. Monitoring activities were conducted in general accordance with the Groundwater Discharge Permit (GW-014) issued by the New Mexico Oil Conservation Division (OCD). The OCD rescinded the Groundwater Discharge Permit on February 9, 2012, and the refinery is currently regulated under Abatement Plan (AP)-110). This *2014 Annual Facility-Wide Groundwater Monitoring Report* documents groundwater monitoring activities conducted in 2014 under AP-110, in accordance with NRC's February 22, 2013, Memorandum to the OCD.

The 2014 groundwater monitoring results indicate that physical and chemical groundwater conditions are generally consistent with historical data. The presence of select anions, total dissolved solids (TDS), and metals in select wells at concentrations above Water Quality Control Commission (WQCC) Human Health Standards is due to off-site sources, background concentrations, and/or non-NRC sources at the refinery.

NRC will continue to implement groundwater monitoring activities at the refinery in accordance with GW-014 during 2015 pending OCD approval of the forthcoming *Revised Facility-Wide Groundwater Monitoring Work Plan*.

No reportable releases occurred at the refinery during 2014.

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## 1.0 INTRODUCTION

On behalf of The HollyFrontier Companies (HFC) and Navajo Refining Company (NRC), TRC Environmental Corporation (TRC) is submitting this *2014 Annual Facility-Wide Groundwater Monitoring Report* to summarize the results of groundwater monitoring activities conducted at the Lea Refinery (refinery) in Lovington, New Mexico during calendar year 2014. Previous annual monitoring reports were submitted in accordance with a Groundwater Discharge Permit (GW-014) issued by the New Mexico Oil Conservation Division (OCD). The Groundwater Discharge Permit was due to expire on October 30, 2011, and a renewal draft permit was issued in August 2011 that was to go into effect by November 1, 2011. However, the OCD rescinded the Groundwater Discharge Permit on February 9, 2012. The refinery is currently regulated by the OCD under Abatement Plan (AP)-110. This report is prepared in accordance with NRC's February 22, 2013, Memorandum to the OCD and OCD's response on February 28, 2013.

### 1.1 Refinery Description

The refinery is located approximately five miles south of Lovington in Lea County, New Mexico. The facility is operated by NRC and consists of refining operations and includes Holly Energy Partners – Operating, L.P. (HEP) pipeline and receiving stations. A refinery vicinity map is provided as Figure 1 and a refinery site plan is provided as Figure 2.

## 2.0 SEMI-ANNUAL GROUNDWATER MONITORING ACTIVITIES

Semi-annual groundwater monitoring activities were conducted at the refinery in February 2014 and August 2014. TRC conducted the first semi-annual groundwater monitoring event from February 24 to February 28, 2014, and the second semi-annual event from August 18 to August 21, 2014. Groundwater monitoring activities consisted of (1) gauging all refinery monitoring wells (MW-1 through MW-30) and one recovery well (RW-1), and (2) collecting groundwater samples for laboratory analysis from all refinery monitoring wells (MW-1 through MW-30), one recovery well (RW-1), and three water supply wells (WW-North, WW-South, and WW-East). The locations of the monitoring wells, recovery well, and water supply wells are presented in Figure 2.

The following deviations to the sampling and analysis plan presented in the rescinded Groundwater Discharge Permit (GW-014) were documented during the February 2014 monitoring event:

- Wells MW-11 and MW-14 were sampled using bailing techniques rather than low-flow procedures with a submersible pump due to poor recharge and insufficient water column in the well. These wells were purged dry with a new disposable bailer and a grab sample was collected for laboratory analysis after the well recharged.
- Wells MW-11 and MW-14 could only be sampled for volatile organic compounds (VOCs) due to poor recharge resulting in insufficient water volume.
- Water supply well WW-North was not in operation and could not be sampled.

The following deviations to the sampling and analysis plan presented in the rescinded Groundwater Discharge Permit (GW-014) were documented during the August 2014 monitoring event:

- Wells MW-11 and MW-14 were sampled using bailing techniques rather than low-flow procedures with a submersible pump due to poor recharge and insufficient water column in the wells. These wells were purged dry with a new disposable bailer and a grab sample was collected for laboratory analysis after the well recharged.
- Well MW-11 could only be sampled for VOCs, metals, and nitrate; and well MW-14 could only be sampled for VOCs, metals, nitrate, and total dissolved solids (TDS) due to insufficient water volume.

### 2.1 Fluid Level Gauging

All refinery monitoring and recovery wells were gauged during the February 2014 and August 2014 semi-annual monitoring events to determine the groundwater elevation, flow

direction, and gradient, the presence or absence of phase-separated hydrocarbons (PSH), and apparent PSH thickness. A decontaminated oil-water interface probe was used to measure depth to water and depth to PSH, if present. Depth to water and depth to PSH were measured to the nearest 0.01-foot from the top of the well casing.

## 2.2 Groundwater Sample Collection

Groundwater samples were collected for laboratory analysis from the following wells during the semi-annual monitoring events:

- February 2014: 30 refinery monitoring wells (MW-1 through MW-30), one recovery well (RW-1), and two water supply wells (WW-East and WW-South)
- August 2014: 30 refinery monitoring wells (MW-1 through MW-30), one recovery well (RW-1), and three water supply wells (WW-North, WW-East, and WW-South)

Except as identified as deviations above, each monitoring and recovery well was purged and sampled using low-flow sampling procedures. A stainless-steel, submersible pump (Proactive model SS-Monsoon) with a low-flow, electric controller and dedicated vinyl tubing or disposable, low-density polyethylene (LDPE) tubing was used for purging and sampling the monitoring wells and recovery well. The pump intake was placed at the middle of the water column because the water elevations were within the screened well intervals. A water-quality meter and turbidity meter were used to measure pH, temperature, conductivity, oxidation/reduction potential (ORP), dissolved oxygen, and turbidity at regular intervals during the purging process to obtain geochemical data and to monitor for stabilization of the groundwater. The purging process was considered complete when three of the six water quality parameters achieved stabilization.

The water supply wells were purged and sampled from a sampling point (i.e., tap or spigot) located at or near the well head or pump house and before the water supply is introduced into any storage tank or treatment unit. The wells were purged at the sample point to remove any standing water from the well casing and surface piping. Grab readings of geochemical parameters including pH, temperature, conductivity, ORP, dissolved oxygen, and turbidity were also collected during the purging process.

After the purging process was complete, groundwater samples were collected directly from the dedicated or disposable tubing (for the monitoring and recovery wells) or from the water supply well sampling point into method-specific containers provided by the laboratory. All groundwater samples were submitted to ALS Environmental Laboratory in Houston, Texas under appropriate chain-of-custody documentation for the following analyses, except as identified as deviations above:

- VOCs by Method SW8260
- Semi-volatile organic compounds (SVOCs) by Method SW8270
- Dissolved metals (aluminum, arsenic, barium, boron, cadmium, chromium, cobalt, copper, iron, lead, manganese, molybdenum, nickel, selenium, silver, uranium, zinc) by Method SW6020
- Total mercury by Method SW7470A
- Anions (chloride, fluoride, nitrate, nitrite, and sulfate) by United States Environmental Protection Agency (U.S. EPA) Method 300.0
- Alkalinity by Method SM2320B
- Specific conductivity by Method M2510 B
- TDS by Method M2540C



### 3.0 SEMI-ANNUAL GROUNDWATER MONITORING RESULTS

The results of the semi-annual groundwater monitoring activities conducted in February 2014 and August 2014 are discussed below.

#### 3.1 Fluid Gauging Results

Fluid level gauging was performed on February 24, 2014, and on August 18, 2014. Depth to water measurements and groundwater elevations are presented in Table 1. No PSH was detected in any monitoring or recovery well during either gauging event. Potentiometric groundwater surface maps for the February 2014 and August 2014 gauging events are presented as Figures 3 and 4, respectively. The groundwater elevations measured during both gauging events indicate groundwater flows radially (southeast, south, and north/northwest) towards a cone of depression near the three water supply wells located within the central portion of the refinery. This cone of depression is consistent with previous events and is induced by groundwater pumping from the three on-site water supply wells for refinery process use and non-potable restroom and safety shower use.

Groundwater elevations measured during the February 2014 event decreased an average 2.02 feet from those measured in February 2013. The February 2014 groundwater elevation data indicates groundwater beneath the northwestern portion of the refinery flows southeast towards the cone of depression at a hydraulic gradient ranging from 0.004 to 0.005 feet per foot. North of the cone of depression, groundwater flows south at a hydraulic gradient of 0.004 feet per foot. South/southeast of the cone of depression, groundwater flows north/northwest at a hydraulic gradient ranging from 0.002 to 0.004 feet per foot.

Groundwater elevations measured during the August 2014 event decreased an average 1.28 feet from those measured in August 2013. The August 2014 groundwater elevation data indicates groundwater northwest of the cone of depression flows southeast at a hydraulic gradient ranging from 0.008 to 0.010 feet per foot. North of the cone of depression, groundwater flows south/southwest at a hydraulic gradient of 0.009 feet per foot. South/southeast of the cone of depression, groundwater flows north/northwest at a hydraulic gradient ranging from 0.007 to 0.011 feet per foot. The increased hydraulic gradient observed in August 2014 near the cone of depression is caused by a decrease in the groundwater elevation measured at MW-18. The groundwater elevation measured at MW-18 in August 2014 decreased 10.31 feet from February 2014 and is the historical minimum groundwater elevation measured at the well.

A graph of groundwater elevations versus time for wells MW-4 and MW-6 is provided in Appendix A. As shown on the graph, groundwater elevations in wells MW-4 and MW-6 have decreased 5.70 feet and 6.58 feet, respectively, from June 2009 to August 2014. These reductions in groundwater are consistent across the refinery and are likely caused by (1) limited recharge

due to low rainfall levels and (2) active pumping from three on-site water supply wells and City of Lovington water supply wells located northwest and west (i.e., upgradient) of the refinery.

### **3.2 Groundwater Sampling Results**

Analytical results of organic and inorganic constituents in groundwater samples collected during the 2014 sampling events are presented in Tables 2 and 3, respectively. The analytical data are compared to the New Mexico Water Quality Control Commission (WQCC) Human Health Standards for groundwater and any results that exceeded these standards are shaded gray. Groundwater concentration maps are provided as Figures 5 to 12 for constituents that exceeded WQCC Standards. Laboratory analytical reports are provided in Appendix B. Plots of groundwater concentrations over time for detected constituents are provided in Appendix C.

#### **3.2.1 Organic Constituent Results**

Analytical results for VOCs and SVOCs (organic constituents) in groundwater are presented in Table 2. Naphthalene results are included in the VOC (SW8260) and SVOC (SW8270) sections of this report as it is reported by both analytical methods.

##### **3.2.1.1 Volatile Organic Compounds**

VOCs were not detected above the laboratory reporting limits in 32 of the 33 wells sampled during the February 2014 and August 2014 sampling events. VOCs were detected in monitoring well MW-11 as follows:

- Benzene was detected above the WQCC standard of 0.010 milligrams per liter (mg/L) during the February 2014 and August 2014 monitoring events at concentrations of 0.96 mg/L and 0.11 mg/L, respectively. The 2014 detected concentrations are lower than the historical maximum of 7.8 mg/L detected in MW-11 in February 2012. Benzene concentrations in well MW-11 will continue to be watched closely during future monitoring events. In addition, NRC proposes installation of oxygen-releasing compound (ORC®) socks in MW-11 to promote enhanced aerobic biodegradation of benzene in this well.
- Ethylbenzene was detected at concentrations below the WQCC standard of 0.75 mg/L during the February 2014 and August 2014 monitoring events.
- Xylene was detected at concentrations below the WQCC standard of 0.62 mg/L during the February 2014 and August 2014 monitoring events.
- Naphthalene was detected at a concentration below the WQCC standard of 0.03 mg/L during the February 2014 monitoring event.

Reported concentrations of VOCs during the 2014 sampling events were generally consistent with previous sampling results with no notable increases. Concentration maps of VOCs in groundwater for the February 2014 and August 2014 sampling events are provided as Figure 5 and Figure 6, respectively.

### **3.2.1.2 Semi-Volatile Organic Compounds**

SVOCs were not detected above the laboratory reporting limit in 28 of the 31 wells sampled for SVOCs during the February 2014 event nor in 31 of the 32 wells sampled for SVOCs during the August 2014 sampling event.

In February 2014, naphthalene and 1-methylnaphthalene were detected in monitoring well MW-6 at concentrations below the WQCC Standard of 0.03 mg/L for total naphthalenes. 1-methylnaphthalene had not previously been detected in well MW-6. In addition, phenol was detected in wells MW-18 and MW-19 at concentrations below the WQCC Standard of 0.005 mg/L for total phenols. Phenol had not previously been detected in wells MW-18 or MW-19.

In August 2014, naphthalene and 1-methylnaphthalene were detected in monitoring well MW-6 at concentrations below the WQCC Standard of 0.03 mg/L for total naphthalenes. Phenol was not detected in wells MW-18 and MW-19 in August 2014.

Reported concentrations of SVOCs during the 2014 sampling events were generally consistent with previous sampling results, with notable increases as described above in well MW-6. Well MW-6 will be watched closely during future monitoring events. Concentration maps of SVOCs in groundwater for the February 2014 and August 2014 sampling events are not provided because none of the reported concentrations exceeded the WQCC Standards.

## **3.2.2 Inorganic Constituent Results**

Analytical results for anions, TDS, and metals (inorganic constituents) in groundwater are presented in Table 3. A discussion of the inorganic constituent results is provided below.

### **3.2.2.1 Anions**

The February 2014 analytical results indicate that chloride and fluoride are present in groundwater at concentrations above their respective WQCC Standards. Chloride was detected at concentrations above the WQCC Standard of 250 mg/L in 8 of the 31 wells sampled with a maximum detected concentration of 588 mg/L in MW-13. Fluoride was detected at concentrations above the WQCC Standard of 1.6 mg/L in 2 of the 31 wells sampled with a maximum detected concentration of 2.28 mg/L in MW-24.

The August 2014 analytical results indicate that chloride and fluoride are present at concentrations above their respective WQCC Standards. Chloride was detected at concentrations above the WQCC Standard of 250 mg/L in 6 of the 32 wells sampled with a maximum detected

concentration of 485 mg/L in MW-13. Fluoride was detected at concentrations above the WQCC Standard of 1.6 mg/L in 3 of the 32 wells sampled with a maximum detected concentration of 2.76 mg/L in MW-24.

Concentration maps of anions that exceeded WQCC Standards in groundwater for the February 2014 and August 2014 sampling events are provided as Figures 7 and 8, respectively.

Reported anion concentrations for the 2014 sampling events were generally consistent with previous sampling results, with notable increases in the following wells:

- MW-9: Chloride concentrations increased from 35.7 mg/L in August 2013 to 197 mg/L in August 2014, which is the historical maximum reported at the well since. However, the chloride concentrations remain below the WQCC standard of 250 mg/L. Sulfate concentrations increased from 71.5 mg/L in February 2014 to 111 mg/L in August 2014, which is the historical maximum reported at the well. However, the sulfate concentrations remain below the WQCC standard of 600 mg/L.
- MW-10: Chloride concentrations increased from 95.0 mg/L in August 2013 to 156 mg/L in August 2014, which is the historical maximum reported at the well since June 2009. However, the chloride concentrations remain below the WQCC standard of 250 mg/L.
- MW-22: Fluoride concentrations increased from 0.416 mg/L in February 2014 to 1.00 mg/L in August 2014, which is the historical maximum reported concentration at the well. However, the fluoride concentrations remain below the WQCC standard of 1.6 mg/L. Sulfate concentrations increased from 85.2 mg/L in February 2014 to 127 mg/L in August 2014, which is the historical maximum reported at the well. However, the sulfate concentrations remain below the WQCC standard of 600 mg/L.

As discussed in the December 2013 *Refinery Investigation Report*, the presence of anions at concentrations above WQCC Standards in select wells, including fluoride (wells MW-3, MW-24, and MW-28) and chloride (wells MW-8, MW-13, MW-15, MW-19, MW-23, MW-25, MW-27, and WW-South), is due to off-site sources, background concentrations, and/or non-NRC sources at the refinery.

### **3.2.2.2 Total Dissolved Solids**

During the February 2014 sampling event, TDS was detected at concentrations above the WQCC Standard of 1,000 mg/L in 6 of the 31 wells sampled with a maximum detected concentration of 2,380 mg/L in well MW-13. During the August 2014 sampling event, TDS was detected at concentrations above the WQCC Standard of 1,000 mg/L in 6 of the 33 wells sampled with a maximum detected concentration of 1,900 mg/L in well MW-13. Concentration

maps of TDS in groundwater for the February 2014 and August 2014 sampling events are provided as Figures 9 and 10, respectively. Reported TDS concentrations for both 2014 sampling events were generally consistent with previous sampling results, with notable increases in the following wells:

- MW-9: TDS concentrations increased from 452 mg/L in February 2014 to 932 mg/L in August 2014, which is the historical maximum reported concentration at the well. However, the TDS concentration remains below the WQCC standard of 1,000 mg/L.
- MW-10: TDS concentrations increased from 516 mg/L in August 2013 to 750 mg/L in August 2014, which is the historical maximum reported concentration at the well. However, the TDS concentration remains below the WQCC standard of 1,000 mg/L.

As discussed in the December 2013 *Refinery Investigation Report*, the presence of TDS at concentrations above WQCC Standards in select wells (including wells MW-8, MW-13, MW-23, MW-25, MW-27, and WW-South) is due to off-site sources, background concentrations, and/or non-NRC sources at the refinery.

### 3.2.2.3 Metals

The February 2014 analytical results indicate that chromium, iron, and manganese were detected at concentrations above their respective WQCC Standards. Chromium was detected at a concentration above its WQCC Standard of 0.05 mg/L in well MW-29 at a concentration of 0.261 mg/L. Iron was detected at a concentration above its WQCC Standard of 1.0 mg/L in well MW-6 at a concentration of 3.42 mg/L. Manganese was detected at concentrations above the WQCC Standard of 0.2 mg/L in 4 of the 31 wells sampled with a maximum detected concentration of 2.71 mg/L in well MW-6.

The August 2014 analytical results indicate that aluminum, chromium, iron, manganese, and uranium were detected at concentrations above their respective WQCC Standards. Aluminum was detected above its WQCC Standard of 5.0 mg/L in well MW-22 at a concentration of 40.3 mg/L. Chromium was detected at concentrations above the WQCC Standard of 0.05 mg/L in 6 of the 34 wells sampled with a maximum detected concentration of 0.331 mg/L in well MW-29. Iron was detected at concentrations above the WQCC Standard of 1.0 mg/L in 3 of the 34 wells sampled with a maximum detected concentration of 4.32 mg/L in well MW-22. Manganese was detected at concentrations above the WQCC Standard of 0.2 mg/L in 4 of the 34 wells sampled with a maximum detected concentration of 3.06 mg/L in well MW-6. Uranium was detected at a concentration above its WQCC Standard of 0.03 mg/L in well MW-22 at a concentration of 0.0336 mg/L.

Concentration maps of metals that exceeded WQCC Standards in groundwater for the February 2014 and August 2014 sampling events are provided as Figures 11 and 12,

respectively. Metal exceedances present in groundwater beneath the wastewater separator, the former salt water disposal wells, and between Tanks 1214 and 1203, located within the northwestern/central portion of the Lea Refinery (i.e., wells MW-6, MW-7, MW-11, MW-13, MW-25, and MW-29), are generally consistent with previous sampling events, with the exception of well MW-9. Metals exceedances were detected in August 2014 in monitoring wells with no prior metals exceedances located in the south and southeast portions of the refinery (wells MW-12R, MW-22, and MW-24). Wells MW-9, MW-12R, MW-22 and MW-24 will be watched closely during future sampling events.

Reported metal concentrations for the 2014 sampling events were generally consistent with previous sampling results, with notable increases in the following wells:

- MW-6: Iron concentrations increased from <0.200 mg/L in August 2013 to 3.42 mg/L in February 2014, which is above the WQCC Standard and the historical maximum reported concentration at the well. The iron concentration in MW-6 decreased to 0.268 in August 2014, which is below the WQCC Standard. The historical trend of iron concentrations in MW-6 indicates fluctuating concentrations below and above the WQCC Standard likely related to seasonal recharge effects. This well will be watched closely during future sampling events.
- MW-7: Manganese concentrations increased from 0.365 mg/L in August 2013 to 0.781 mg/L in February 2014, which is the maximum reported concentration at the well. The manganese concentration in MW-7 decreased to 0.470 in August 2014, which is consistent with historical concentrations. The historical trend of manganese concentrations in MW-7 indicates fluctuating concentrations above the WQCC Standard likely related to seasonal recharge effects. This well will be watched closely during future sampling events.
- MW-9: Chromium concentrations increased from <0.0050 mg/L in February 2014 to 0.205 mg/L in August 2014, which is the historical maximum reported concentration and the first exceedance of the WQCC Standard at the well. Iron concentrations increased from <0.0050 mg/L in February 2014 to 2.22 mg/L in August 2014, which is the historical maximum reported concentration and the first exceedance of the WQCC Standard at the well. The August 2014 chromium and iron concentration are likely anomalous as these metals had not been detected in this well or were detected at significantly lower concentrations since it was installed in June 2009 and they were not detected during the most recent semi-annual monitoring event conducted in February 2015. This well will be watched closely during future sampling events.



- MW-12R: Chromium concentrations increased from <0.0050 mg/L in February 2014 to 0.0516 mg/L in August 2014, which is the historical maximum reported concentration and the first exceedance of the WQCC Standard at the well. The August 2014 concentration are likely anomalous as chromium had not been detected in this well since it was installed in August 2013 and it was not detected in the most recent sampling event conducted in February 2015. In addition, chromium was never detected in MW-12 (the damaged well replaced by well MW-12R). Possible sources of chromium in well MW-12R are nearby active oil production and injection wells located southwest, south, and southeast of MW-12R. This well will be watched closely during future sampling events.
- MW-13: Manganese concentrations increased from 0.705 mg/L in August 2013, which is above the WQCC Standard, to a historical maximum of 1.01 mg/L in February 2014. This well will be watched closely during future sampling events.
- MW-22: Aluminum concentrations increased from <0.010 mg/L in February 2014 to 40.3 mg/L in August 2014, which is the maximum reported concentration at the well and the first exceedance of the WQCC Standard for aluminum at the refinery. Chromium concentrations increased from 0.0133 mg/L in February 2014 to 0.184 mg/L in August 2014, which is the historical maximum reported concentration and first exceedance of the WQCC standard at the well. Iron concentrations increased from <0.200 mg/L in February 2014 to 4.32 mg/L in August 2014, which is the historical maximum reported concentration and first exceedance of the WQCC standard at the well. Uranium concentrations increased from 0.00632 mg/L in February 2014 to 0.0336 mg/L in August 2014, which is the historical maximum reported concentration and first exceedance of the WQCC Standard at the well.

The August 2014 aluminum, chromium, iron, and uranium concentrations in MW-22 are likely anomalous as these metals had not been detected in this well or were detected at significantly lower concentrations since the well was installed in August 2010 and the results of the most recent semi-annual monitoring event conducted in February 2015 were consistent with historical data. Possible sources of metals in well MW-22 include nearby active oil production and injection wells, particularly the active injection well LSAU-14, which is located approximately 150 feet northeast (upgradient) of MW-22. There are no identified refinery sources for metals in this well. This well will be watched closely during future sampling events.

- MW-24: Chromium concentrations increased from 0.0128 mg/L in February 2014 to 0.258 mg/L in August 2014, which is the maximum reported concentration and the first exceedance of the WQCC Standard at the well. Iron concentrations increased

from <0.200 mg/L in February 2014 to 1.28 mg/L in August 2014, which is the maximum reported concentration and the first exceedance of the WQCC Standard at the well. The August 2014 chromium and iron concentrations are likely anomalous as these metals had not been detected in this well or were detected at significantly lower concentrations since it was installed in August 2010 and they were not detected in this well during the most recent semi-annual monitoring event conducted in February 2015. Possible sources of metals in well MW-24 are nearby active oil production and injection wells located northeast, east, and southeast of MW-24. There are no identified refinery sources for metals in this well. This well will be watched closely during future sampling events.

- MW-25: Chromium concentrations increased from <0.005 mg/L in February 2014 to 0.185 mg/L in August 2014, which is above the WQCC Standard and the maximum reported concentration at the well. Chromium was also reported in exceedance of the WQCC Standard in this well in February 2011. The historical trend of chromium concentrations in MW-25 indicates fluctuating concentrations likely related to seasonal recharge effects. Chromium was detected at a historical minimum concentration in MW-25 during the most recent semi-annual monitoring event conducted in February 2015, which further indicates chromium concentrations fluctuate seasonally in MW-25. This well will be watched closely during future sampling events.
- MW-29: Chromium concentrations increased from 0.261 mg/L in February 2014 to 0.331 mg/L in August 2014, which is the maximum reported at the well since August 2010. The historical trend of chromium concentrations in MW-29 indicates fluctuating concentrations above the WQCC Standard likely related to seasonal recharge effects. Chromium results from the most recent semi-annual monitoring event conducted in February 2015 were consistent with February 2014 results, which further indicates chromium concentrations fluctuate seasonally in MW-29. This well will be watched closely during future sampling events.

As discussed in the December 2013 *Refinery Investigation Report*, the presence of metals at concentrations above WQCC Standards in select wells, including aluminum (well MW-22), chromium (wells MW-12R, MW-22, and MW-24), manganese (wells MW-11 and MW-13), iron (MW-22 and MW-24), and uranium (well MW-22), is due to off-site sources, background concentrations, and/or non-NRC sources at the refinery.



## 4.0 WATER WELL AND TANK SAMPLING AND ANALYTICAL RESULTS

The potential risk associated with use of the water in refinery restrooms and safety showers (the water is not used for drinking or cooking) was evaluated through sampling of the refinery water supply wells WW-North, WW-South, and WW-East. The results of the water supply well sampling activities conducted in 2014 are discussed below.

### 4.1 Monthly WW-East Sampling

Groundwater samples were collected from water supply well WW-East on a monthly basis from January to July 2014 (if the well was in operation) in accordance with July 2012 e-mail correspondence between NRC and OCD. The objective of the monthly sampling was to evaluate the potential risk associated with use of the water in refinery restrooms and safety showers (the water is not used for drinking or cooking). Water supply well WW-East was sampled monthly as it is the primary source of refinery water supply (i.e., the well operates approximately 70 to 80 percent of the time). Water supply wells WW-North and WW-South are used to supplement well WW-East (i.e., WW-North and WW-South each operate only 10 to 15 percent of the time) and were not sampled on a monthly basis from January to July 2014. A sample was not collected from WW-East in May 2014 because the well was not in operation during that month.

Groundwater samples collected from WW-East in January 2014 were submitted to ALS Environmental Laboratory in Houston, Texas. Groundwater samples collected from WW-East from February 2014 to July 2014 were submitted to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico. All groundwater samples were submitted to the laboratory under chain-of-custody documentation for analysis of U.S. EPA Region 5 Skinner List of Constituents. Analytical results of the water supply well samples collected from WW-East are summarized in Table 4 and are compared to WQCC Standards and risk-based remediation goals (RBRGs) as determined in the December 2013 *Refinery Investigation Report*. None of the Skinner List constituents were detected at concentrations above their respective WQCC Standard or RBRG in any of the monthly samples. The water poses no risk associated with continued use in refinery restrooms and safety showers based on these results.

It should be noted that monthly sampling activities previously included the collection of samples from water supply holding tank Tank 1210, which was used to store water pumped from water supply wells WW-North, WW-South, and WW-East. This tank was shut down for maintenance in August 2013 and was not brought back into service before July 2014. Therefore, no samples were collected from Tank 1210 in 2014.

## 4.2 Quarterly Water Supply Well Sampling

Groundwater samples were collected from water supply wells WW-North, WW-South, and WW-East on a quarterly basis from August to December 2014 (if the wells were in operation) accordance with OCD's May 16, 2014, letter and NRC's response letter on June 20, 2014. Groundwater samples collected from the water supply wells were submitted to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico under appropriate chain-of-custody documentation for the following analyses:

- VOCs by Method SW8260
- SVOCs by Method SW8270
- Dissolved metals (aluminum, arsenic, barium, boron, cadmium, chromium, cobalt, copper, iron, lead, manganese, molybdenum, nickel, selenium, silver, uranium, zinc) by Method SW6020
- Total mercury by Method SW7470A
- Anions (chloride, fluoride, nitrate, nitrite, and sulfate) by United States Environmental Protection Agency (U.S. EPA) Method 300.0
- Alkalinity by Method SM2320B
- Specific conductivity by Method M2510 B

Consistent with historical results, chloride was detected in WW-South at a concentration of 390 mg/L in December 2014, which exceeds the WQCC standard of 250 mg/L. None of the remaining analytes were detected at concentrations above their respective WQCC Standards in any of the samples. Organic and inorganic analytical results of the quarterly water supply well samples are summarized and compared to WQCC Standards in Tables 2 and 3, respectively. Water from the water supply wells poses no risk associated with continued use in refinery restrooms and safety showers based on these results.

## 5.0 QUALITY ASSURANCE/QUALITY CONTROL

### 5.1 Semi-Annual and Quarterly Groundwater Samples

Thirty-three water samples, four field duplicates, four trip blanks, and two equipment blanks were collected from February 24 to 28, 2014. Thirty-four water samples, four field duplicates, two equipment blanks, and two trip blanks were collected on from August 19 to 22, 2014. These samples were submitted to ALS Environmental Laboratory in Houston, Texas for analyses. Data for the following methods are reported:

- Chloride, fluoride, sulfate, and nitrate/nitrite by U.S. EPA Method 300.0
- Alkalinity by Standard Method (SM) 2320B
- Specific conductivity by SM 2510B
- pH BY SM4500H+B
- TDS by SM 2540C
- Dissolved metals by SW846 Method 6020
- Mercury by SW846 Method 7470
- VOCs by SW846 Method 8260
- Low-level SVOCs by SW846 Method 8270

On December 17, 2014, three groundwater samples, one field duplicate, and one trip blank were collected and submitted to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico. Data for the following methods are reported:

- Chloride, fluoride, sulfate, and nitrate/nitrite by U.S. EPA Method 300.0
- Alkalinity by Standard Method (SM) 2320B
- Total and dissolved metals by SW846 Method 6020
- Mercury by SW846 Method 7470
- VOCs by SW846 Method 8260
- Low-level SVOCs by SW846 Method 8270

TRC Quality Assurance (QA) staff reviewed resultant data on March 12, 2015. Six separate data packages identified as work orders 14021211, 14030008, 14030092, HS14080747, HS14080845, and 1412926 were reviewed. Data were reviewed for compliance with the

analytical protocols used for sample analysis and laboratory-defined control limits. Items reviewed during the data validation process included the following:

- Sample integrity
- Blank analyses
- Spike recoveries
- Duplicate recoveries
- Sample documentation

Data interpretation issues are identified in the following subsections.

#### **5.1.1 Holding Times**

- Laboratory notes indicate that all pH analyses were performed outside of holding time. The method states that samples must be analyzed immediately. ALS interprets this to mean within 15 minutes of collection. Samples collected in February were analyzed within 3 days of collection. Samples collected in August were analyzed within 8 days of collection.

#### **5.1.2 Continuing Calibrations**

- Laboratory notes indicate that continuing calibration (CCV) percent differences (%D) were above the control limits for 2-chlorotoluene in batch R240229. This compound was not reported; therefore, there are no data interpretation issues associated with this high %D.
- Laboratory notes indicate that continuing calibration (CCV) percent differences (%D) were above the control limits for bromomethane in batch R239746. This compound was not detected in any of the associated samples; therefore, there are no data interpretation issues associated with this high %D.

#### **5.1.3 Surrogates**

- In February 2014, the surrogate recovery of 2-fluorobiphenyl in sample MW-18 was lower than laboratory-specified limits. 2-Fluorobiphenyl is a base-neutral surrogate. The following base-neutral SVOCs were detected in sample MW-18 and should be considered estimated with a low bias: acetophenone and bis(2-ethylhexyl)phthalate. The reporting limits for the remaining base-neutral SVOCs may be inaccurate or imprecise.

- In December 2014, the surrogate recovery of 1,2-dichloroethane-d4 in sample TB-12-17-14-01 was less than laboratory-defined limits. No VOCs were detected in this sample. Because this sample is a trip blank, there are unlikely to be any data interpretation issues associated with this low surrogate recovery.

#### **5.1.4 Blanks**

- In February 2014, the following compounds were detected in equipment blank EB-A-2-28-14: benzaldehyde and bicarbonate alkalinity. The following compounds were detected in equipment blank EB-B-2-28-14: benzaldehyde, bicarbonate alkalinity, and specific conductivity.
  - Benzaldehyde was not detected in any of the associated samples collected in February 2014; therefore, there are no data interpretation issues associated with these blank detections.
  - All specific conductivity detections in February 2014 were greater than five times the blank concentration; therefore, there are no data interpretation issues associated with this blank detection.
  - Bicarbonate alkalinity was detected in the following samples in February 2014 within five times the maximum blank concentration: MW-28, MW-15, DUP-1, MW-16, MW-4, MW-2, MW-5, MW-21, MW-22, MW-23, MW-20, MW-26, MW-10, MW-9, MW-3, MW-18, MW-19, DUP-3, DUP-4, MW-12R, MW-7, RW-1, MW-1, MW-6, MW-29, MW-30, MW-24, MW-13, MW-27, MW-8, MW-17R, and WW-South. Detected bicarbonate alkalinity concentrations in these samples may include measurement contributions from inadequate decontamination of field equipment.
- In August 2014, the following compounds were detected in equipment blank EB-08-21-14-A : acetone, acetophenone, benzaldehyde, bis(2-ethylhexyl)phthalate, dimethyl phthalate, aluminum, barium, calcium, chromium, nickel, sodium, and zinc. The following compounds were detected in equipment blank EB-08-22-14-A: carbon disulfide, benzaldehyde, bis(2-ethylhexyl)phthalate, aluminum, barium, calcium, chromium, magnesium, sodium, and zinc.
  - Acetophenone, benzaldehyde, and carbon disulfide were not detected in any samples collected in August 2014; therefore, there are no data interpretation issues associated with these blank detections.

- Acetone was detected in samples MW-23 and MW-4 in August 2014 at concentrations within ten times the blank concentration and may include measurement contributions from inadequate decontamination of field equipment.
- Calcium, magnesium, and sodium were not detected in any associated sample at concentrations within five times the blank concentration; therefore, there are no data interpretation issues associated with these blank detections.
- Bis(2-ethylhexyl)phthalate was detected in the following samples in August 2014 within ten times the blank concentration: MW-4, MW-3, MW-9, MW-10, MW-7, RW-1, MW-1, MW-6, MW-2, MW-13, MW-5, MW-28, MW-20, MW-21, and MW-18. Detected bis(2-ethylhexyl)phthalate concentrations in these samples may include measurement contributions from inadequate decontamination of field equipment.
- Dimethyl phthalate was detected in samples MW-7 and RW-1 in August 2014 at concentrations within ten times the blank concentration and may include measurement contributions from inadequate decontamination of field equipment.
- Barium was detected in sample MW-3 in August 2014 at a concentration within five times the blank concentration and may include measurement contributions from inadequate decontamination of field equipment.
- Chromium was detected in the following samples in August 2014 within five times the blank concentration: MW-23, MW-26, MW-15, MW-27, MW-8, WW-EAST, MW-30, MW-16, MW-5, MW-28, MW-19, MW-12R, MW-14, and MW-18. Detected chromium concentrations in these samples may include measurement contributions from inadequate decontamination of field equipment.
- Nickel was detected in the following samples within five times the blank concentration: MW-26, MW-6, MW-8, MW-30, MW-17R, MW-13, MW-16, MW-28, MW-19, DUP-1, MW-11, MW-12R, MW-14, and MW-18. Detected nickel concentrations for these samples in August 2014 may include measurement contributions from inadequate decontamination of field equipment.
- Zinc was detected in all samples at concentrations within five times the blank concentration in August 2014 except for MW-3 and MW-30 and may include measurement contributions from inadequate decontamination of field equipment.

### **5.1.5 Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)**

- In February 2014, the RPDs for 4-Nitroaniline and pentachlorophenol in batch 77075 exceeded laboratory-defined control limits. These compounds were not detected in any associated samples; therefore, there are no data interpretation issues associated with these RPDs.
- In August 2014, the RPD of caprolactam exceeded laboratory-defined control limits in batch 85458. Caprolactam was detected in sample MW-4 and should be considered estimated.
- In August 2014, the RPDs of 2-chloronaphthalene and acenaphthene exceeded laboratory-defined control limits in batch 85507. 2-Chloronaphthalene was not detected in any of the associated samples. Acenaphthene was detected in samples MW-7 and RW-1 and should be considered estimated.

### **5.1.6 Matrix Spike/Matrix Spike Duplicate (MS/MSD)**

- In sample MW-26 in February 2014, recoveries of 2,6-dinitrotoluene exceeded laboratory-defined control limits. The RPD for 3,3'-dichlorobenzidine exceeded control limits in this sample. These compounds were not detected in this sample; therefore, no data interpretation issues are identified.
- In sample MW-29 in February 2014, the RPD for 3,3'-dichlorobenzidine exceeded laboratory-defined control limits. 3,3'-Dichlorobenzidine was not detected in this sample; therefore, no data interpretation issues are identified.
- Recoveries of several VOCs did not meet laboratory-defined limits in MS/MSD analyses in February 2014.
  - MW-26: The MS recovery of sec-butylbenzene was lower than laboratory-defined limits. Sec-butylbenzene was not detected in this sample, and it has not been historically detected in this sample; therefore, no data interpretation issues are associated with this MS recovery.
  - MW-3: The MS/MSD recoveries and RPD for chloroethane exceeded laboratory-defined limits. Chloroethane was not detected in this sample; therefore, no data interpretation issues are identified. MS and/or MSD recoveries for the following compounds were below laboratory-defined limits: 1,3,5-trimethylbenzene, 4-isopropyltoluene, carbon tetrachloride, n-butylbenzene, n-propylbenzene, sec-butylbenzene, and chloromethane. There were no historical detections of 1,3,5-trimethylbenzene, 4-isopropyltoluene, n-butylbenzene, n-propylbenzene, or sec-



butylbenzene; therefore, there are no data interpretation issues associated with these low recoveries. However, no historical data are available for carbon tetrachloride and chloromethane. The reporting limits may be inaccurate or imprecise.

- MW-29: The MS and/or MSD recoveries for the following compounds were lower than laboratory-defined limits: 1,1-dichloroethene, 1,3,5-trimethylbenzene, 4-isopropyltoluene, carbon tetrachloride, n-butylbenzene, n-propylbenzene, sec-butylbenzene, and tetrachloroethene. The RPDs of the following compounds exceeded control limits: carbon tetrachloride, n-butylbenzene, and sec-butylbenzene. None of these compounds were detected in sample MW-29. Historically, there were no detections of 1,3,5-trimethylbenzene, 4-isopropyltoluene, n-butylbenzene, n-propylbenzene, or sec-butylbenzene; therefore, there are no data interpretation issues associated with these recoveries and RPDs. Historical data for 1,1-dichloroethene, carbon tetrachloride, and tetrachloroethene are not available; therefore, the reporting limits may be inaccurate or imprecise.
- Recoveries of several VOCs did not meet laboratory-defined limits in MS/MSD analyses in August 2014.
  - WW-EAST: MSD recovery of 1,1,2,2-tetrachloroethane was greater than laboratory-defined limits. This constituent was not detected in WW-EAST; therefore, there are no data interpretation issues associated with this recovery.
  - RW-1: MS/MSD recoveries from chloromethane and vinyl chloride were less than laboratory-defined limits. These constituents were not detected in this sample and historical data are not available; therefore, the reporting limits may be inaccurate or imprecise.
  - DUP-4: MS/MSD recoveries of chloromethane and MSD recovery of vinyl chloride were less than laboratory-defined limits. These constituents were not detected in this sample and historical data are not available; therefore, the reporting limit may be inaccurate or imprecise.
  - MW-5: MSD recoveries of 1,3,5-trimethylbenzene, 4-isopropyltoluene, n-butylbenzene, n-propylbenzene, and sec-butylbenzene were less than laboratory-defined limits. There were no historical detections of these compounds; therefore, there are no data interpretation issues associated with these recoveries.

- The RPD for pentachlorophenol between MS/MSD analyses of MW-5 in August 2014 did not meet laboratory-defined limits. Pentachlorophenol was not detected in MW-5; therefore, there are no data interpretation issues associated with this RPD.
- Recoveries of metals did not meet laboratory-defined limits in the following samples from February 2014:
  - MW-26: the MS/MSD recoveries for calcium and sodium were lower than laboratory-defined limits; however, the sample detections were greater than four times the spike concentration. Therefore, there are no data interpretation issues associated with these recoveries.
  - MW-29: recoveries for calcium, chromium, and sodium were greater than laboratory-defined limits; however, the sample detections were greater than four times the spike concentration. Therefore, there are no data interpretation issues associated with these recoveries.
- Recoveries of metals did not meet laboratory-defined limits in the following samples from August 2014:
  - WW-EAST: The MS recovery for barium was lower than laboratory-defined limits. Barium results in all samples collected from August 2014 except for MW-5 should be considered biased low. Calcium and sodium recoveries were less than laboratory-defined limits; however, the spike concentrations were less than four times the sample concentration. There are no data interpretation issues associated with calcium and sodium.
  - MW-5: The MS/MSD recoveries and RPD for aluminum were outside of laboratory-defined limits. All aluminum results from August 2014 except for WW-EAST should be considered biased low. The MSD recovery for barium was below laboratory-defined limits. All barium results from August 2014 except for sample WW-EAST should be considered biased low. Recoveries for calcium and sodium did not meet laboratory-defined limits; however, spike concentrations were less than four times the sample concentration. There are no data interpretation issues associated with calcium and sodium.
- Recoveries of anions did not meet laboratory-defined limits in the following samples from February 2014:
  - MW-26: the MS/MSD recoveries for chloride and sulfate were outside laboratory-defined limits; however, the sample detections were greater than four times the

spike concentration. Therefore, there are no data interpretation issues associated with these recoveries.

- MW-29: the MS/MSD recoveries for chloride and sulfate were outside laboratory-defined limit; however, the sample detections were greater than four times the spike concentration. Therefore, there are no data interpretation issues associated with these recoveries. The MS recovery for fluoride was less than laboratory-defined limits; therefore, the fluoride detection in this sample should be considered estimated.
- MS/MSD recoveries of sulfate in sample WW-EAST in August 2014 were higher than laboratory-defined limits. Spike concentrations were greater than four times the sample concentrations; therefore, there are no data interpretation issues associated with these high recoveries.
- MS/MSD recoveries of nitrate/nitrite were lower than laboratory-defined limits in sample WW-EAST in August 2014. Nitrate/nitrite results should be considered estimated for all samples except for MW-3.
- MS/MSD recoveries for nitrate/nitrite in sample MW-3 in August 2014 exceeded laboratory-defined limits. The spike concentration was less than four times the sample concentration; therefore, there are no data interpretation issues associated with these high recoveries.
- In December 2014, MS/MSD recoveries for nitrite in sample DUP-1 were less than laboratory-defined limits. Nitrite was not detected in any sample from December 2014; therefore, the reporting limit may be inaccurate or imprecise.

#### **5.1.7 Laboratory Duplicates**

- The RPD for manganese and zinc in the laboratory duplicate analysis of the August 2014 sample WW-EAST exceeded laboratory control limits. August 2014 reported manganese results should be considered estimated in all samples except for MW-5.
- In February 2014, the RPD for zinc in sample MW-29 was greater than laboratory-defined limits. Zinc detections and non-detections should be considered estimated for all samples collected in February 2014 except for MW-26.

#### **5.1.8 Field Duplicates**

- In February 2014, the RPDs for the following samples did not meet control limits and detected concentrations should be considered estimated:
  - MW-29/DUP-2: zinc and total and bicarbonate alkalinity

- MW-19/DUP-3: aluminum and di-n-octyl phthalate
- MW-25/DUP-4: total and bicarbonate alkalinity
- In August 2014, the RPDs for aluminum, barium, manganese, nickel, and sodium in field duplicate pair MW-19/DUP-1 exceeded control limits. These detections should be considered estimated.
- Additional RPD values exceeded 20% and less than 60% in other field duplicate pairs; however, the detections were within five times the laboratory quantitation limit and are therefore not discussed further.

## 5.2 Monthly Water Well Samples

Six water samples and four trip blanks were collected on January 30, March 5, March 28, April 29, June 24, and July 28, 2014. These samples were submitted to ALS Laboratory Group in Houston, Texas for analyses. Data for the following methods are reported:

- Cyanide by SM Method 4500 CN E or U.S. EPA Method 335.4
- Metals by SW846 Method 6020
- Mercury by SW846 Method 7470
- VOCs by SW846 Method 8260
- Low-level SVOCs by SW846 Method 8270

TRC QA staff reviewed resultant data on March 12, 2015. Six separate data packages identified as work orders 1402100, 1403230, 1403C37, 1404B93, 1406B32, and 1407D13 were reviewed. Data were reviewed for compliance with the analytical protocols used for sample analysis and laboratory-defined control limits. Items reviewed during the data validation process included the following:

- Sample integrity
- Blank analyses
- Spike recoveries
- Duplicate recoveries
- Sample documentation

The following data interpretation issues were identified:

- Mercury was detected in the method blank for batch 12104 from the March 5, 2014 monthly sampling event. It was reported in sample East Water Well at 0.00011 J

mg/L and should be considered a potential false positive due to laboratory contamination.

- 2-Butanone was detected in the trip blank samples from the March 5, 2014 and July 28, 2014 monthly sampling events. 2-Butanone was not detected in the associated samples; therefore, there are no data interpretation issues associated with these detections.
- Trichloroethene was detected in the method blank for batch R18317 from the April 29, 2014 monthly sampling event. It was not detected in the associated sample; therefore, there are no data interpretation issues. Antimony was detected in method blank 13004 from the April 29, 2014 monthly sampling event. It was not detected in the associated sample; therefore, there are no data interpretation issues.
- Antimony was detected in the method blank for batch 13986 from the June 24, 2014 monthly sampling event. It was not detected in the associated sample; therefore, there are no data interpretation issues.
- 2-Butanone was detected in the method blank for batch R20215 from the July 28, 2014 monthly sampling event, but it was not detected in the associated sample. Therefore, there are no data interpretation issues associated with this detection.

## **6.0 2014 RELEASES AND REMEDIATION ACTIVITIES**

No reportable releases occurred at the refinery in 2014.

## 7.0 CONCLUSIONS

Conclusions based on data collected during groundwater monitoring activities conducted during calendar year 2014 are discussed below.

Groundwater flow directions were consistent with previous groundwater monitoring events. Groundwater elevations decreased an average 2.02 feet from February 2013 to February 2014 and from 1.28 feet August 2013 to August 2014. PSH was not detected in any monitoring wells. Groundwater elevations have continually decreased from June 2009 to August 2014. These reductions in groundwater are likely caused by limited recharge due to low rainfall levels and active pumping from on-site water supply wells and City of Lovington water supply wells located northwest and west (i.e., upgradient) of the refinery.

Benzene was detected above the WQCC standard during the February 2014 and August 2014 monitoring events in MW-11. Benzene concentrations in well MW-11 will be watched closely during future monitoring events. In addition, NRC will install ORC® socks in well MW-11 as an interim corrective action for elevated benzene concentrations in this well. No SVOCs were reported at concentrations above WQCC Standards in any well during either semi-annual monitoring event.

Anion exceedances of WQCC Standards reported during 2014 included chloride (in wells MW-8, MW-13, MW-15, MW-19, MW-23, MW-25, MW-27, and WW-South) and fluoride (in wells MW-3 and MW-24) in February 2014; and chloride (in wells MW-8, MW-13, MW-23, MW-25, MW-27, and WW-South) and fluoride (in wells MW-3, MW-24, and MW-28) in August 2014. The presence of select anions at concentrations above WQCC Standards in select wells is due to off-site sources, background concentrations, and/or non-NRC sources at the refinery.

TDS was reported at concentrations above its WQCC Standard in wells MW-8, MW-13, MW-23, MW-25, MW-27, and WW-South during the February 2014 and August 2014 semi-annual monitoring events. The presence of TDS at concentrations above WQCC Standards in select wells is due to off-site sources, background concentrations, and/or non-NRC sources at the refinery.

Metal exceedances of WQCC Standards reported during 2013 included chromium (in well MW-29), iron (in well MW-6), and manganese (in wells MW-6, MW-7, and MW-13) in February 2014; and aluminum (in well MW-22), chromium (in wells MW-9, MW-12R, MW-22, MW-24, MW-25, and MW-29), manganese (in wells, MW-6, MW-7, MW-11, and MW-13), and uranium (in well MW-22) in August 2014. The August 2014 metal results, particularly in wells MW-12R, MW-22, and MW-24, are anomalous compared to historical results and results of the most recent semi-annual monitoring event conducted in February 2015. The presence of select

metals at concentrations above WQCC Standards in select wells is due to off-site sources, background concentrations, and/or non-NRC sources at the refinery.

No constituents exceeded WQCC Standards in wells located along the southeastern refinery boundary (wells MW-5, MW-14, MW-12R, and MW-21), which is the natural downgradient portion of the facility (i.e., if active pumping from the on-site water supply wells ceased) with the exception of a chromium exceedance in MW-12R. The presence of chromium at concentrations above WQCC Standards in MW-12R is anomalous compared to historical results and results of the most recent semi-annual monitoring event conducted in February 2015. Groundwater pumping from refinery water supply wells WW-East, WW-North, and WW-South for industrial use causes radial groundwater flow towards a cone of depression at the central portion of the refinery preventing migration of constituents offsite, but also enables onsite migration of constituents from offsite sources (i.e., active oil production and injection wells).

WQCC Standards and RBRGs of Skinner List constituents were not exceeded in any of the monthly samples collected from water supply well WW-East. Chloride was detected in WW-South at a concentration of 390 mg/L in December 2014, which exceeds the WQCC standard of 250 mg/L. None of the remaining analytes were detected at concentrations above their respective WQCC Standards in any of the quarterly water supply well samples. Based on these results, the water poses no risk associated with continued use in refinery restrooms and safety showers.



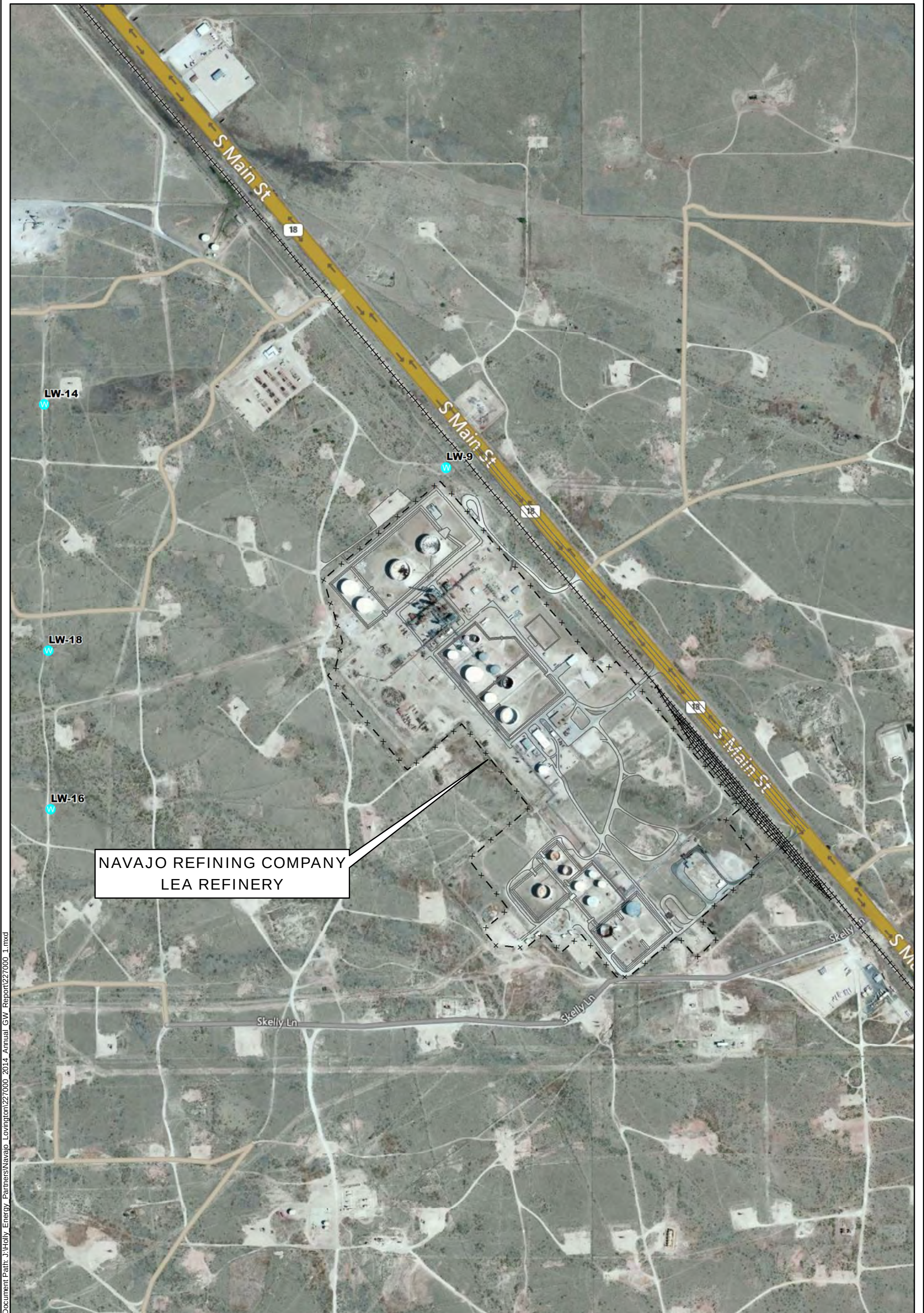
## 8.0 WORK PLANNED FOR 2015

The following summarizes the scope of work planned for 2015 at the refinery:

- Continue to implement semi-annual groundwater monitoring and annual reporting activities in accordance with the sampling and analysis plan presented in the rescinded Groundwater Discharge Permit (GW-014), pending OCD review and approval of the forthcoming Revised FWGWMWP, which will be submitted in April 2015. NRC will continue to evaluate further reductions of the sampling plan based on historical analytical trends in groundwater.
- Continue to implement quarterly water supply well monitoring in accordance with OCD's May 16, 2014, letter and NRC's response letter on June 20, 2014.
- Implement interim corrective action of benzene in well MW-11 via installation of ORC® socks to promote enhanced aerobic biodegradation. The ORC® socks will be installed and maintained in accordance with manufacturer recommendations.

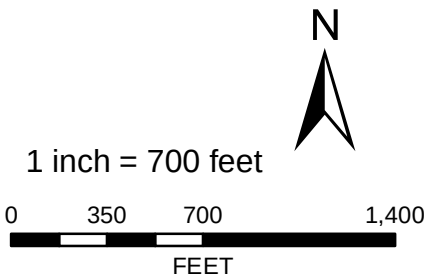
## Figure 1. Refinery Vicinity Map





**LEGEND**

-  LW - CITY OF LOVINGTON WATER WELL
-  RAIL
-  FENCE



**REFINERY VICINITY MAP**

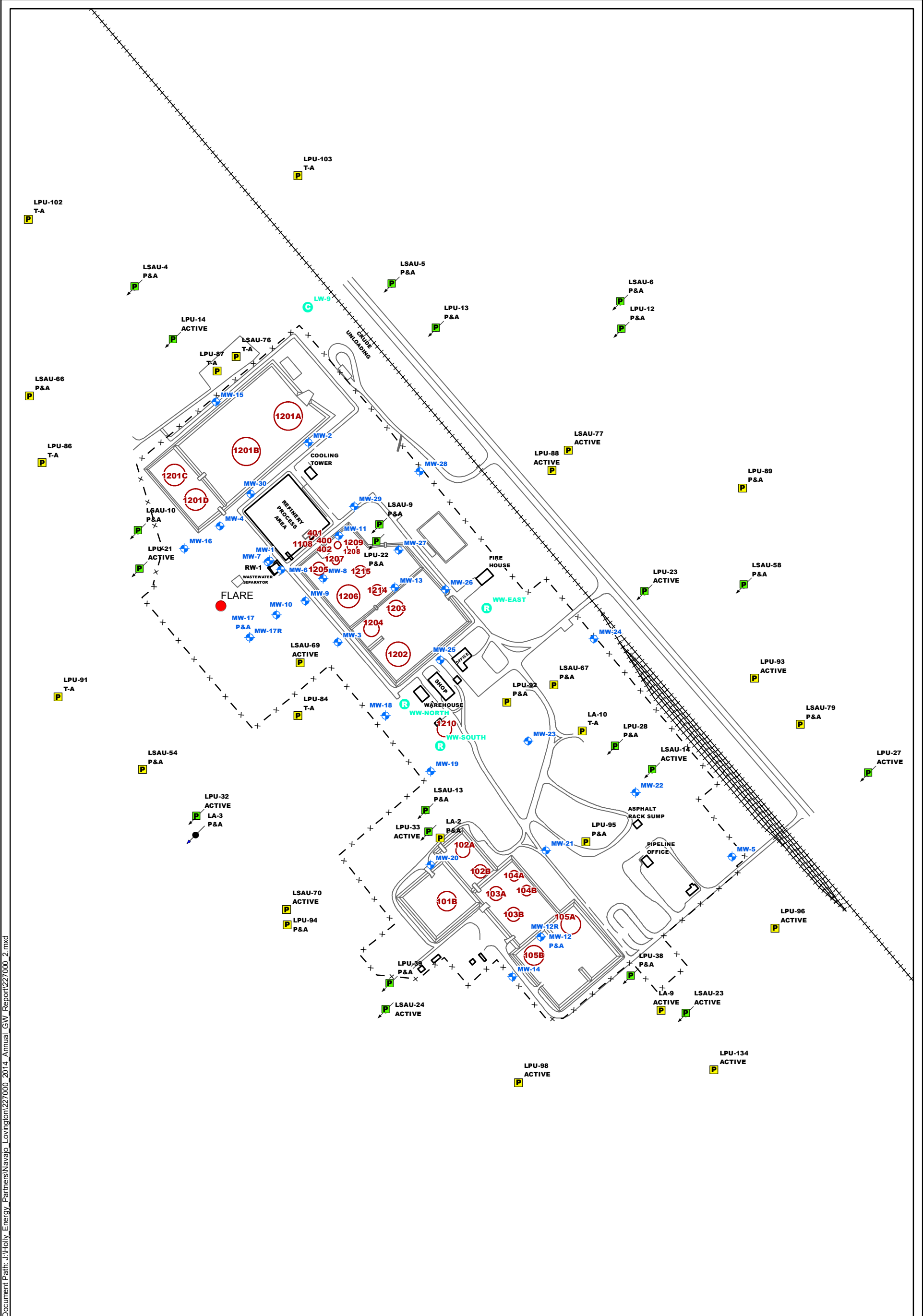
NAVAJO REFINING COMPANY  
LEA REFINERY LOVINGTON, NM

|                                                                                       |  |                                                                               |  |
|---------------------------------------------------------------------------------------|--|-------------------------------------------------------------------------------|--|
| PROJECT NO: 227000                                                                    |  | MXD: 227000_1                                                                 |  |
| AUTHOR: MFL                                                                           |  | DATE: 2/12/2015                                                               |  |
|  |  | 505 EAST HUNTLAND DRIVE<br>SUITE 250<br>AUSTIN, TEXAS 78752<br>(512) 329-6080 |  |
|                                                                                       |  | FIGURE<br>1                                                                   |  |



## Figure 2. Refinery Site Plan

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**LEGEND**

INJECTION WELL

MONITORING WELL

OIL PRODUCTION WELL

OIL PRODUCTION-CONVERTED TO INJECTION WELL

RECOVERY WELL

REFINERY WATER SUPPLY WELL

CITY OF LOVINGTON WATER SUPPLY WELL

WATER WELL

FLARE

RAIL

FENCE

BUILDINGS

TANKS

**REFINERY SITE PLAN**

NAVAJO REFINING COMPANY  
LEA REFINERY LOVINGTON, NM

PROJECT NO: 227000

AUTHOR: MFL

MXD: 227000\_2

DATE: 2/12/2015

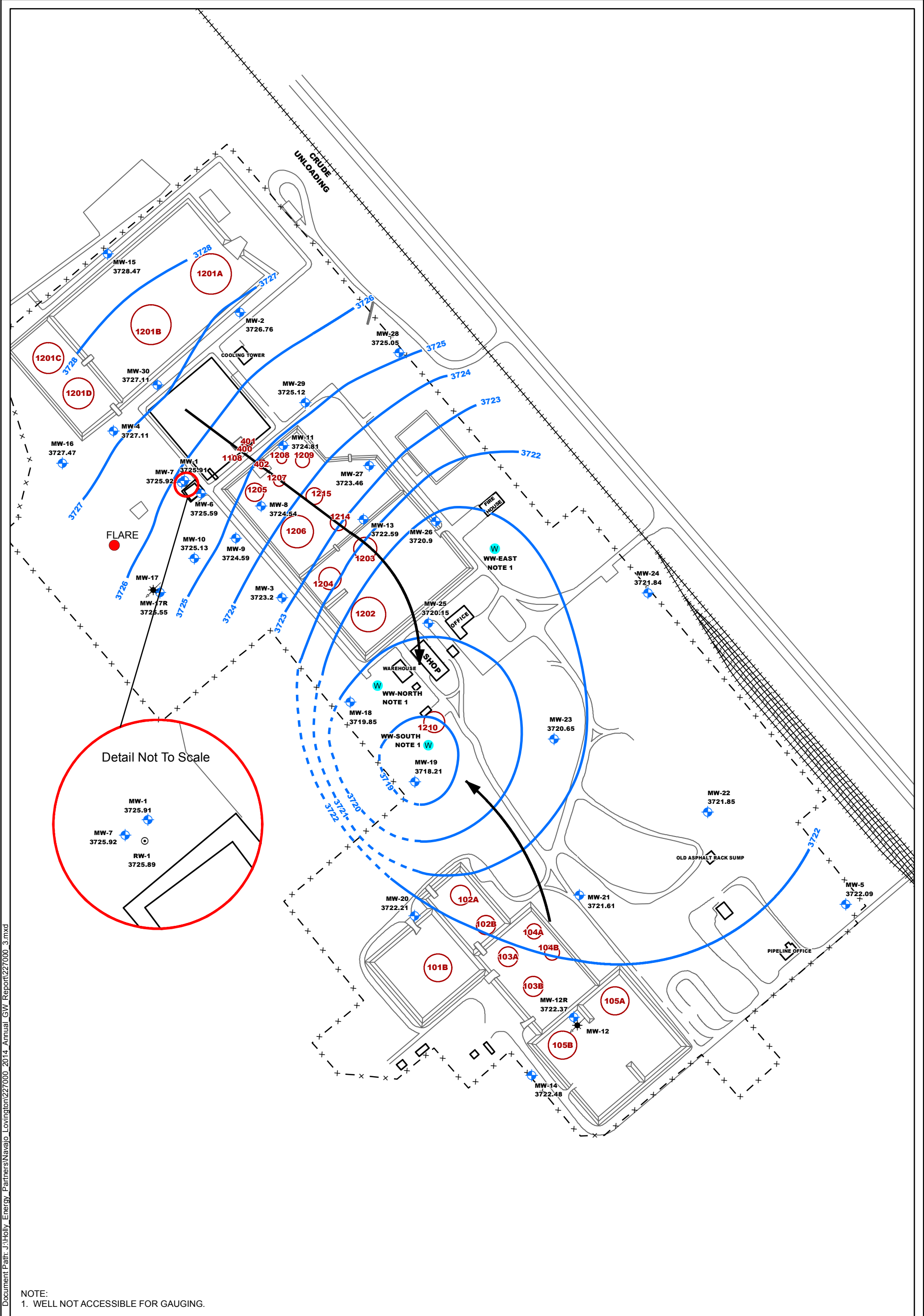
505 EAST HUNTLAND DRIVE  
SUITE 250  
AUSTIN, TEXAS 78752  
(512) 329-6080

FIGURE

2

**Figure 3. Groundwater Potentiometric Surface Map – February 2014**

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**LEGEND**

GROUNDWATER CONTOURS  
(DASHED WHERE INFERRED)

MONITORING WELL

WATER WELL

RECOVERY WELL

FLARE

PLUGGED AND ABANDONED  
MONITORING WELL

RAIL

FENCE

BUILDINGS

TANKS

GROUNDWATER FLOW  
DIRECTION

GROUNDWATER  
ELEVATION (FEET)

0175350700  
FEET

N

**GROUNDWATER POTENTIOMETRIC  
SURFACE MAP - FEBRUARY 2014**

NAVAJO REFINING COMPANY  
LEA REFINERY LOVINGTON, NM

PROJECT NO: 227000

MXD: 227000\_3

AUTHOR: MFL

DATE: 3/27/2015

505 EAST HUNTLAND DRIVE  
SUITE 250  
AUSTIN, TEXAS 78752  
(512) 329-6080

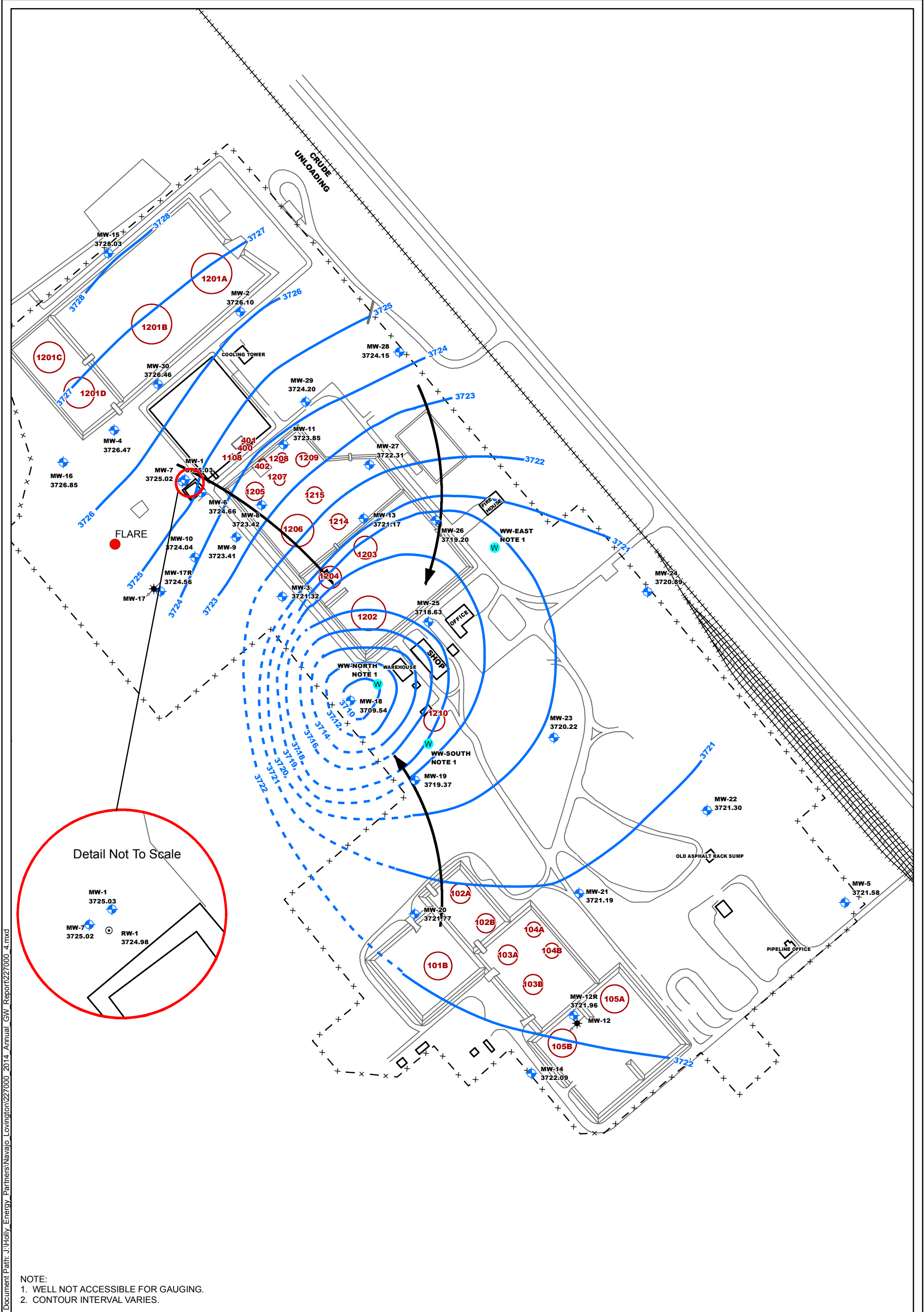
FIGURE

3

**Figure 4. Groundwater Potentiometric Surface Map – August 2014**



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NOTE:  
1. WELL NOT ACCESSIBLE FOR GAUGING.  
2. CONTOUR INTERVAL VARIES.

**LEGEND**

|                                              |                              |
|----------------------------------------------|------------------------------|
| GROUNDWATER CONTOURS (DASHED WHERE INFERRED) | RAIL                         |
| MONITORING WELL                              | GROUNDWATER FLOW DIRECTION   |
| PLUGGED AND ABANDONED MONITORING WELL        | GROUNDWATER ELEVATION (FEET) |
| RECOVERY WELL                                | BUILDINGS                    |
| WATER WELL                                   | TANKS                        |
| FLARE                                        |                              |
| FENCE                                        |                              |

0 175 350 700  
FEET

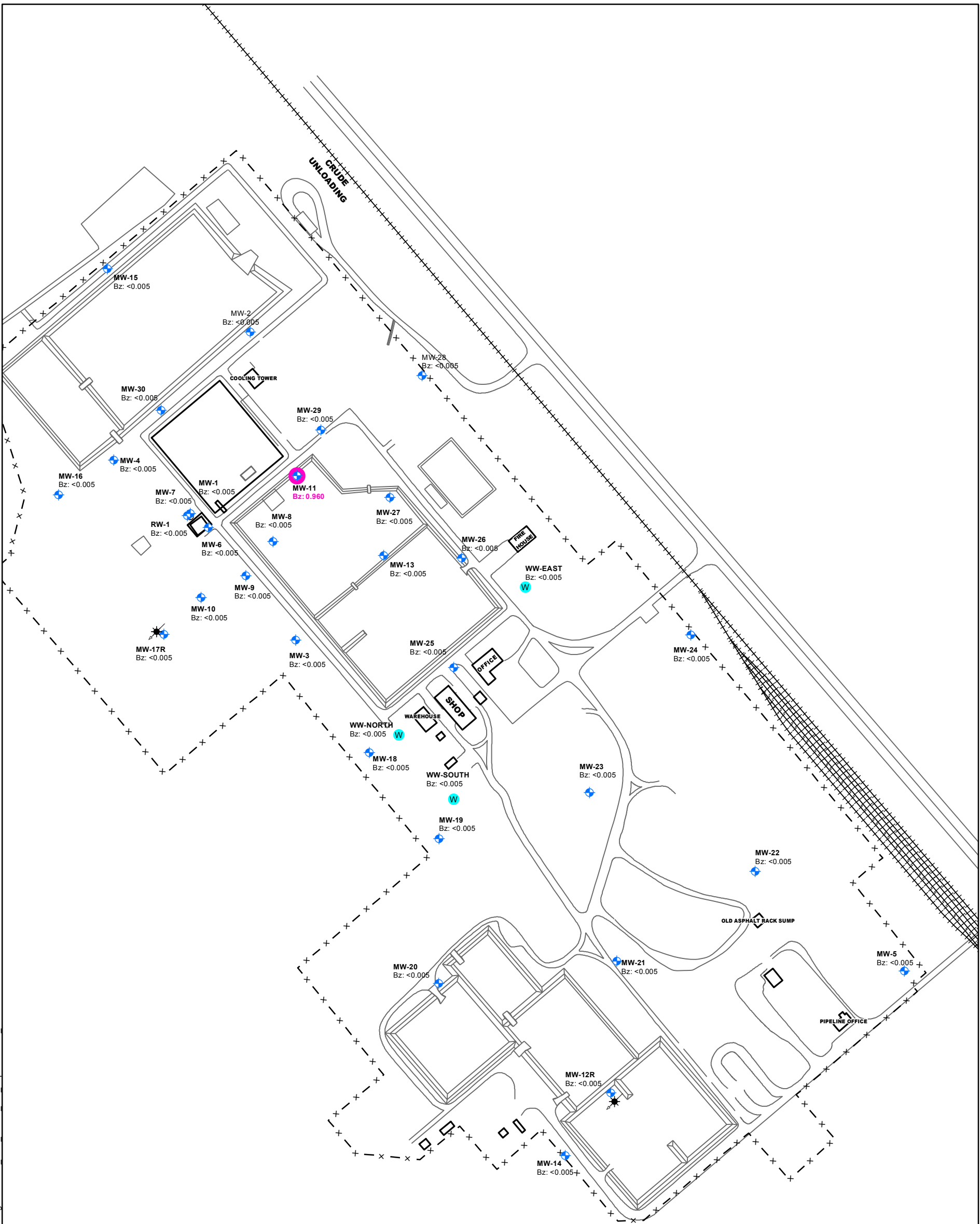
**GROUNDWATER POTENTIOMETRIC SURFACE MAP - AUGUST 2014**

NAVAJO REFINING COMPANY  
LEA REFINERY LOVINGTON, NM

|                    |                                                                               |
|--------------------|-------------------------------------------------------------------------------|
| PROJECT NO: 227000 | MXD: 227000_4                                                                 |
| AUTHOR: MFL        | DATE: 3/27/2015                                                               |
|                    | 505 EAST HUNTLAND DRIVE<br>SUITE 250<br>AUSTIN, TEXAS 78752<br>(512) 329-6080 |
| FIGURE             | 4                                                                             |

## **Figure 5. Volatile Organic Compound Concentration Map – February 2014**

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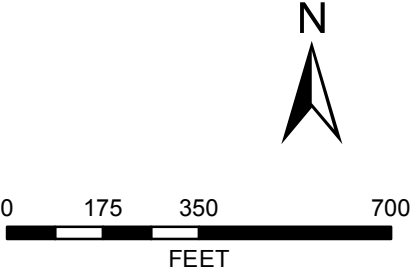


NOTES:  
1. ALL CONCENTRATIONS IN mg/L.  
2. BENZENE RESULTS SHOWN FOR ALL WELLS BECAUSE IT IS THE ONLY VOC THAT EXCEEDED THE WQCC STANDARD.

**LABEL KEY:**  
**Bz: 0.110 - BENZENE CONCENTRATION (WQCC STANDARD = <0.0050 mg/L)**  
**HIGHLIGHTED NOTES IN EXCEEDANCE OF WQCC STANDARD.**

**LEGEND**

- MONITORING WELL
- RECOVERY WELL
- WATER WELL
- PLUGGED AND ABANDONED MONITORING WELLS
- WQCC STANDARD EXCEEDED AT THIS LOCATION
- RAIL
- FENCE
- BUILDINGS



**VOLATILE ORGANIC COMPOUND  
CONCENTRATION MAP - FEBRUARY 2014**

NAVAJO REFINING COMPANY  
LEA REFINERY LOVINGTON, NM

|                    |                 |
|--------------------|-----------------|
| PROJECT NO: 227000 | MXD: 227000_5   |
| AUTHOR: MFL        | DATE: 3/27/2015 |

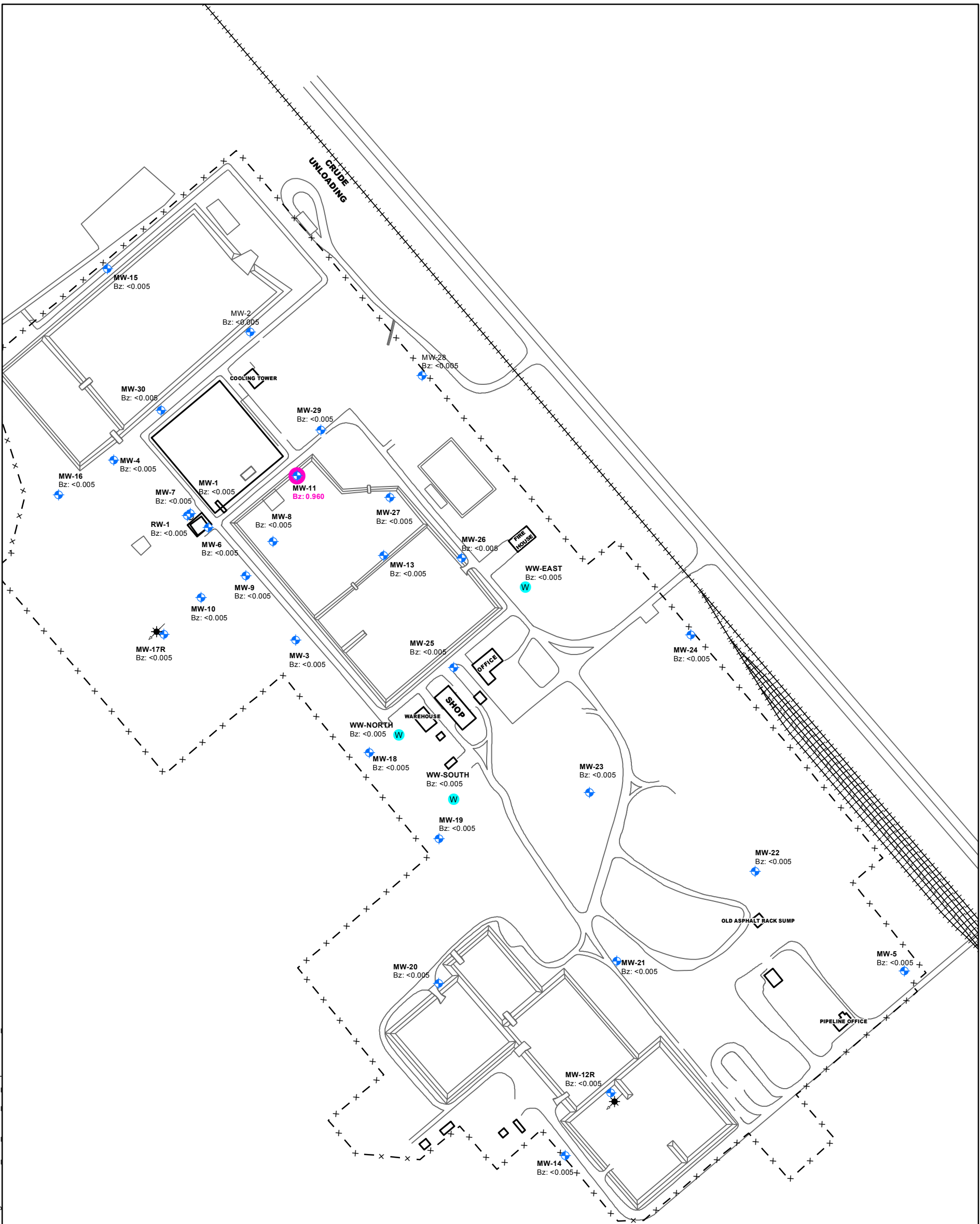


505 EAST HUNTLAND DRIVE  
SUITE 250  
AUSTIN, TEXAS 78752  
(512) 329-6080

FIGURE  
5

**Figure 6. Volatile Organic Compound Concentration Map – August 2014**

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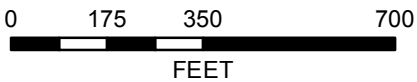


NOTES:  
1. ALL CONCENTRATIONS IN mg/L.  
2. BENZENE RESULTS SHOWN FOR ALL WELLS BECAUSE IT IS THE ONLY VOC THAT EXCEEDED THE WQCC STANDARD.

**LABEL KEY:**  
**Bz: 0.110 - BENZENE CONCENTRATION (WQCC STANDARD = <0.0050 mg/L)**  
**HIGHLIGHTED NOTES IN EXCEEDANCE OF WQCC STANDARD.**

**LEGEND**

- MONITORING WELL
- RECOVERY WELL
- WATER WELL
- PLUGGED AND ABANDONED MONITORING WELLS
- WQCC STANDARD EXCEEDED AT THIS LOCATION
- RAIL
- FENCE
- BUILDINGS



**VOLATILE ORGANIC COMPOUND  
CONCENTRATION MAP - AUGUST 2014**

NAVAJO REFINING COMPANY  
LEA REFINERY LOVINGTON, NM

PROJECT NO: 227000

MXD: 227000\_6

AUTHOR: MFL

DATE: 3/27/2015



505 EAST HUNTLAND DRIVE  
SUITE 250  
AUSTIN, TEXAS 78752  
(512) 329-6080

FIGURE

6

### **Figure 7. Anions Concentration Map – February 2014**



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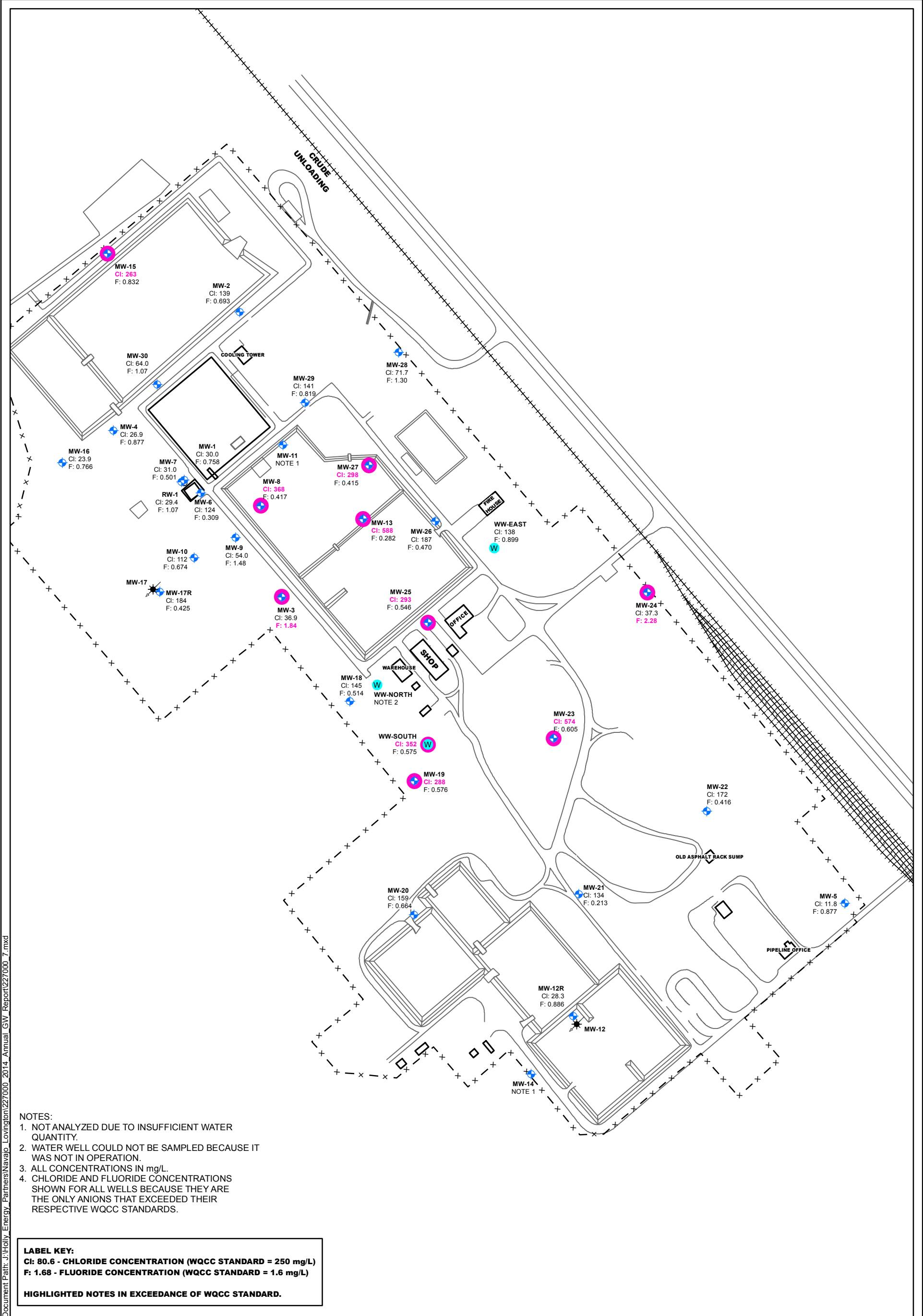
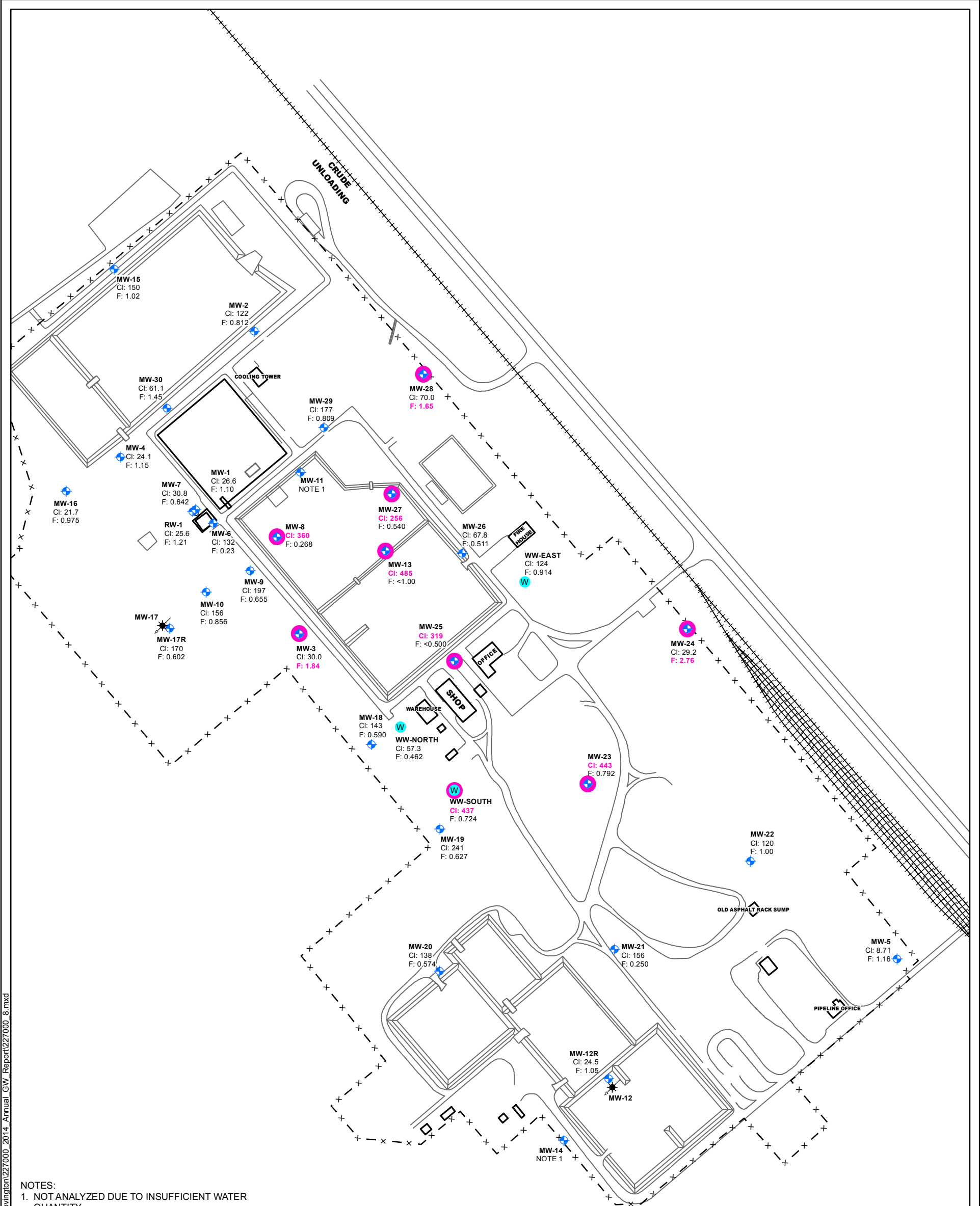


**Figure 8. Anions Concentration Map – August 2014**

Document Path: J:\Holly Energy Partners\Navajo Lovington\227000\_2014 Annual GW Report\227000\_8.mxd

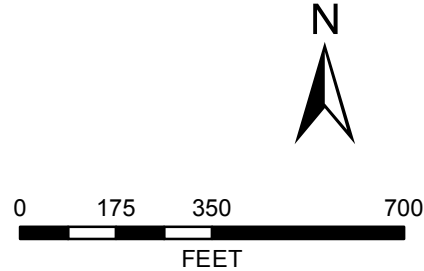


NOTES:  
1. NOT ANALYZED DUE TO INSUFFICIENT WATER QUANTITY.  
2. WATER WELL COULD NOT BE SAMPLED BECAUSE IT WAS NOT IN OPERATION.  
3. ALL CONCENTRATIONS IN mg/L.  
4. CHLORIDE AND FLUORIDE CONCENTRATIONS SHOWN FOR ALL WELLS BECAUSE THEY ARE THE ONLY ANIONS THAT EXCEEDED THEIR RESPECTIVE WQCC STANDARDS.

**LABEL KEY:**  
**Cl: 80.6 - CHLORIDE CONCENTRATION (WQCC STANDARD = 250 mg/L)**  
**F: 1.68 - FLUORIDE CONCENTRATION (WQCC STANDARD = 1.6 mg/L)**  
**HIGHLIGHTED NOTES IN EXCEEDANCE OF WQCC STANDARD.**

**LEGEND**

- MONITORING WELL
- RECOVERY WELL
- WATER WELL
- PLUGGED AND ABANDONED MONITORING WELLS
- WQCC STANDARD EXCEEDED AT THIS LOCATION
- RAIL
- FENCE
- BUILDINGS



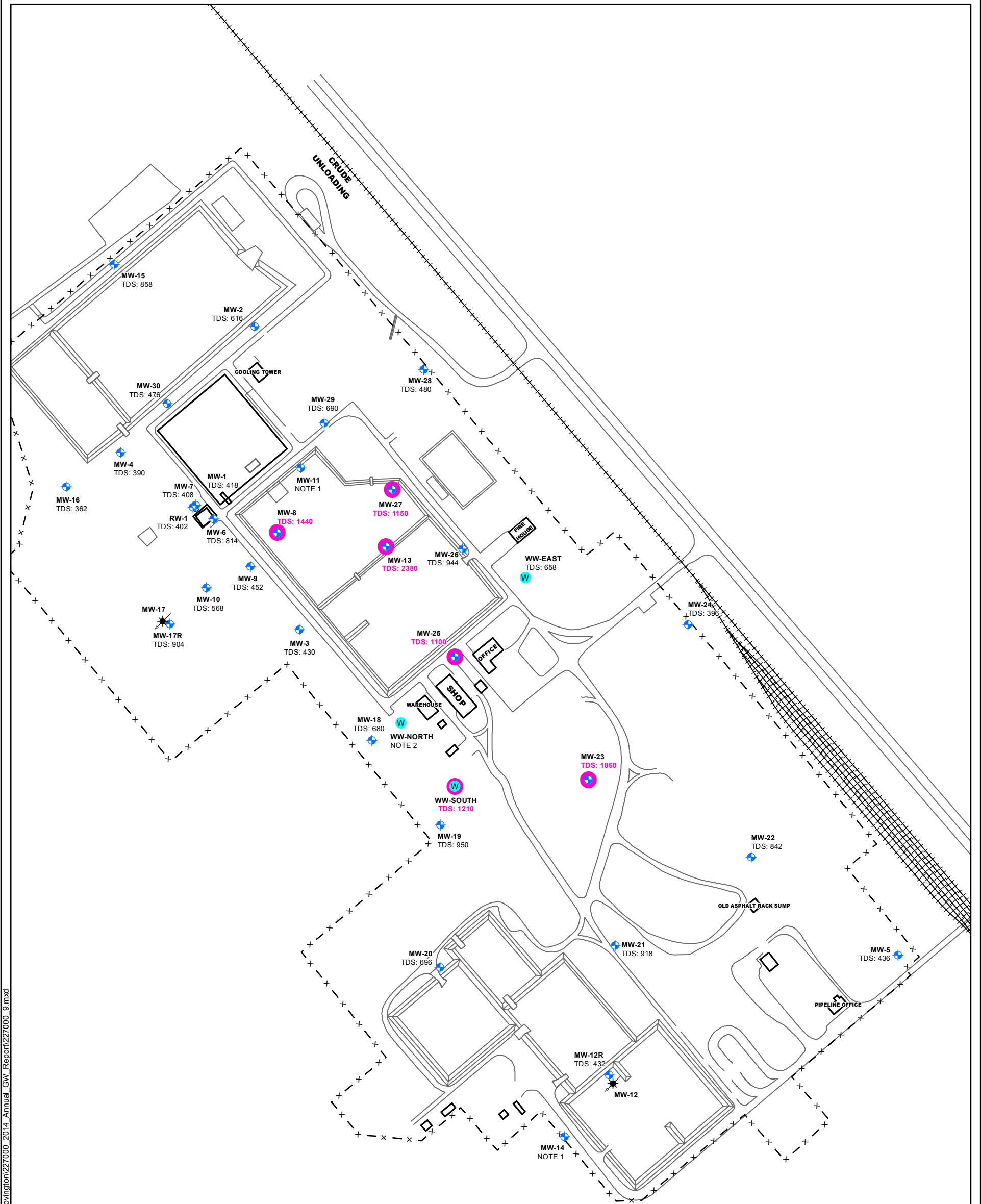
**ANIONS  
CONCENTRATION MAP - AUGUST 2014**

NAVAJO REFINING COMPANY  
LEA REFINERY LOVINGTON, NM

|                    |                                                                               |
|--------------------|-------------------------------------------------------------------------------|
| PROJECT NO: 227000 | MXD: 227000_8                                                                 |
| AUTHOR: MFL        | DATE: 3/27/2015                                                               |
|                    | 505 EAST HUNTLAND DRIVE<br>SUITE 250<br>AUSTIN, TEXAS 78752<br>(512) 329-6080 |
| FIGURE             | 8                                                                             |

**Figure 9. Total Dissolved Solids Concentration Map – February 2014**

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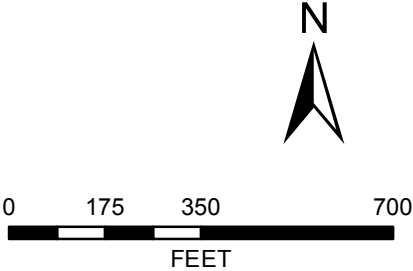
- NOTES:
1. NOT ANALYZED DUE TO INSUFFICIENT WATER QUANTITY.
  2. WATER WELL COULD NOT BE SAMPLED BECAUSE IT WAS NOT IN OPERATION.
  3. ALL CONCENTRATIONS IN mg/L.

**LABEL KEY:**  
**TDS: 1080 - TOTAL DISSOLVED SOLIDS CONCENTRATION (WQCC STANDARD = 1,000 mg/L)**

**HIGHLIGHTED NOTES IN EXCEEDANCE OF WQCC STANDARD.**

LEGEND

- MONITORING WELL
- RECOVERY WELL
- WATER WELL
- PLUGGED AND ABANDONED MONITORING WELLS
- WQCC STANDARD EXCEEDED AT THIS LOCATION
- RAIL
- FENCE
- BUILDINGS



TOTAL DISSOLVED SOLIDS  
CONCENTRATION MAP - FEBRUARY 2014

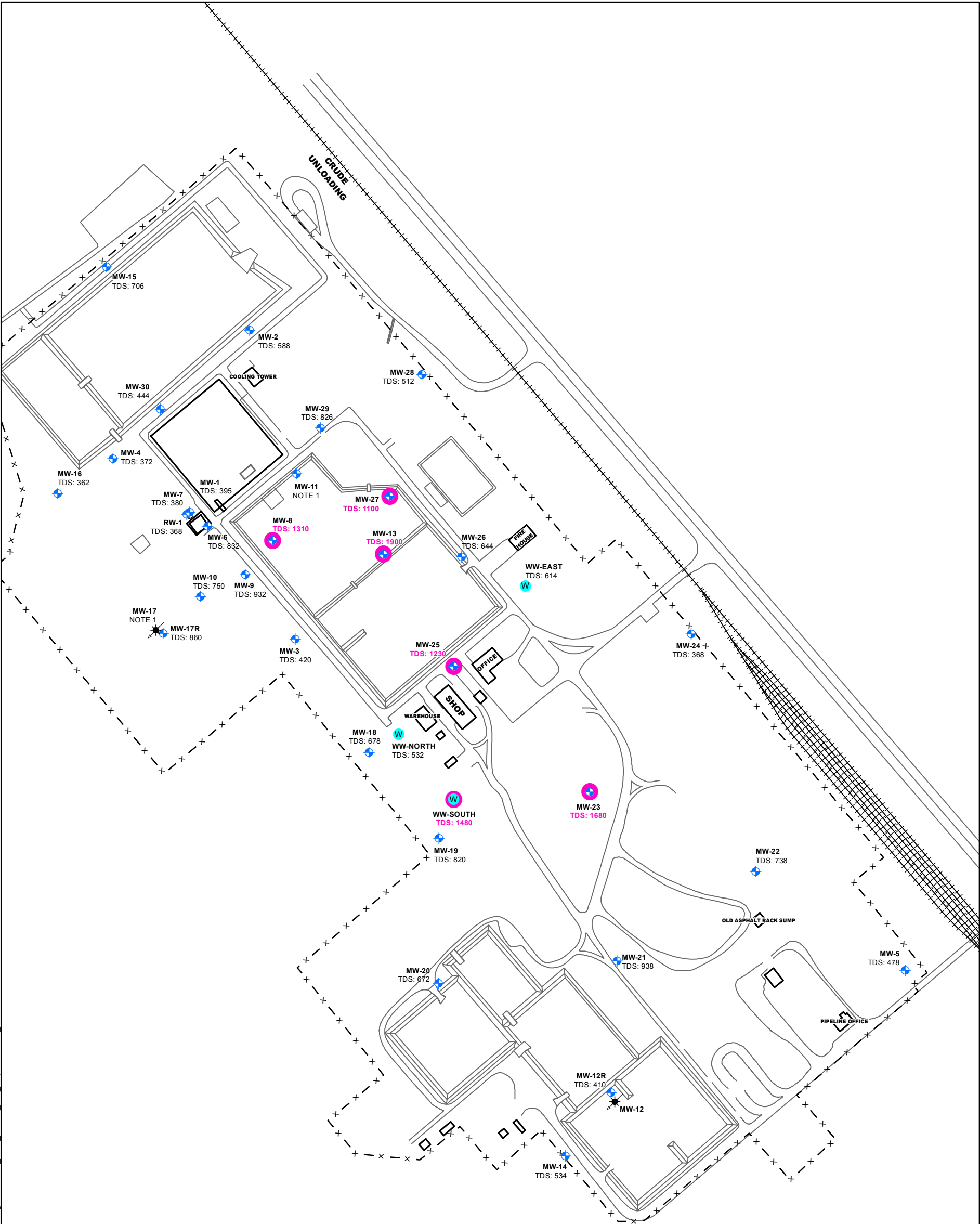
NAVAJO REFINING COMPANY  
LEA REFINERY LOVINGTON, NM

|                    |                                                                               |
|--------------------|-------------------------------------------------------------------------------|
| PROJECT NO: 227000 | MXD: 227000_9                                                                 |
| AUTHOR: MFL        | DATE: 3/27/2015                                                               |
|                    | 505 EAST HUNTLAND DRIVE<br>SUITE 250<br>AUSTIN, TEXAS 78752<br>(512) 329-6080 |
| FIGURE             | 9                                                                             |

**Figure 10. Total Dissolved Solids Concentration Map – August 2014**



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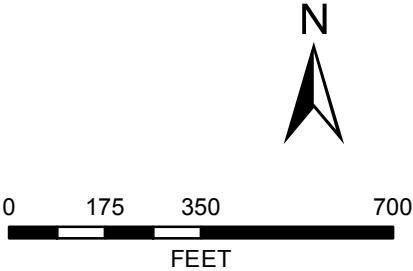
NOTES:  
1. WATER WELL COULD NOT BE SAMPLED BECAUSE IT WAS NOT IN OPERATION.  
2. WELL COULD NOT BE SAMPLED DUE TO INSUFFICIENT VOLUME.  
3. ALL CONCENTRATIONS IN mg/L.

**LABEL KEY:**  
**TDS: 410 - TOTAL DISSOLVED SOLIDS CONCENTRATION (WQCC STANDARD = 1,000 mg/L)**

**HIGHLIGHTED NOTES IN EXCEEDANCE OF WQCC STANDARD.**

LEGEND

- MONITORING WELL
- RECOVERY WELL
- WATER WELL
- PLUGGED AND ABANDONED MONITORING WELLS
- WQCC STANDARD EXCEEDED AT THIS LOCATION
- RAIL
- FENCE
- BUILDINGS



TOTAL DISSOLVED SOLIDS CONCENTRATION MAP - AUGUST 2014

NAVAJO REFINING COMPANY  
LEA REFINERY LOVINGTON, NM

|                    |                 |
|--------------------|-----------------|
| PROJECT NO: 227000 | MXD: 227000_10  |
| AUTHOR: MFL        | DATE: 3/27/2015 |



505 EAST HUNTLAND DRIVE  
SUITE 250  
AUSTIN, TEXAS 78752  
(512) 329-6080

FIGURE  
10

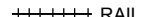
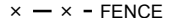
**Figure 11. Metals Concentration Map – February 2014**

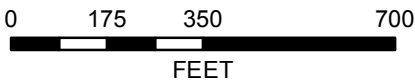
Document Path: J:\Holly\_Energy\_Partners\Navajo Lovington\227000\_2014 Annual GW Report\227000\_11.mxd

- NOTES:
1. WELL COULD NOT BE SAMPLED DUE TO INSUFFICIENT VOLUME.
  2. WATER WELL COULD NOT BE SAMPLED BECAUSE IT WAS NOT IN OPERATION.
  3. ALL CONCENTRATIONS IN mg/L.
  4. CHROMIUM, IRON, AND MANGANESE SHOWN FOR ALL WELLS BECAUSE THEY ARE THE ONLY METALS THAT EXCEEDED THEIR RESPECTIVE WQCC STANDARDS.

**LABEL KEY:**  
**Cr: <0.00500 - CHROMIUM CONCENTRATION (WQCC STANDARD = 0.05 mg/L)**  
**Fe: <0.200 - IRON CONCENTRATION (WQCC STANDARD = 1.0 mg/L)**  
**Mn: <0.00500 - MANGANESE CONCENTRATION (WQCC STANDARD = 0.20 mg/L)**  
  
**HIGHLIGHTED NOTES IN EXCEEDANCE OF WQCC STANDARD.**

LEGEND

-  MONITORING WELL
-  RECOVERY WELL
-  WATER WELL
-  PLUGGED AND ABANDONED MONITORING WELLS
-  WQCC STANDARD EXCEEDED AT THIS LOCATION
-  RAIL
-  FENCE
-  BUILDINGS



METALS  
CONCENTRATION MAP - FEBRUARY 2014

NAVAJO REFINING COMPANY  
LEA REFINERY LOVINGTON, NM

PROJECT NO: 227000

MXD: 227000\_11

AUTHOR: MFL

DATE: 3/27/2015

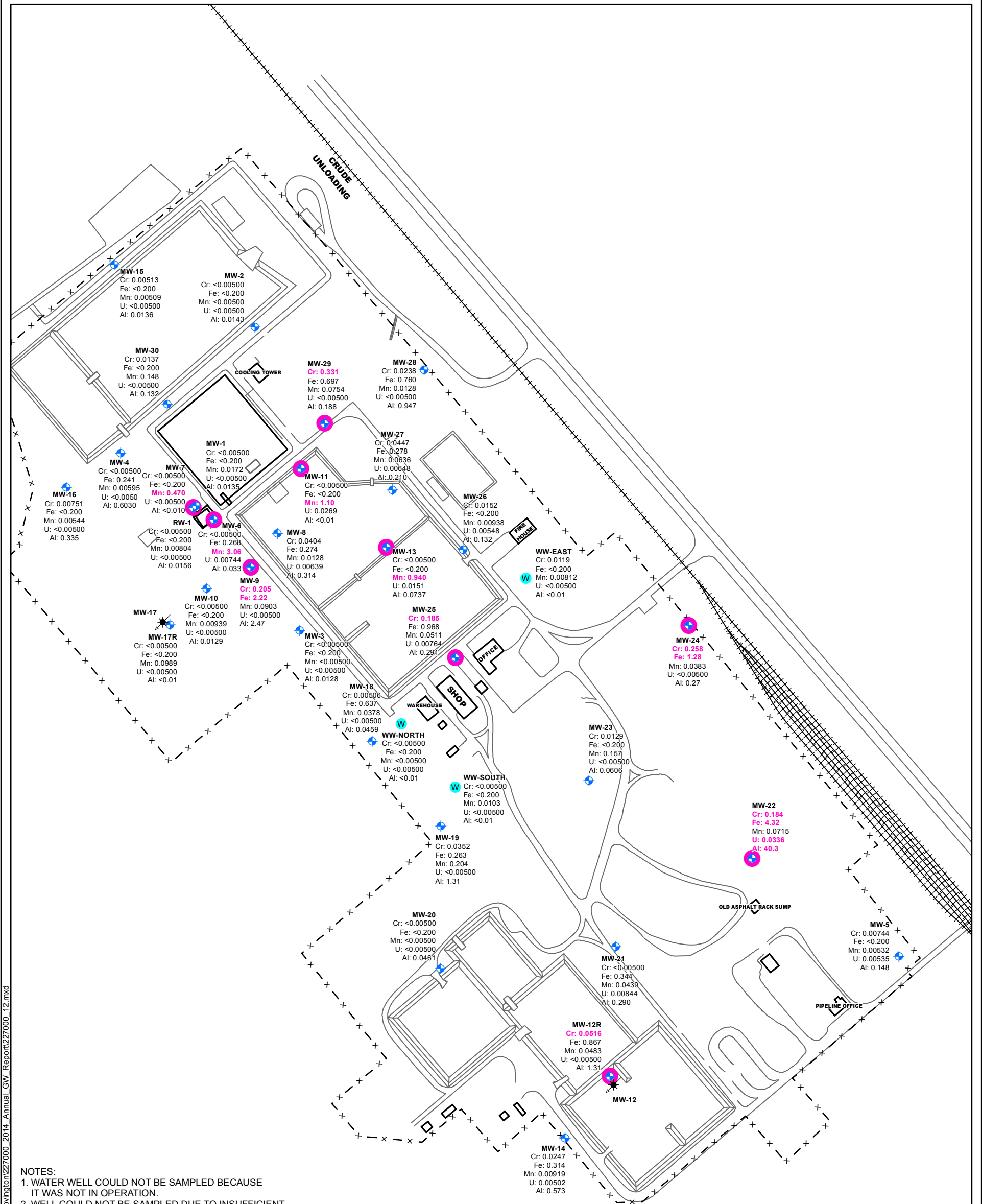


505 EAST HUNTLAND DRIVE  
SUITE 250  
AUSTIN, TEXAS 78752  
(512) 329-6080

FIGURE

11

**Figure 12. Metals Concentration Map – August 2014**



NOTES:  
1. WATER WELL COULD NOT BE SAMPLED BECAUSE IT WAS NOT IN OPERATION.  
2. WELL COULD NOT BE SAMPLED DUE TO INSUFFICIENT VOLUME.  
3. ALL CONCENTRATIONS IN mg/L.  
4. CHROMIUM, IRON, MANGANESE, URANIUM AND ALUMINUM ARE SHOWN FOR ALL WELLS BECAUSE THEY ARE THE ONLY METALS THAT EXCEEDED THEIR RESPECTIVE WQCC STANDARD.

**LABEL KEY:**  
**Cr: <0.00500 - CHROMIUM CONCENTRATION (WQCC STANDARD = 0.05 mg/L)**  
**Fe: <0.200 - IRON CONCENTRATION (WQCC STANDARD = 1.0 mg/L)**  
**Mn: <0.00500 - MANGANESE CONCENTRATION (WQCC STANDARD = 0.20 mg/L)**  
**U: <0.00300 - URANIUM CONCENTRATION (WQCC STANDARD = 0.03 mg/L)**  
**Al: <0.05 - ALUMINUM CONCENTRATION (WQCC STANDARD = 5.0 mg/L)**

**HIGHLIGHTED NOTES IN EXCEEDANCE OF WQCC STANDARD.**

**LEGEND**  
MONITORING WELL  
RECOVERY WELL  
WATER WELL  
PLUGGED AND ABANDONED MONITORING WELLS  
WQCC STANDARD EXCEEDED AT THIS LOCATION  
RAIL  
FENCE  
BUILDINGS

0 175 350 700  
FEET

**METALS CONCENTRATION MAP - AUGUST 2014**  
NAVAJO REFINING COMPANY  
LEA REFINERY LOVINGTON, NM

|                    |                 |
|--------------------|-----------------|
| PROJECT NO: 227000 | MXD: 227000_12  |
| AUTHOR: MFL        | DATE: 3/27/2015 |

505 EAST HUNTLAND DRIVE  
SUITE 250  
AUSTIN, TEXAS 78752  
(512) 329-6080

FIGURE 12

### **Table 1. Water Elevation Measurements**



Table 1. Water Elevation Measurements, Navajo Refining Company, Lea Refinery, Lovington, NM

| Monitor Well          | Top of Casing Elevation (feet) | Well Screen Interval (feet) | Date     | Depth to Product (feet, btoc) | Depth to Water (feet, btoc) | Total Depth (feet) | Product Thickness (feet) | Corrected Depth to Water (feet) | Corrected Water Level Elev. (feet) | Change from previous event (feet) |
|-----------------------|--------------------------------|-----------------------------|----------|-------------------------------|-----------------------------|--------------------|--------------------------|---------------------------------|------------------------------------|-----------------------------------|
| MW-1 <sup>(1,5)</sup> | 3,838.40                       | 3,739.19 to 3,709.19        | 04/30/09 | --                            | 106.35                      | 136.10             | 0.00                     | 106.35                          | 3,732.05                           | NA                                |
|                       |                                |                             | 06/10/09 | --                            | 106.49                      | NM                 | 0.00                     | 106.49                          | 3,731.91                           | -0.14                             |
|                       |                                |                             | 06/19/09 | --                            | 106.57                      | 129.12             | 0.00                     | 106.57                          | 3,731.83                           | -0.08                             |
|                       |                                |                             | 07/02/09 | --                            | 106.74                      | 129.13             | 0.00                     | 106.74                          | 3,731.66                           | -0.17                             |
|                       |                                |                             | 07/24/09 | --                            | 106.83                      | 129.11             | 0.00                     | 106.83                          | 3,731.57                           | -0.09                             |
|                       |                                |                             | 09/24/09 | --                            | 107.31                      | 129.12             | 0.00                     | 107.31                          | 3,731.09                           | -0.48                             |
|                       |                                |                             | 10/27/09 | --                            | 107.44                      | 129.10             | 0.00                     | 107.44                          | 3,730.96                           | -0.13                             |
|                       |                                |                             | 01/13/10 | --                            | 107.57                      | 129.11             | 0.00                     | 107.57                          | 3,730.83                           | -0.13                             |
|                       |                                |                             | 04/01/10 | --                            | 107.51                      | NM                 | 0.00                     | 107.51                          | 3,730.89                           | 0.06                              |
|                       |                                |                             | 08/11/10 | --                            | 108.09                      | 129.16             | 0.00                     | 108.09                          | 3,730.31                           | -0.58                             |
|                       |                                |                             | 02/23/11 | --                            | 108.12                      | 129.14             | 0.00                     | 108.12                          | 3,730.28                           | -0.03                             |
|                       |                                |                             | 07/12/11 | --                            | 109.00                      | 129.11             | 0.00                     | 109.00                          | 3,729.40                           | -0.88                             |
|                       |                                |                             | 02/02/12 | --                            | 109.68                      | 129.12             | 0.00                     | 109.68                          | 3,728.72                           | -0.68                             |
|                       |                                |                             | 07/23/12 | --                            | 110.88                      | 128.87             | 0.00                     | 110.88                          | 3,727.52                           | -1.20                             |
|                       |                                |                             | 02/18/13 | --                            | 110.51                      | 129.22             | 0.00                     | 110.51                          | 3,727.89                           | 0.37                              |
|                       |                                |                             | 08/19/13 | --                            | 111.55                      | 130.60             | 0.00                     | 111.55                          | 3,726.85                           | -1.04                             |
|                       |                                |                             | 02/24/14 | --                            | 112.49                      | 129.35             | 0.00                     | 112.49                          | 3,725.91                           | -0.94                             |
|                       |                                |                             | 08/18/14 | --                            | 113.37                      | 129.09             | 0.00                     | 113.37                          | 3,725.03                           | -0.88                             |
| MW-2 <sup>(1,5)</sup> | 3,837.35                       | 3,739.77 to 3,709.77        | 06/22/09 | --                            | 104.32                      | 126.41             | 0.00                     | 104.32                          | 3,733.03                           | NA                                |
|                       |                                |                             | 01/13/10 | --                            | 105.44                      | 126.68             | 0.00                     | 105.44                          | 3,731.91                           | -1.12                             |
|                       |                                |                             | 08/11/10 | --                            | 105.97                      | 126.42             | 0.00                     | 105.97                          | 3,731.38                           | -0.53                             |
|                       |                                |                             | 02/23/11 | --                            | 105.92                      | 126.46             | 0.00                     | 105.92                          | 3,731.43                           | 0.05                              |
|                       |                                |                             | 07/12/11 | --                            | 107.22                      | 126.47             | 0.00                     | 107.22                          | 3,730.13                           | -1.30                             |
|                       |                                |                             | 01/30/12 | --                            | 107.55                      | 126.47             | 0.00                     | 107.55                          | 3,729.80                           | -0.33                             |
|                       |                                |                             | 07/23/12 | --                            | 108.72                      | 126.48             | 0.00                     | 108.72                          | 3,728.63                           | -1.17                             |
|                       |                                |                             | 02/18/13 | --                            | 108.15                      | 126.69             | 0.00                     | 108.15                          | 3,729.20                           | 0.57                              |
|                       |                                |                             | 08/19/13 | --                            | 109.43                      | 126.75             | 0.00                     | 109.43                          | 3,727.92                           | -1.28                             |
|                       |                                |                             | 02/24/14 | --                            | 110.59                      | 127.70             | 0.00                     | 110.59                          | 3,726.76                           | -1.16                             |
|                       |                                |                             | 08/18/14 | --                            | 111.25                      | 126.58             | 0.00                     | 111.25                          | 3,726.10                           | -0.66                             |
| MW-3 <sup>(1,5)</sup> | 3,831.65                       | 3,733.73 to 3,703.73        | 06/16/09 | --                            | 102.65                      | 130.45             | 0.00                     | 102.65                          | 3,729.00                           | NA                                |
|                       |                                |                             | 01/13/10 | --                            | 103.29                      | 130.69             | 0.00                     | 103.29                          | 3,728.36                           | -0.64                             |
|                       |                                |                             | 08/11/10 | --                            | 104.82                      | 130.42             | 0.00                     | 104.82                          | 3,726.83                           | -1.53                             |
|                       |                                |                             | 09/28/10 | --                            | 104.70                      | NM                 | 0.00                     | 104.70                          | 3,726.95                           | 0.12                              |
|                       |                                |                             | 02/23/11 | --                            | 104.11                      | 130.47             | 0.00                     | 104.11                          | 3,727.54                           | 0.59                              |
|                       |                                |                             | 07/12/11 | --                            | 104.89                      | 130.50             | 0.00                     | 104.89                          | 3,726.76                           | -0.78                             |
|                       |                                |                             | 01/30/12 | --                            | 105.22                      | 130.45             | 0.00                     | 105.22                          | 3,726.43                           | -0.33                             |
|                       |                                |                             | 07/23/12 | --                            | 107.59                      | 130.46             | 0.00                     | 107.59                          | 3,724.06                           | -2.37                             |
|                       |                                |                             | 02/18/13 | --                            | 106.21                      | 130.63             | 0.00                     | 106.21                          | 3,725.44                           | 1.38                              |
|                       |                                |                             | 08/19/13 | --                            | 108.11                      | 130.88             | 0.00                     | 108.11                          | 3,723.54                           | -1.90                             |
|                       |                                |                             | 02/24/14 | --                            | 108.45                      | 130.75             | 0.00                     | 108.45                          | 3,723.20                           | -0.34                             |
|                       |                                |                             | 08/18/14 | --                            | 110.33                      | 130.71             | 0.00                     | 110.33                          | 3,721.32                           | -1.88                             |
| MW-4 <sup>(1,5)</sup> | 3,839.89                       | 3,741.76 to 3,711.76        | 06/16/09 | --                            | 106.79                      | 128.02             | 0.00                     | 106.79                          | 3,733.10                           | NA                                |
|                       |                                |                             | 01/13/10 | --                            | 107.72                      | 127.94             | 0.00                     | 107.72                          | 3,732.17                           | -0.93                             |
|                       |                                |                             | 08/11/10 | --                            | 108.19                      | 128.03             | 0.00                     | 108.19                          | 3,731.70                           | -0.47                             |
|                       |                                |                             | 09/28/10 | --                            | 108.47                      | NM                 | 0.00                     | 108.47                          | 3,731.42                           | -0.28                             |
|                       |                                |                             | 02/23/11 | --                            | 108.31                      | 127.82             | 0.00                     | 108.31                          | 3,731.58                           | 0.16                              |
|                       |                                |                             | 07/12/11 | --                            | 109.27                      | 128.02             | 0.00                     | 109.27                          | 3,730.62                           | -0.96                             |
|                       |                                |                             | 01/30/12 | --                            | 109.91                      | 128.02             | 0.00                     | 109.91                          | 3,729.98                           | -0.64                             |
|                       |                                |                             | 07/23/12 | --                            | 111.00                      | 127.82             | 0.00                     | 111.00                          | 3,728.89                           | -1.09                             |
|                       |                                |                             | 02/18/13 | --                            | 110.70                      | 127.95             | 0.00                     | 110.70                          | 3,729.19                           | 0.30                              |
|                       |                                |                             | 08/19/13 | --                            | 111.60                      | 128.01             | 0.00                     | 111.60                          | 3,728.29                           | -0.90                             |
|                       |                                |                             | 02/24/14 | --                            | 112.78                      | 127.80             | 0.00                     | 112.78                          | 3,727.11                           | -1.18                             |
|                       |                                |                             | 08/18/14 | --                            | 113.42                      | 127.63             | 0.00                     | 113.42                          | 3,726.47                           | -0.64                             |

Table 1. Water Elevation Measurements, Navajo Refining Company, Lea Refinery, Lovington, NM

| Monitor Well          | Top of Casing Elevation (feet) | Well Screen Interval (feet) | Date     | Depth to Product (feet, btoc) | Depth to Water (feet, btoc) | Total Depth (feet) | Product Thickness (feet) | Corrected Depth to Water (feet) | Corrected Water Level Elev. (feet) | Change from previous event (feet) |
|-----------------------|--------------------------------|-----------------------------|----------|-------------------------------|-----------------------------|--------------------|--------------------------|---------------------------------|------------------------------------|-----------------------------------|
| MW-5 <sup>(1,5)</sup> | 3,819.15                       | 3,731.13 to 3,701.13        | 06/16/09 | --                            | 90.84                       | NM                 | 0.00                     | 90.84                           | 3,728.31                           | NA                                |
|                       |                                |                             | 01/13/10 | --                            | 92.02                       | 118.30             | 0.00                     | 92.02                           | 3,727.13                           | -1.18                             |
|                       |                                |                             | 08/11/10 | --                            | 92.67                       | 117.93             | 0.00                     | 92.67                           | 3,726.48                           | -0.65                             |
|                       |                                |                             | 02/23/11 | --                            | 92.68                       | 118.00             | 0.00                     | 92.68                           | 3,726.47                           | -0.01                             |
|                       |                                |                             | 07/12/11 | --                            | 93.38                       | 117.97             | 0.00                     | 93.38                           | 3,725.77                           | -0.70                             |
|                       |                                |                             | 01/31/12 | --                            | 94.75                       | 117.75             | 0.00                     | 94.75                           | 3,724.40                           | -1.37                             |
|                       |                                |                             | 07/23/12 | --                            | 95.22                       | 117.92             | 0.00                     | 95.22                           | 3,723.93                           | -0.47                             |
|                       |                                |                             | 02/18/13 | --                            | 95.95                       | 118.85             | 0.00                     | 95.95                           | 3,723.20                           | -0.73                             |
|                       |                                |                             | 08/19/13 | --                            | 96.65                       | 117.90             | 0.00                     | 96.65                           | 3,722.50                           | -0.70                             |
|                       |                                |                             | 02/24/14 | --                            | 97.06                       | 117.45             | 0.00                     | 97.06                           | 3,722.09                           | -0.41                             |
|                       |                                |                             | 08/18/14 | --                            | 97.57                       | 117.22             | 0.00                     | 97.57                           | 3,721.58                           | -0.51                             |
| MW-6 <sup>(1,5)</sup> | 3,838.16                       | 3,738.17 to 3,708.17        | 06/18/09 | --                            | 106.64                      | 129.48             | 0.00                     | 106.64                          | 3,731.52                           | NA                                |
|                       |                                |                             | 07/24/09 | --                            | 106.92                      | 129.71             | 0.00                     | 106.92                          | 3,731.24                           | -0.28                             |
|                       |                                |                             | 09/24/09 | --                            | 107.44                      | 129.74             | 0.00                     | 107.44                          | 3,730.72                           | -0.52                             |
|                       |                                |                             | 10/27/09 | --                            | 107.55                      | 129.73             | 0.00                     | 107.55                          | 3,730.61                           | -0.11                             |
|                       |                                |                             | 01/13/10 | --                            | 107.64                      | 129.71             | 0.00                     | 107.64                          | 3,730.52                           | -0.09                             |
|                       |                                |                             | 02/02/10 | --                            | 107.69                      | NM                 | 0.00                     | 107.69                          | 3,730.47                           | -0.05                             |
|                       |                                |                             | 04/01/10 | --                            | 107.65                      | NM                 | 0.00                     | 107.65                          | 3,730.51                           | 0.04                              |
|                       |                                |                             | 08/11/10 | --                            | 108.00                      | 129.71             | 0.00                     | 108.00                          | 3,730.16                           | -0.35                             |
|                       |                                |                             | 02/23/11 | --                            | 108.22                      | 129.72             | 0.00                     | 108.22                          | 3,729.94                           | -0.22                             |
|                       |                                |                             | 07/12/11 | --                            | 109.09                      | 129.74             | 0.00                     | 109.09                          | 3,729.07                           | -0.87                             |
|                       |                                |                             | 02/02/12 | --                            | 109.78                      | 129.74             | 0.00                     | 109.78                          | 3,728.38                           | -0.69                             |
|                       |                                |                             | 07/23/12 | --                            | 111.00                      | 129.47             | 0.00                     | 111.00                          | 3,727.16                           | -1.22                             |
|                       |                                |                             | 02/18/13 | --                            | 110.60                      | 133.32             | 0.00                     | 110.60                          | 3,727.56                           | 0.40                              |
|                       |                                |                             | 08/19/13 | --                            | 111.70                      | 130.84             | 0.00                     | 111.70                          | 3,726.46                           | -1.10                             |
|                       |                                |                             | 02/24/14 | --                            | 112.57                      | 130.00             | 0.00                     | 112.57                          | 3,725.59                           | -0.87                             |
|                       |                                |                             | 08/18/14 | --                            | 113.50                      | 129.71             | 0.00                     | 113.50                          | 3,724.66                           | -0.93                             |
| MW-7 <sup>(1,5)</sup> | 3,838.42                       | 3,738.19 to 3,708.19        | 04/30/09 | --                            | 106.37                      | 135.54             | 0.00                     | 106.37                          | 3,732.05                           | NA                                |
|                       |                                |                             | 06/10/09 | --                            | 106.48                      | NM                 | 0.00                     | 106.48                          | 3,731.94                           | -0.11                             |
|                       |                                |                             | 06/19/09 | --                            | 106.68                      | 129.34             | 0.00                     | 106.68                          | 3,731.74                           | -0.20                             |
|                       |                                |                             | 07/02/09 | --                            | 106.75                      | 129.51             | 0.00                     | 106.75                          | 3,731.67                           | -0.07                             |
|                       |                                |                             | 07/24/09 | --                            | 106.84                      | 129.52             | 0.00                     | 106.84                          | 3,731.58                           | -0.09                             |
|                       |                                |                             | 09/24/09 | --                            | 107.33                      | 129.29             | 0.00                     | 107.33                          | 3,731.09                           | -0.49                             |
|                       |                                |                             | 10/27/09 | --                            | 107.46                      | 129.53             | 0.00                     | 107.46                          | 3,730.96                           | -0.13                             |
|                       |                                |                             | 01/13/10 | --                            | 107.60                      | 129.55             | 0.00                     | 107.60                          | 3,730.82                           | -0.14                             |
|                       |                                |                             | 02/02/10 | --                            | 107.61                      | NM                 | 0.00                     | 107.61                          | 3,730.81                           | -0.01                             |
|                       |                                |                             | 04/01/10 | --                            | 107.52                      | NM                 | 0.00                     | 107.52                          | 3,730.90                           | 0.09                              |
|                       |                                |                             | 08/11/10 | --                            | 108.10                      | 129.57             | 0.00                     | 108.10                          | 3,730.32                           | -0.58                             |
|                       |                                |                             | 02/23/11 | --                            | 108.13                      | 129.52             | 0.00                     | 108.13                          | 3,730.29                           | -0.03                             |
|                       |                                |                             | 07/12/11 | --                            | 109.01                      | 129.50             | 0.00                     | 109.01                          | 3,729.41                           | -0.88                             |
|                       |                                |                             | 02/02/12 | --                            | 109.71                      | 129.26             | 0.00                     | 109.71                          | 3,728.71                           | -0.70                             |
|                       |                                |                             | 07/23/12 | --                            | 109.88                      | 129.30             | 0.00                     | 109.88                          | 3,728.54                           | -0.17                             |
|                       |                                |                             | 02/18/13 | --                            | 110.52                      | 129.55             | 0.00                     | 110.52                          | 3,727.90                           | -0.64                             |
|                       |                                |                             | 08/19/13 | --                            | 111.57                      | 129.17             | 0.00                     | 111.57                          | 3,726.85                           | -1.05                             |
|                       |                                |                             | 02/24/14 | --                            | 112.50                      | 129.90             | 0.00                     | 112.50                          | 3,725.92                           | -0.93                             |
|                       |                                |                             | 08/18/14 | --                            | 113.40                      | 129.58             | 0.00                     | 113.40                          | 3,725.02                           | -0.90                             |

Table 1. Water Elevation Measurements, Navajo Refining Company, Lea Refinery, Lovington, NM

| Monitor Well                  | Top of Casing Elevation (feet) | Well Screen Interval (feet) | Date     | Depth to Product (feet, btoc) | Depth to Water (feet, btoc) | Total Depth (feet) | Product Thickness (feet) | Corrected Depth to Water (feet) | Corrected Water Level Elev. (feet) | Change from previous event (feet) |
|-------------------------------|--------------------------------|-----------------------------|----------|-------------------------------|-----------------------------|--------------------|--------------------------|---------------------------------|------------------------------------|-----------------------------------|
| <b>MW-8</b> <sup>(2,5)</sup>  | 3,839.98                       | 3,737.44 to 3,707.44        | 06/18/09 | --                            | 109.37                      | 132.30             | 0.00                     | 109.37                          | 3,730.61                           | NA                                |
|                               |                                |                             | 01/13/10 | --                            | 110.47                      | 132.56             | 0.00                     | 110.47                          | 3,729.51                           | -1.10                             |
|                               |                                |                             | 08/11/10 | --                            | 111.05                      | 132.34             | 0.00                     | 111.05                          | 3,728.93                           | -0.58                             |
|                               |                                |                             | 02/23/11 | --                            | 111.07                      | 132.34             | 0.00                     | 111.07                          | 3,728.91                           | -0.02                             |
|                               |                                |                             | 07/12/11 | --                            | 111.98                      | 132.36             | 0.00                     | 111.98                          | 3,728.00                           | -0.91                             |
|                               |                                |                             | 02/01/12 | --                            | 112.91                      | 132.32             | 0.00                     | 112.91                          | 3,727.07                           | -0.93                             |
|                               |                                |                             | 07/23/12 | --                            | 113.94                      | 132.33             | 0.00                     | 113.94                          | 3,726.04                           | -1.03                             |
|                               |                                |                             | 02/18/13 | --                            | 113.27                      | 132.32             | 0.00                     | 113.27                          | 3,726.71                           | 0.67                              |
|                               |                                |                             | 08/19/13 | --                            | 114.69                      | 132.39             | 0.00                     | 114.69                          | 3,725.29                           | -1.42                             |
|                               |                                |                             | 02/24/14 | --                            | 115.44                      | 132.60             | 0.00                     | 115.44                          | 3,724.54                           | -0.75                             |
|                               |                                |                             | 08/19/13 | --                            | 116.56                      | 132.16             | 0.00                     | 116.56                          | 3,723.42                           | -1.12                             |
| <b>MW-9</b> <sup>(2,5)</sup>  | 3,835.22                       | 3,736.13 to 3,706.13        | 06/16/09 | --                            | 104.58                      | 129.18             | 0.00                     | 104.58                          | 3,730.64                           | NA                                |
|                               |                                |                             | 01/13/10 | --                            | 105.61                      | 129.48             | 0.00                     | 105.61                          | 3,729.61                           | -1.03                             |
|                               |                                |                             | 08/11/10 | --                            | 106.37                      | 129.21             | 0.00                     | 106.37                          | 3,728.85                           | -0.76                             |
|                               |                                |                             | 02/23/11 | --                            | 106.28                      | 129.24             | 0.00                     | 106.28                          | 3,728.94                           | 0.09                              |
|                               |                                |                             | 07/12/11 | --                            | 107.17                      | 129.26             | 0.00                     | 107.17                          | 3,728.05                           | -0.89                             |
|                               |                                |                             | 01/31/12 | --                            | 107.38                      | 129.30             | 0.00                     | 107.38                          | 3,727.84                           | -0.21                             |
|                               |                                |                             | 07/23/12 | --                            | 109.20                      | 128.90             | 0.00                     | 109.20                          | 3,726.02                           | -1.82                             |
|                               |                                |                             | 02/18/13 | --                            | 108.47                      | 129.41             | 0.00                     | 108.47                          | 3,726.75                           | 0.73                              |
|                               |                                |                             | 08/19/13 | --                            | 109.91                      | 129.38             | 0.00                     | 109.91                          | 3,725.31                           | -1.44                             |
|                               |                                |                             | 02/24/14 | --                            | 110.63                      | 129.35             | 0.00                     | 110.63                          | 3,724.59                           | -0.72                             |
|                               |                                |                             | 08/18/14 | --                            | 111.81                      | 129.01             | 0.00                     | 111.81                          | 3,723.41                           | -1.18                             |
| <b>MW-10</b> <sup>(2,5)</sup> | 3,833.66                       | 3,735.49 to 3,705.49        | 06/16/09 | --                            | 102.57                      | 129.14             | 0.00                     | 102.57                          | 3,731.09                           | NA                                |
|                               |                                |                             | 01/13/10 | --                            | 103.51                      | 127.42             | 0.00                     | 103.51                          | 3,730.15                           | -0.94                             |
|                               |                                |                             | 08/11/10 | --                            | 104.31                      | 128.47             | 0.00                     | 104.31                          | 3,729.35                           | -0.80                             |
|                               |                                |                             | 02/23/11 | --                            | 104.26                      | 128.54             | 0.00                     | 104.26                          | 3,729.40                           | 0.05                              |
|                               |                                |                             | 07/12/11 | --                            | 105.08                      | 128.46             | 0.00                     | 105.08                          | 3,728.58                           | -0.82                             |
|                               |                                |                             | 01/31/12 | --                            | 105.73                      | 128.40             | 0.00                     | 105.73                          | 3,727.93                           | -0.65                             |
|                               |                                |                             | 07/23/12 | --                            | 107.05                      | 128.50             | 0.00                     | 107.05                          | 3,726.61                           | -1.32                             |
|                               |                                |                             | 02/18/13 | --                            | 106.63                      | 128.59             | 0.00                     | 106.63                          | 3,727.03                           | 0.42                              |
|                               |                                |                             | 08/19/13 | --                            | 107.78                      | 128.56             | 0.00                     | 107.78                          | 3,725.88                           | -1.15                             |
|                               |                                |                             | 02/24/14 | --                            | 108.53                      | 128.40             | 0.00                     | 108.53                          | 3,725.13                           | -0.75                             |
|                               |                                |                             | 08/18/14 | --                            | 109.62                      | 128.15             | 0.00                     | 109.62                          | 3,724.04                           | -1.09                             |

Table 1. Water Elevation Measurements, Navajo Refining Company, Lea Refinery, Lovington, NM

| Monitor Well           | Top of Casing Elevation (feet) | Well Screen Interval (feet) | Date     | Depth to Product (feet, btoc) | Depth to Water (feet, btoc) | Total Depth (feet) | Product Thickness (feet) | Corrected Depth to Water (feet) | Corrected Water Level Elev. (feet) | Change from previous event (feet) |
|------------------------|--------------------------------|-----------------------------|----------|-------------------------------|-----------------------------|--------------------|--------------------------|---------------------------------|------------------------------------|-----------------------------------|
| MW-11 <sup>(3,5)</sup> | 3,839.56                       | 3,741.13 to 3,721.13        | 06/20/02 | --                            | 99.93                       | NM                 | 0.00                     | 99.93                           | 3,739.63                           | NA                                |
|                        |                                |                             | 09/17/02 | --                            | 100.63                      | NM                 | 0.00                     | 100.63                          | 3,738.93                           | -0.70                             |
|                        |                                |                             | 12/19/02 | --                            | 100.50                      | NM                 | 0.00                     | 100.50                          | 3,739.06                           | 0.13                              |
|                        |                                |                             | 03/28/03 | --                            | 99.74                       | NM                 | 0.00                     | 99.74                           | 3,739.82                           | 0.76                              |
|                        |                                |                             | 06/20/03 | --                            | 100.76                      | NM                 | 0.00                     | 100.76                          | 3,738.80                           | -1.02                             |
|                        |                                |                             | 09/15/03 | --                            | 101.51                      | NM                 | 0.00                     | 101.51                          | 3,738.05                           | -0.75                             |
|                        |                                |                             | 04/30/04 | --                            | 102.31                      | 116.21             | 0.00                     | 102.31                          | 3,737.25                           | -0.80                             |
|                        |                                |                             | 02/21/05 | --                            | 103.80                      | NM                 | 0.00                     | 103.80                          | 3,735.76                           | -1.49                             |
|                        |                                |                             | 06/28/05 | --                            | 104.33                      | NM                 | 0.00                     | 104.33                          | 3,735.23                           | -0.53                             |
|                        |                                |                             | 09/30/05 | --                            | 104.60                      | NM                 | 0.00                     | 104.60                          | 3,734.96                           | -0.27                             |
|                        |                                |                             | 12/29/05 | --                            | 104.81                      | NM                 | 0.00                     | 104.81                          | 3,734.75                           | -0.21                             |
|                        |                                |                             | 04/10/06 | --                            | 105.12                      | NM                 | 0.00                     | 105.12                          | 3,734.44                           | -0.31                             |
|                        |                                |                             | 07/06/06 | --                            | 105.61                      | NM                 | 0.00                     | 105.61                          | 3,733.95                           | -0.49                             |
|                        |                                |                             | 01/26/07 | --                            | 106.63                      | NM                 | 0.00                     | 106.63                          | 3,732.93                           | -1.02                             |
|                        |                                |                             | 03/27/07 | --                            | 106.80                      | NM                 | 0.00                     | 106.80                          | 3,732.76                           | -0.17                             |
|                        |                                |                             | 07/13/07 | --                            | 106.94                      | NM                 | 0.00                     | 106.94                          | 3,732.62                           | -0.14                             |
|                        |                                |                             | 09/12/07 | --                            | 107.22                      | NM                 | 0.00                     | 107.22                          | 3,732.34                           | -0.28                             |
|                        |                                |                             | 12/31/07 | --                            | 106.74                      | NM                 | 0.00                     | 106.74                          | 3,732.82                           | 0.48                              |
|                        |                                |                             | 03/26/08 | --                            | 106.81                      | 117.51             | 0.00                     | 106.81                          | 3,732.75                           | -0.07                             |
|                        |                                |                             | 06/13/08 | --                            | 107.40                      | NM                 | 0.00                     | 107.40                          | 3,732.16                           | -0.59                             |
|                        |                                |                             | 09/24/08 | --                            | 108.76                      | NM                 | 0.00                     | 108.76                          | 3,730.80                           | -1.36                             |
|                        |                                |                             | 12/29/08 | --                            | 108.57                      | NM                 | 0.00                     | 108.57                          | 3,730.99                           | 0.19                              |
|                        |                                |                             | 03/17/09 | --                            | 107.91                      | NM                 | 0.00                     | 107.91                          | 3,731.65                           | 0.66                              |
|                        |                                |                             | 06/18/09 | --                            | 108.65                      | 117.49             | 0.00                     | 108.65                          | 3,730.91                           | -0.74                             |
|                        |                                |                             | 01/13/10 | --                            | 109.81                      | 117.77             | 0.00                     | 109.81                          | 3,729.75                           | -1.16                             |
|                        |                                |                             | 08/11/10 | --                            | 110.16                      | 117.50             | 0.00                     | 110.16                          | 3,729.40                           | -0.35                             |
|                        |                                |                             | 02/23/11 | --                            | 110.32                      | 117.70             | 0.00                     | 110.32                          | 3,729.24                           | -0.16                             |
|                        |                                |                             | 07/12/11 | --                            | 110.31                      | 117.41             | 0.00                     | 110.31                          | 3,729.25                           | 0.01                              |
|                        |                                |                             | 02/01/12 | --                            | 112.02                      | 117.37             | 0.00                     | 112.02                          | 3,727.54                           | -1.71                             |
|                        |                                |                             | 07/23/12 | --                            | 113.10                      | 117.38             | 0.00                     | 113.10                          | 3,726.46                           | -1.08                             |
|                        |                                |                             | 02/18/13 | --                            | 112.53                      | 117.75             | 0.00                     | 112.53                          | 3,727.03                           | 0.57                              |
|                        |                                |                             | 08/19/13 | --                            | 113.89                      | 117.64             | 0.00                     | 113.89                          | 3,725.67                           | -1.36                             |
|                        |                                |                             | 02/24/14 | --                            | 114.75                      | 117.90             | 0.00                     | 114.75                          | 3,724.81                           | -0.86                             |
|                        |                                |                             | 08/18/14 | --                            | 115.71                      | 117.60             | 0.00                     | 115.71                          | 3,723.85                           | -0.96                             |

Table 1. Water Elevation Measurements, Navajo Refining Company, Lea Refinery, Lovington, NM

| Monitor Well             | Top of Casing Elevation (feet) | Well Screen Interval (feet) | Date     | Depth to Product (feet, btoc) | Depth to Water (feet, btoc) | Total Depth (feet) | Product Thickness (feet) | Corrected Depth to Water (feet) | Corrected Water Level Elev. (feet) | Change from previous event (feet) |
|--------------------------|--------------------------------|-----------------------------|----------|-------------------------------|-----------------------------|--------------------|--------------------------|---------------------------------|------------------------------------|-----------------------------------|
| MW-12 <sup>(3,5,8)</sup> | 3,822.73<br>to<br>3,722.29     | 3,742.29<br>to<br>3,722.29  | 06/20/02 | --                            | 84.20                       | NM                 | 0.00                     | 84.20                           | 3,738.53                           | NA                                |
|                          |                                |                             | 12/21/02 | --                            | 85.21                       | NM                 | 0.00                     | 85.21                           | 3,737.52                           | -1.01                             |
|                          |                                |                             | 03/28/03 | --                            | 85.35                       | NM                 | 0.00                     | 85.35                           | 3,737.38                           | -0.14                             |
|                          |                                |                             | 06/20/03 | --                            | 85.51                       | NM                 | 0.00                     | 85.51                           | 3,737.22                           | -0.16                             |
|                          |                                |                             | 09/15/03 | --                            | 86.13                       | NM                 | 0.00                     | 86.13                           | 3,736.60                           | -0.62                             |
|                          |                                |                             | 11/02/03 | --                            | 86.57                       | NM                 | 0.00                     | 86.57                           | 3,736.16                           | -0.44                             |
|                          |                                |                             | 04/30/04 | --                            | 87.40                       | 100.55             | 0.00                     | 87.40                           | 3,735.33                           | -0.83                             |
|                          |                                |                             | 02/21/05 | --                            | 88.42                       | NM                 | 0.00                     | 88.42                           | 3,734.31                           | -1.02                             |
|                          |                                |                             | 06/28/05 | --                            | 88.76                       | NM                 | 0.00                     | 88.76                           | 3,733.97                           | -0.34                             |
|                          |                                |                             | 09/30/05 | --                            | 89.12                       | NM                 | 0.00                     | 89.12                           | 3,733.61                           | -0.36                             |
|                          |                                |                             | 12/29/05 | --                            | 89.31                       | NM                 | 0.00                     | 89.31                           | 3,733.42                           | -0.19                             |
|                          |                                |                             | 04/10/06 | --                            | 89.55                       | NM                 | 0.00                     | 89.55                           | 3,733.18                           | -0.24                             |
|                          |                                |                             | 07/06/06 | --                            | 90.03                       | NM                 | 0.00                     | 90.03                           | 3,732.70                           | -0.48                             |
|                          |                                |                             | 01/26/07 | --                            | 90.06                       | NM                 | 0.00                     | 90.06                           | 3,732.67                           | -0.03                             |
|                          |                                |                             | 03/27/07 | --                            | 90.10                       | NM                 | 0.00                     | 90.10                           | 3,732.63                           | -0.04                             |
|                          |                                |                             | 07/13/07 | --                            | 91.66                       | NM                 | 0.00                     | 91.66                           | 3,731.07                           | -1.56                             |
|                          |                                |                             | 09/12/07 | --                            | 92.01                       | NM                 | 0.00                     | 92.01                           | 3,730.72                           | -0.35                             |
|                          |                                |                             | 12/31/07 | --                            | 92.17                       | NM                 | 0.00                     | 92.17                           | 3,730.56                           | -0.16                             |
|                          |                                |                             | 03/26/08 | --                            | 92.39                       | 100.57             | 0.00                     | 92.39                           | 3,730.34                           | -0.22                             |
|                          |                                |                             | 06/13/08 | --                            | 92.59                       | NM                 | 0.00                     | 92.59                           | 3,730.14                           | -0.20                             |
|                          |                                |                             | 09/24/08 | --                            | 93.21                       | NM                 | 0.00                     | 93.21                           | 3,729.52                           | -0.62                             |
|                          |                                |                             | 12/29/08 | --                            | 93.59                       | NM                 | 0.00                     | 93.59                           | 3,729.14                           | -0.38                             |
|                          |                                |                             | 03/17/09 | --                            | 93.75                       | NM                 | 0.00                     | 93.75                           | 3,728.98                           | -0.16                             |
|                          |                                |                             | 06/16/09 | --                            | 93.83                       | 100.51             | 0.00                     | 93.83                           | 3,728.90                           | -0.08                             |
|                          |                                |                             | 01/13/10 | --                            | 94.78                       | 100.71             | 0.00                     | 94.78                           | 3,727.95                           | -0.95                             |
|                          |                                |                             | 08/11/10 | --                            | 95.67                       | 100.56             | 0.00                     | 95.67                           | 3,727.06                           | -0.89                             |
|                          |                                |                             | 02/23/11 | --                            | 95.85                       | 100.56             | 0.00                     | 95.85                           | 3,726.88                           | -0.18                             |
|                          |                                |                             | 07/12/11 | --                            | 96.58                       | 100.55             | 0.00                     | 96.58                           | 3,726.15                           | -0.73                             |
|                          |                                |                             | 02/01/12 | --                            | 97.57                       | 100.57             | 0.00                     | 97.57                           | 3,725.16                           | -0.99                             |
|                          |                                |                             | 07/23/12 | --                            | 98.10                       | 100.50             | 0.00                     | 98.10                           | 3,724.63                           | -0.53                             |
|                          |                                |                             | 02/18/13 | --                            | 98.95                       | 100.50             | 0.00                     | 98.95                           | 3,723.78                           | -0.85                             |
| MW-12R <sup>(8)</sup>    | 3,823.29<br>to<br>3,714.95     | 3,734.95<br>to<br>3,714.95  | 08/19/13 | --                            | 100.25                      | 108.34             | 0.00                     | 100.25                          | 3,723.04                           | NA                                |
|                          |                                |                             | 02/24/14 | --                            | 100.92                      | 108.50             | 0.00                     | 100.92                          | 3,722.37                           | NA                                |
|                          |                                |                             | 08/18/14 | --                            | 101.33                      | 108.22             | 0.00                     | 101.33                          | 3,721.96                           | NA                                |

Table 1. Water Elevation Measurements, Navajo Refining Company, Lea Refinery, Lovington, NM

| Monitor Well           | Top of Casing Elevation (feet) | Well Screen Interval (feet) | Date     | Depth to Product (feet, btoc) | Depth to Water (feet, btoc) | Total Depth (feet) | Product Thickness (feet) | Corrected Depth to Water (feet) | Corrected Water Level Elev. (feet) | Change from previous event (feet) |
|------------------------|--------------------------------|-----------------------------|----------|-------------------------------|-----------------------------|--------------------|--------------------------|---------------------------------|------------------------------------|-----------------------------------|
| MW-13 <sup>(4,5)</sup> | 3,837.06                       | 3,738.75 to 3,718.75        | 04/30/04 | --                            | 101.41                      | 119.82             | 0.00                     | 101.41                          | 3,735.65                           | NA                                |
|                        |                                |                             | 02/21/05 | --                            | 103.09                      | NM                 | 0.00                     | 103.09                          | 3,733.97                           | -1.68                             |
|                        |                                |                             | 06/28/05 | --                            | 103.48                      | NM                 | 0.00                     | 103.48                          | 3,733.58                           | -0.39                             |
|                        |                                |                             | 09/30/05 | --                            | 103.80                      | NM                 | 0.00                     | 103.80                          | 3,733.26                           | -0.32                             |
|                        |                                |                             | 12/29/05 | --                            | 104.41                      | NM                 | 0.00                     | 104.41                          | 3,732.65                           | -0.61                             |
|                        |                                |                             | 04/10/06 | --                            | 104.59                      | NM                 | 0.00                     | 104.59                          | 3,732.47                           | -0.18                             |
|                        |                                |                             | 07/06/06 | --                            | 104.94                      | NM                 | 0.00                     | 104.94                          | 3,732.12                           | -0.35                             |
|                        |                                |                             | 01/26/07 | --                            | 106.41                      | NM                 | 0.00                     | 106.41                          | 3,730.65                           | -1.47                             |
|                        |                                |                             | 03/27/07 | --                            | 106.47                      | NM                 | 0.00                     | 106.47                          | 3,730.59                           | -0.06                             |
|                        |                                |                             | 07/13/07 | --                            | 106.93                      | NM                 | 0.00                     | 106.93                          | 3,730.13                           | -0.46                             |
|                        |                                |                             | 09/12/07 | --                            | 107.19                      | NM                 | 0.00                     | 107.19                          | 3,729.87                           | -0.26                             |
|                        |                                |                             | 12/31/07 | --                            | 106.71                      | NM                 | 0.00                     | 106.71                          | 3,730.35                           | 0.48                              |
|                        |                                |                             | 03/26/08 | --                            | 107.02                      | 119.75             | 0.00                     | 107.02                          | 3,730.04                           | -0.31                             |
|                        |                                |                             | 06/13/08 | --                            | 107.19                      | NM                 | 0.00                     | 107.19                          | 3,729.87                           | -0.17                             |
|                        |                                |                             | 09/24/08 | --                            | 108.56                      | NM                 | 0.00                     | 108.56                          | 3,728.50                           | -1.37                             |
|                        |                                |                             | 12/29/08 | --                            | 108.71                      | NM                 | 0.00                     | 108.71                          | 3,728.35                           | -0.15                             |
|                        |                                |                             | 03/17/09 | --                            | 108.36                      | NM                 | 0.00                     | 108.36                          | 3,728.70                           | 0.35                              |
|                        |                                |                             | 06/16/09 | --                            | 108.58                      | 108.58             | 0.00                     | 108.58                          | 3,728.48                           | -0.22                             |
|                        |                                |                             | 01/13/10 | --                            | 109.68                      | 119.95             | 0.00                     | 109.68                          | 3,727.38                           | -1.10                             |
|                        |                                |                             | 08/11/10 | --                            | 109.72                      | 119.68             | 0.00                     | 109.72                          | 3,727.34                           | -0.04                             |
|                        |                                |                             | 02/23/11 | --                            | 110.14                      | 119.69             | 0.00                     | 110.14                          | 3,726.92                           | -0.42                             |
|                        |                                |                             | 07/12/11 | --                            | 111.17                      | 119.71             | 0.00                     | 111.17                          | 3,725.89                           | -1.03                             |
|                        |                                |                             | 02/01/12 | --                            | 111.81                      | 119.66             | 0.00                     | 111.81                          | 3,725.25                           | -0.64                             |
|                        |                                |                             | 07/23/12 | --                            | 113.11                      | 119.66             | 0.00                     | 113.11                          | 3,723.95                           | -1.30                             |
|                        |                                |                             | 02/18/13 | --                            | 111.84                      | 119.87             | 0.00                     | 111.84                          | 3,725.22                           | 1.27                              |
|                        |                                |                             | 08/19/13 | --                            | 113.81                      | 119.95             | 0.00                     | 113.81                          | 3,723.25                           | -1.97                             |
|                        |                                |                             | 02/24/14 | --                            | 114.47                      | 121.50             | 0.00                     | 114.47                          | 3,722.59                           | -0.66                             |
|                        |                                |                             | 08/18/14 | --                            | 115.89                      | 119.89             | 0.00                     | 115.89                          | 3,721.17                           | -1.42                             |
| MW-14 <sup>(4,5)</sup> | 3,823.03                       | 3,737.88 to 3,717.88        | 04/30/04 | --                            | 87.46                       | NM                 | 0.00                     | 87.46                           | 3,735.57                           | NA                                |
|                        |                                |                             | 02/21/05 | --                            | 88.48                       | NM                 | 0.00                     | 88.48                           | 3,734.55                           | -1.02                             |
|                        |                                |                             | 06/28/05 | --                            | 88.80                       | NM                 | 0.00                     | 88.80                           | 3,734.23                           | -0.32                             |
|                        |                                |                             | 09/30/05 | --                            | 89.14                       | NM                 | 0.00                     | 89.14                           | 3,733.89                           | -0.34                             |
|                        |                                |                             | 12/29/05 | --                            | 89.34                       | NM                 | 0.00                     | 89.34                           | 3,733.69                           | -0.20                             |
|                        |                                |                             | 04/10/06 | --                            | 89.63                       | NM                 | 0.00                     | 89.63                           | 3,733.40                           | -0.29                             |
|                        |                                |                             | 07/06/06 | --                            | 90.08                       | NM                 | 0.00                     | 90.08                           | 3,732.95                           | -0.45                             |
|                        |                                |                             | 01/26/07 | --                            | 91.02                       | NM                 | 0.00                     | 91.02                           | 3,732.01                           | -0.94                             |
|                        |                                |                             | 03/27/07 | --                            | 91.18                       | NM                 | 0.00                     | 91.18                           | 3,731.85                           | -0.16                             |
|                        |                                |                             | 07/13/07 | --                            | 91.68                       | NM                 | 0.00                     | 91.68                           | 3,731.35                           | -0.50                             |
|                        |                                |                             | 09/12/07 | --                            | 92.02                       | NM                 | 0.00                     | 92.02                           | 3,731.01                           | -0.34                             |
|                        |                                |                             | 12/31/07 | --                            | 92.25                       | NM                 | 0.00                     | 92.25                           | 3,730.78                           | -0.23                             |
|                        |                                |                             | 03/26/08 | --                            | 92.43                       | 105.08             | 0.00                     | 92.43                           | 3,730.60                           | -0.18                             |
|                        |                                |                             | 06/13/08 | --                            | 92.64                       | NM                 | 0.00                     | 92.64                           | 3,730.39                           | -0.21                             |
|                        |                                |                             | 12/29/08 | --                            | 93.60                       | NM                 | 0.00                     | 93.60                           | 3,729.43                           | -0.96                             |
|                        |                                |                             | 03/17/09 | --                            | 93.84                       | NM                 | 0.00                     | 93.84                           | 3,729.19                           | -0.24                             |
|                        |                                |                             | 06/16/09 | --                            | 93.92                       | 105.04             | 0.00                     | 93.92                           | 3,729.11                           | -0.08                             |
|                        |                                |                             | 01/13/10 | --                            | 94.80                       | 105.30             | 0.00                     | 94.80                           | 3,728.23                           | -0.88                             |
|                        |                                |                             | 08/11/10 | --                            | 95.67                       | 105.04             | 0.00                     | 95.67                           | 3,727.36                           | -0.87                             |
|                        |                                |                             | 02/23/11 | --                            | 95.99                       | 105.05             | 0.00                     | 95.99                           | 3,727.04                           | -0.32                             |
|                        |                                |                             | 07/12/11 | --                            | 96.59                       | 105.06             | 0.00                     | 96.59                           | 3,726.44                           | -0.60                             |
|                        |                                |                             | 01/31/12 | --                            | 97.54                       | 105.05             | 0.00                     | 97.54                           | 3,725.49                           | -0.95                             |
|                        |                                |                             | 07/23/12 | --                            | 98.20                       | 105.05             | 0.00                     | 98.20                           | 3,724.83                           | -0.66                             |
|                        |                                |                             | 02/18/13 | --                            | 99.07                       | 105.38             | 0.00                     | 99.07                           | 3,723.96                           | -0.87                             |
|                        |                                |                             | 08/19/13 | --                            | 99.82                       | 105.30             | 0.00                     | 99.82                           | 3,723.21                           | -0.75                             |
|                        |                                |                             | 02/24/14 | --                            | 100.55                      | 105.60             | 0.00                     | 100.55                          | 3,722.48                           | -0.73                             |
|                        |                                |                             | 08/18/14 | --                            | 100.94                      | 105.35             | 0.00                     | 100.94                          | 3,722.09                           | -0.39                             |



Table 1. Water Elevation Measurements, Navajo Refining Company, Lea Refinery, Lovington, NM

| Monitor Well             | Top of Casing Elevation (feet) | Well Screen Interval (feet) | Date     | Depth to Product (feet, btoc) | Depth to Water (feet, btoc) | Total Depth (feet) | Product Thickness (feet) | Corrected Depth to Water (feet) | Corrected Water Level Elev. (feet) | Change from previous event (feet) |
|--------------------------|--------------------------------|-----------------------------|----------|-------------------------------|-----------------------------|--------------------|--------------------------|---------------------------------|------------------------------------|-----------------------------------|
| MW-15 <sup>(6,7)</sup>   | 3,840.19 to 3,718.54           |                             | 08/11/10 | --                            | 106.94                      | 121.68             | 0.00                     | 106.94                          | 3,733.25                           | NA                                |
|                          |                                |                             | 02/23/11 | --                            | 107.01                      | 121.67             | 0.00                     | 107.01                          | 3,733.18                           | -0.07                             |
|                          |                                |                             | 07/12/11 | --                            | 108.32                      | 121.62             | 0.00                     | 108.32                          | 3,731.87                           | -1.31                             |
|                          |                                |                             | 01/30/12 | --                            | 108.54                      | 121.62             | 0.00                     | 108.54                          | 3,731.65                           | -0.22                             |
|                          |                                |                             | 07/23/12 | --                            | 109.77                      | 121.58             | 0.00                     | 109.77                          | 3,730.42                           | -1.23                             |
|                          |                                |                             | 02/18/13 | --                            | 109.22                      | 121.82             | 0.00                     | 109.22                          | 3,730.97                           | 0.55                              |
|                          |                                |                             | 08/19/13 | --                            | 110.34                      | 121.83             | 0.00                     | 110.34                          | 3,729.85                           | -1.12                             |
|                          |                                |                             | 02/24/14 | --                            | 111.72                      | 122.05             | 0.00                     | 111.72                          | 3,728.47                           | -1.38                             |
|                          |                                |                             | 08/18/14 | --                            | 112.16                      | 121.70             | 0.00                     | 112.16                          | 3,728.03                           | -0.44                             |
| MW-16 <sup>(6,7)</sup>   | 3,838.20 to 3,717.50           |                             | 08/11/10 | --                            | 106.18                      | 119.61             | 0.00                     | 106.18                          | 3,732.02                           | NA                                |
|                          |                                |                             | 02/23/11 | --                            | 106.34                      | 119.67             | 0.00                     | 106.34                          | 3,731.86                           | -0.16                             |
|                          |                                |                             | 07/12/11 | --                            | 107.21                      | 119.61             | 0.00                     | 107.21                          | 3,730.99                           | -0.87                             |
|                          |                                |                             | 01/30/12 | --                            | 107.93                      | 119.47             | 0.00                     | 107.93                          | 3,730.27                           | -0.72                             |
|                          |                                |                             | 07/23/12 | --                            | 108.98                      | 119.14             | 0.00                     | 108.98                          | 3,729.22                           | -1.05                             |
|                          |                                |                             | 02/18/13 | --                            | 108.69                      | 119.63             | 0.00                     | 108.69                          | 3,729.51                           | 0.29                              |
|                          |                                |                             | 08/19/13 | --                            | 109.51                      | 119.50             | 0.00                     | 109.51                          | 3,728.69                           | -0.82                             |
|                          |                                |                             | 02/24/14 | --                            | 110.73                      | 119.65             | 0.00                     | 110.73                          | 3,727.47                           | -1.22                             |
|                          |                                |                             | 08/18/14 | --                            | 111.35                      | 119.25             | 0.00                     | 111.35                          | 3,726.85                           | -0.62                             |
| MW-17 <sup>(6,7,8)</sup> | 3,831.43 to 3,715.79           |                             | 08/11/10 | --                            | 101.65                      | 115.92             | 0.00                     | 101.65                          | 3,729.78                           | NA                                |
|                          |                                |                             | 02/23/11 | --                            | 101.71                      | 115.69             | 0.00                     | 101.71                          | 3,729.72                           | -0.06                             |
|                          |                                |                             | 07/12/11 | --                            | 102.41                      | 115.55             | 0.00                     | 102.41                          | 3,729.02                           | -0.70                             |
|                          |                                |                             | 01/31/12 | WELL DAMAGED - NOT GAUGED     |                             |                    |                          |                                 |                                    |                                   |
|                          |                                |                             | 07/23/12 | WELL DAMAGED - NOT GAUGED     |                             |                    |                          |                                 |                                    |                                   |
|                          |                                |                             | 02/18/13 | WELL DAMAGED - NOT GAUGED     |                             |                    |                          |                                 |                                    |                                   |
| MW-17R <sup>(8)</sup>    | 3,831.14 to 3,711.19           |                             | 08/19/13 | --                            | 104.79                      | 119.95             | 0.00                     | 104.79                          | 3,726.35                           | NA                                |
|                          |                                |                             | 02/24/14 | --                            | 105.59                      | 119.00             | 0.00                     | 105.59                          | 3,725.55                           | NA                                |
|                          |                                |                             | 08/18/14 | --                            | 106.58                      | 117.80             | 0.00                     | 106.58                          | 3,724.56                           | NA                                |
| MW-18 <sup>(6,7)</sup>   | 3,825.05 to 3,705.52           |                             | 08/11/10 | --                            | 108.54                      | 119.36             | 0.00                     | 108.54                          | 3,716.51                           | NA                                |
|                          |                                |                             | 09/30/10 | --                            | 104.47                      | NM                 | 0.00                     | 104.47                          | 3,720.58                           | 4.07                              |
|                          |                                |                             | 02/23/11 | --                            | 100.02                      | 119.38             | 0.00                     | 100.02                          | 3,725.03                           | 4.45                              |
|                          |                                |                             | 07/12/11 | --                            | 100.73                      | 119.38             | 0.00                     | 100.73                          | 3,724.32                           | -0.71                             |
|                          |                                |                             | 01/31/12 | --                            | 100.49                      | 119.38             | 0.00                     | 100.49                          | 3,724.56                           | 0.24                              |
|                          |                                |                             | 07/23/12 | --                            | 110.18                      | 119.37             | 0.00                     | 110.18                          | 3,714.87                           | -9.69                             |
|                          |                                |                             | 02/18/13 | --                            | 102.51                      | 119.59             | 0.00                     | 102.51                          | 3,722.54                           | 7.67                              |
|                          |                                |                             | 08/19/13 | --                            | 109.79                      | 119.68             | 0.00                     | 109.79                          | 3,715.26                           | -7.28                             |
|                          |                                |                             | 02/24/14 | --                            | 105.20                      | 119.85             | 0.00                     | 105.20                          | 3,719.85                           | 4.59                              |
|                          |                                |                             | 08/18/14 | --                            | 115.51                      | 119.67             | 0.00                     | 115.51                          | 3,709.54                           | -10.31                            |
| MW-19 <sup>(6,7)</sup>   | 3,823.97 to 3,711.48           |                             | 08/11/10 | --                            | 102.35                      | 113.60             | 0.00                     | 102.35                          | 3,721.62                           | NA                                |
|                          |                                |                             | 09/30/10 | --                            | 98.70                       | NM                 | 0.00                     | 98.70                           | 3,725.27                           | 3.65                              |
|                          |                                |                             | 02/23/11 | --                            | 98.32                       | 113.57             | 0.00                     | 98.32                           | 3,725.65                           | 0.38                              |
|                          |                                |                             | 07/12/11 | --                            | 101.87                      | 113.56             | 0.00                     | 101.87                          | 3,722.10                           | -3.55                             |
|                          |                                |                             | 01/31/12 | --                            | 100.92                      | 113.54             | 0.00                     | 100.92                          | 3,723.05                           | 0.95                              |
|                          |                                |                             | 07/23/12 | --                            | 100.98                      | 113.56             | 0.00                     | 100.98                          | 3,722.99                           | -0.06                             |
|                          |                                |                             | 02/18/13 | --                            | 103.45                      | 113.76             | 0.00                     | 103.45                          | 3,720.52                           | -2.47                             |
|                          |                                |                             | 08/19/13 | --                            | 104.87                      | 113.81             | 0.00                     | 104.87                          | 3,719.10                           | -1.42                             |
|                          |                                |                             | 02/24/14 | --                            | 105.76                      | 114.00             | 0.00                     | 105.76                          | 3,718.21                           | -0.89                             |
|                          |                                |                             | 08/18/14 | --                            | 104.60                      | 113.79             | 0.00                     | 104.60                          | 3,719.37                           | 1.16                              |

Table 1. Water Elevation Measurements, Navajo Refining Company, Lea Refinery, Lovington, NM

| Monitor Well           | Top of Casing Elevation (feet) | Well Screen Interval (feet) | Date     | Depth to Product (feet, btoc) | Depth to Water (feet, btoc) | Total Depth (feet) | Product Thickness (feet) | Corrected Depth to Water (feet) | Corrected Water Level Elev. (feet) | Change from previous event (feet) |
|------------------------|--------------------------------|-----------------------------|----------|-------------------------------|-----------------------------|--------------------|--------------------------|---------------------------------|------------------------------------|-----------------------------------|
| MW-20 <sup>(6,7)</sup> | 3,824.58                       | 3,733.03 to 3,713.03        | 08/11/10 | --                            | 97.75                       | 111.82             | 0.00                     | 97.75                           | 3,726.83                           | NA                                |
|                        |                                |                             | 02/23/11 | --                            | 97.42                       | 111.82             | 0.00                     | 97.42                           | 3,727.16                           | 0.33                              |
|                        |                                |                             | 07/12/11 | --                            | 98.50                       | 111.74             | 0.00                     | 98.50                           | 3,726.08                           | -1.08                             |
|                        |                                |                             | 01/31/12 | --                            | 99.07                       | 111.74             | 0.00                     | 99.07                           | 3,725.51                           | -0.57                             |
|                        |                                |                             | 07/23/12 | --                            | 99.75                       | 111.75             | 0.00                     | 99.75                           | 3,724.83                           | -0.68                             |
|                        |                                |                             | 02/18/13 | --                            | 100.50                      | 111.78             | 0.00                     | 100.50                          | 3,724.08                           | -0.75                             |
|                        |                                |                             | 08/19/13 | --                            | 101.60                      | 111.98             | 0.00                     | 101.60                          | 3,722.98                           | -1.10                             |
|                        |                                |                             | 02/24/14 | --                            | 102.37                      | 112.15             | 0.00                     | 102.37                          | 3,722.21                           | -0.77                             |
|                        |                                |                             | 08/18/14 | --                            | 102.81                      | 111.87             | 0.00                     | 102.81                          | 3,721.77                           | -0.44                             |
| MW-21 <sup>(6,7)</sup> | 3,820.26                       | 3,731.59 to 3,711.59        | 08/11/10 | --                            | 94.06                       | 108.31             | 0.00                     | 94.06                           | 3,726.20                           | NA                                |
|                        |                                |                             | 02/23/11 | --                            | 93.84                       | 108.27             | 0.00                     | 93.84                           | 3,726.42                           | 0.22                              |
|                        |                                |                             | 07/12/11 | --                            | 94.85                       | 108.23             | 0.00                     | 94.85                           | 3,725.41                           | -1.01                             |
|                        |                                |                             | 01/31/12 | --                            | 95.72                       | 108.18             | 0.00                     | 95.72                           | 3,724.54                           | -0.87                             |
|                        |                                |                             | 07/23/12 | --                            | 96.22                       | 108.24             | 0.00                     | 96.22                           | 3,724.04                           | -0.50                             |
|                        |                                |                             | 02/18/13 | --                            | 96.92                       | 108.48             | 0.00                     | 96.92                           | 3,723.34                           | -0.70                             |
|                        |                                |                             | 08/19/13 | --                            | 98.04                       | 108.52             | 0.00                     | 98.04                           | 3,722.22                           | -1.12                             |
|                        |                                |                             | 02/24/14 | --                            | 98.65                       | 108.55             | 0.00                     | 98.65                           | 3,721.61                           | -0.61                             |
|                        |                                |                             | 08/18/14 | --                            | 99.07                       | 108.32             | 0.00                     | 99.07                           | 3,721.19                           | -0.42                             |
| MW-22 <sup>(6,7)</sup> | 3,821.82                       | 3,731.2 to 3,711.27         | 08/11/10 | --                            | 95.62                       | 110.80             | 0.00                     | 95.62                           | 3,726.20                           | NA                                |
|                        |                                |                             | 02/23/11 | --                            | 95.36                       | 110.78             | 0.00                     | 95.36                           | 3,726.46                           | 0.26                              |
|                        |                                |                             | 07/12/11 | --                            | 96.26                       | 110.74             | 0.00                     | 96.26                           | 3,725.56                           | -0.90                             |
|                        |                                |                             | 01/31/12 | --                            | 97.56                       | 110.72             | 0.00                     | 97.56                           | 3,724.26                           | -1.30                             |
|                        |                                |                             | 07/23/12 | --                            | 97.90                       | 110.70             | 0.00                     | 97.90                           | 3,723.92                           | -0.34                             |
|                        |                                |                             | 02/18/13 | --                            | 98.45                       | 110.92             | 0.00                     | 98.45                           | 3,723.37                           | -0.55                             |
|                        |                                |                             | 08/19/13 | --                            | 99.54                       | 110.85             | 0.00                     | 99.54                           | 3,722.28                           | -1.09                             |
|                        |                                |                             | 02/24/14 | --                            | 99.97                       | 111.00             | 0.00                     | 99.97                           | 3,721.85                           | -0.43                             |
|                        |                                |                             | 08/18/14 | --                            | 100.52                      | 110.26             | 0.00                     | 100.52                          | 3,721.30                           | -0.55                             |
| MW-23 <sup>(6,7)</sup> | 3,825.58                       | 3,730.91 to 3,710.91        | 08/11/10 | --                            | 100.49                      | 115.10             | 0.00                     | 100.49                          | 3,725.09                           | NA                                |
|                        |                                |                             | 02/23/11 | --                            | 99.80                       | 115.12             | 0.00                     | 99.80                           | 3,725.78                           | 0.69                              |
|                        |                                |                             | 07/12/11 | --                            | 101.29                      | 115.10             | 0.00                     | 101.29                          | 3,724.29                           | -1.49                             |
|                        |                                |                             | 02/01/12 | --                            | 102.04                      | 115.07             | 0.00                     | 102.04                          | 3,723.54                           | -0.75                             |
|                        |                                |                             | 07/23/12 | --                            | 102.39                      | 114.98             | 0.00                     | 102.39                          | 3,723.19                           | -0.35                             |
|                        |                                |                             | 02/18/13 | --                            | 102.69                      | 115.25             | 0.00                     | 102.69                          | 3,722.89                           | -0.30                             |
|                        |                                |                             | 08/19/13 | --                            | 104.23                      | 115.00             | 0.00                     | 104.23                          | 3,721.35                           | -1.54                             |
|                        |                                |                             | 02/24/14 | --                            | 104.93                      | 115.35             | 0.00                     | 104.93                          | 3,720.65                           | -0.70                             |
|                        |                                |                             | 08/18/14 | --                            | 105.36                      | 119.14             | 0.00                     | 105.36                          | 3,720.22                           | -0.43                             |
| MW-24 <sup>(6,7)</sup> | 3,830.50                       | 3,731.31 to 3,711.31        | 08/11/10 | --                            | 104.04                      | 118.14             | 0.00                     | 104.04                          | 3,726.46                           | NA                                |
|                        |                                |                             | 02/23/11 | --                            | 104.26                      | 118.09             | 0.00                     | 104.26                          | 3,726.24                           | -0.22                             |
|                        |                                |                             | 07/12/11 | --                            | 105.29                      | 118.04             | 0.00                     | 105.29                          | 3,725.21                           | -1.03                             |
|                        |                                |                             | 02/01/12 | --                            | 106.65                      | 119.10             | 0.00                     | 106.65                          | 3,723.85                           | -1.36                             |
|                        |                                |                             | 07/23/12 | --                            | 106.96                      | 118.04             | 0.00                     | 106.96                          | 3,723.54                           | -0.31                             |
|                        |                                |                             | 02/18/13 | --                            | 106.77                      | 118.35             | 0.00                     | 106.77                          | 3,723.73                           | 0.19                              |
|                        |                                |                             | 08/19/13 | --                            | 108.30                      | 118.21             | 0.00                     | 108.30                          | 3,722.20                           | -1.53                             |
|                        |                                |                             | 02/24/14 | --                            | 108.66                      | 118.45             | 0.00                     | 108.66                          | 3,721.84                           | -0.36                             |
|                        |                                |                             | 08/18/14 | --                            | 109.61                      | 118.91             | 0.00                     | 109.61                          | 3,720.89                           | -0.95                             |

Table 1. Water Elevation Measurements, Navajo Refining Company, Lea Refinery, Lovington, NM

| Monitor Well           | Top of Casing Elevation (feet) | Well Screen Interval (feet) | Date     | Depth to Product (feet, btoc) | Depth to Water (feet, btoc) | Total Depth (feet) | Product Thickness (feet) | Corrected Depth to Water (feet) | Corrected Water Level Elev. (feet) | Change from previous event (feet) |
|------------------------|--------------------------------|-----------------------------|----------|-------------------------------|-----------------------------|--------------------|--------------------------|---------------------------------|------------------------------------|-----------------------------------|
| MW-25 <sup>(6,7)</sup> | 3,830.77 to 3,709.00           |                             | 08/11/10 | --                            | 106.46                      | 121.66             | 0.00                     | 106.46                          | 3,724.31                           | NA                                |
|                        |                                |                             | 02/23/11 | --                            | 105.72                      | 121.60             | 0.00                     | 105.72                          | 3,725.05                           | 0.74                              |
|                        |                                |                             | 07/12/11 | --                            | 107.24                      | 121.49             | 0.00                     | 107.24                          | 3,723.53                           | -1.52                             |
|                        |                                |                             | 02/01/12 | --                            | 108.53                      | 121.42             | 0.00                     | 108.53                          | 3,722.24                           | -1.29                             |
|                        |                                |                             | 07/23/12 | --                            | 109.13                      | 121.47             | 0.00                     | 109.13                          | 3,721.64                           | -0.60                             |
|                        |                                |                             | 02/18/13 | --                            | 107.65                      | 121.45             | 0.00                     | 107.65                          | 3,723.12                           | 1.48                              |
|                        |                                |                             | 08/19/13 | --                            | 110.15                      | 121.49             | 0.00                     | 110.15                          | 3,720.62                           | -2.50                             |
|                        |                                |                             | 02/24/14 | --                            | 110.62                      | 121.60             | 0.00                     | 110.62                          | 3,720.15                           | -0.47                             |
|                        |                                |                             | 08/18/14 | --                            | 112.14                      | 121.46             | 0.00                     | 112.14                          | 3,718.63                           | -1.52                             |
| MW-26 <sup>(6,7)</sup> | 3,833.18 to 3,709.89           |                             | 08/11/10 | --                            | 106.22                      | 121.33             | 0.00                     | 106.22                          | 3,726.96                           | NA                                |
|                        |                                |                             | 02/23/11 | --                            | 108.44                      | 121.31             | 0.00                     | 108.44                          | 3,724.74                           | -2.22                             |
|                        |                                |                             | 07/12/11 | --                            | 109.58                      | 121.26             | 0.00                     | 109.58                          | 3,723.60                           | -1.14                             |
|                        |                                |                             | 02/01/12 | --                            | 110.38                      | 121.21             | 0.00                     | 110.38                          | 3,722.80                           | -0.80                             |
|                        |                                |                             | 07/23/12 | --                            | 111.28                      | 121.24             | 0.00                     | 111.28                          | 3,721.90                           | -0.90                             |
|                        |                                |                             | 02/18/13 | --                            | 109.00                      | 121.43             | 0.00                     | 109.00                          | 3,724.18                           | 2.28                              |
|                        |                                |                             | 08/19/13 | --                            | 111.46                      | 121.43             | 0.00                     | 111.46                          | 3,721.72                           | -2.46                             |
|                        |                                |                             | 02/24/14 | --                            | 112.28                      | 122.30             | 0.00                     | 112.28                          | 3,720.90                           | -0.82                             |
|                        |                                |                             | 08/18/14 | --                            | 113.98                      | 121.31             | 0.00                     | 113.98                          | 3,719.20                           | -1.70                             |
| MW-27 <sup>(6,7)</sup> | 3,837.27 to 3,713.03           |                             | 08/11/10 | --                            | 109.00                      | 124.07             | 0.00                     | 109.00                          | 3,728.27                           | NA                                |
|                        |                                |                             | 02/23/11 | --                            | 109.58                      | 123.96             | 0.00                     | 109.58                          | 3,727.69                           | -0.58                             |
|                        |                                |                             | 07/12/11 | --                            | 110.59                      | 124.00             | 0.00                     | 110.59                          | 3,726.68                           | -1.01                             |
|                        |                                |                             | 02/01/12 | --                            | 111.37                      | 123.97             | 0.00                     | 111.37                          | 3,725.90                           | -0.78                             |
|                        |                                |                             | 07/23/12 | --                            | 112.32                      | 123.78             | 0.00                     | 112.32                          | 3,724.95                           | -0.95                             |
|                        |                                |                             | 02/18/13 | --                            | 111.19                      | 123.89             | 0.00                     | 111.19                          | 3,726.08                           | 1.13                              |
|                        |                                |                             | 08/19/13 | --                            | 113.06                      | 123.60             | 0.00                     | 113.06                          | 3,724.21                           | -1.87                             |
|                        |                                |                             | 02/24/14 | --                            | 113.81                      | 122.60             | 0.00                     | 113.81                          | 3,723.46                           | -0.75                             |
|                        |                                |                             | 08/18/14 | --                            | 114.96                      | 123.68             | 0.00                     | 114.96                          | 3,722.31                           | -1.15                             |
| MW-28 <sup>(6,7)</sup> | 3,833.44 to 3,713.73           |                             | 08/11/10 | --                            | 103.72                      | 118.42             | 0.00                     | 103.72                          | 3,729.72                           | NA                                |
|                        |                                |                             | 02/23/11 | --                            | 104.03                      | 118.42             | 0.00                     | 104.03                          | 3,729.41                           | -0.31                             |
|                        |                                |                             | 07/12/11 | --                            | 105.07                      | 118.35             | 0.00                     | 105.07                          | 3,728.37                           | -1.04                             |
|                        |                                |                             | 01/30/12 | --                            | 105.84                      | 118.38             | 0.00                     | 105.84                          | 3,727.60                           | -0.77                             |
|                        |                                |                             | 07/23/12 | --                            | 106.65                      | 118.31             | 0.00                     | 106.65                          | 3,726.79                           | -0.81                             |
|                        |                                |                             | 02/18/13 | --                            | 106.17                      | 118.47             | 0.00                     | 106.17                          | 3,727.27                           | 0.48                              |
|                        |                                |                             | 08/19/13 | --                            | 107.53                      | 118.50             | 0.00                     | 107.53                          | 3,725.91                           | -1.36                             |
|                        |                                |                             | 02/24/14 | --                            | 108.39                      | 118.70             | 0.00                     | 108.39                          | 3,725.05                           | -0.86                             |
|                        |                                |                             | 08/18/14 | --                            | 109.29                      | 118.30             | 0.00                     | 109.29                          | 3,724.15                           | -0.90                             |
| MW-29 <sup>(6,7)</sup> | 3,835.55 to 3,714.52           |                             | 08/11/10 | --                            | 105.80                      | 120.42             | 0.00                     | 105.80                          | 3,729.75                           | NA                                |
|                        |                                |                             | 02/23/11 | --                            | 105.97                      | 120.35             | 0.00                     | 105.97                          | 3,729.58                           | -0.17                             |
|                        |                                |                             | 07/12/11 | --                            | 107.08                      | 120.33             | 0.00                     | 107.08                          | 3,728.47                           | -1.11                             |
|                        |                                |                             | 01/30/12 | --                            | 107.69                      | 120.33             | 0.00                     | 107.69                          | 3,727.86                           | -0.61                             |
|                        |                                |                             | 07/23/12 | --                            | 108.74                      | 120.27             | 0.00                     | 108.74                          | 3,726.81                           | -1.05                             |
|                        |                                |                             | 02/18/13 | --                            | 108.12                      | 120.47             | 0.00                     | 108.12                          | 3,727.43                           | 0.62                              |
|                        |                                |                             | 08/19/13 | --                            | 109.49                      | 120.68             | 0.00                     | 109.49                          | 3,726.06                           | -1.37                             |
|                        |                                |                             | 02/24/14 | --                            | 110.43                      | 120.70             | 0.00                     | 110.43                          | 3,725.12                           | -0.94                             |
|                        |                                |                             | 08/18/14 | --                            | 111.35                      | 120.30             | 0.00                     | 111.35                          | 3,724.20                           | -0.92                             |
| MW-30 <sup>(8)</sup>   | 3,839.25 to 3,712.28           |                             | 08/19/13 | --                            | 110.94                      | 126.97             | 0.00                     | 110.94                          | 3,728.31                           | NA                                |
|                        |                                |                             | 02/24/14 | --                            | 112.14                      | 126.60             | 0.00                     | 112.14                          | 3,727.11                           | NA                                |
|                        |                                |                             | 08/18/14 | --                            | 112.79                      | 126.36             | 0.00                     | 112.79                          | 3,726.46                           | NA                                |

Table 1. Water Elevation Measurements, Navajo Refining Company, Lea Refinery, Lovington, NM

| Monitor Well | Top of Casing Elevation (feet) | Well Screen Interval (feet) | Date     | Depth to Product (feet, btoc) | Depth to Water (feet, btoc) | Total Depth (feet) | Product Thickness (feet) | Corrected Depth to Water (feet) | Corrected Water Level Elev. (feet) | Change from previous event (feet) |
|--------------|--------------------------------|-----------------------------|----------|-------------------------------|-----------------------------|--------------------|--------------------------|---------------------------------|------------------------------------|-----------------------------------|
| RW-1         | 3,838.48                       | 3,738.19 to 3,708.19        | 04/30/09 | --                            | 106.45                      | 136.09             | 0.00                     | 106.45                          | 3,732.03                           | NA                                |
|              |                                |                             | 06/10/09 | --                            | 106.59                      | NM                 | 0.00                     | 106.59                          | 3,731.89                           | -0.14                             |
|              |                                |                             | 06/19/09 | --                            | 106.61                      | 129.62             | 0.00                     | 106.61                          | 3,731.87                           | -0.02                             |
|              |                                |                             | 07/02/09 | --                            | 106.82                      | 129.25             | 0.00                     | 106.82                          | 3,731.66                           | -0.21                             |
|              |                                |                             | 07/24/09 | --                            | 106.92                      | 129.31             | 0.00                     | 106.92                          | 3,731.56                           | -0.10                             |
|              |                                |                             | 09/24/09 | --                            | 107.42                      | 129.73             | 0.00                     | 107.42                          | 3,731.06                           | -0.50                             |
|              |                                |                             | 10/27/09 | --                            | 107.53                      | 129.25             | 0.00                     | 107.53                          | 3,730.95                           | -0.11                             |
|              |                                |                             | 01/13/10 | --                            | 107.67                      | 129.29             | 0.00                     | 107.67                          | 3,730.81                           | -0.14                             |
|              |                                |                             | 02/02/10 | --                            | 107.69                      | NM                 | 0.00                     | 107.69                          | 3,730.79                           | -0.02                             |
|              |                                |                             | 04/01/10 | --                            | 107.60                      | NM                 | 0.00                     | 107.60                          | 3,730.88                           | 0.09                              |
|              |                                |                             | 08/11/10 | --                            | 108.18                      | 129.29             | 0.00                     | 108.18                          | 3,730.30                           | -0.58                             |
|              |                                |                             | 02/23/11 | --                            | 108.22                      | 129.31             | 0.00                     | 108.22                          | 3,730.26                           | -0.04                             |
|              |                                |                             | 07/12/11 | --                            | 109.09                      | 129.27             | 0.00                     | 109.09                          | 3,729.39                           | -0.87                             |
|              |                                |                             | 02/02/12 | --                            | 109.81                      | 129.34             | 0.00                     | 109.81                          | 3,728.67                           | -0.72                             |
|              |                                |                             | 07/23/12 | --                            | 110.98                      | 129.07             | 0.00                     | 110.98                          | 3,727.50                           | -1.17                             |
|              |                                |                             | 02/18/13 | --                            | 110.61                      | 135.79             | 0.00                     | 110.61                          | 3,727.87                           | 0.37                              |
|              |                                |                             | 08/19/13 | --                            | 111.67                      | 129.64             | 0.00                     | 111.67                          | 3,726.81                           | -1.06                             |
|              |                                |                             | 02/24/14 | --                            | 112.59                      | 129.60             | 0.00                     | 112.59                          | 3,725.89                           | -0.92                             |
|              |                                |                             | 08/18/14 | --                            | 113.50                      | 129.28             | 0.00                     | 113.50                          | 3,724.98                           | -0.91                             |

Notes:

1. Monitoring wells MW-1 through MW-7 installed September 1995; plugged and redrilled April 2009.
2. Monitoring wells MW-8 through MW-10 installed March and April 1996; plugged and redrilled April 2009.
3. Monitoring wells MW-6R, MW-11, MW-12 installed April and May 2002; MW-6R plugged April 2009.
4. Monitoring wells MW-13 and MW-14 installed January 2004.
5. Elevation survey of new and existing wells August 7, 2009. Earlier water level information corrected to current survey.
6. Monitoring wells MW-15 through MW-29 installed May-June 2010.
7. Elevation survey of wells MW-15 through MW-29 July 13, 2010.
8. Monitoring wells MW-12R, MW-17R, and MW-30 installed June 2013; MW-12 and MW-17 plugged and abandoned June 2013.

btoc = below top of casing

-- = Not Detected

NM = Not Measured

NA = Not Applicable

**Table 2. Organic Constituent Concentrations in Groundwater**

Table 2. Organic Constituent Concentrations in Groundwater, Navajo Refining Company, Lea Refinery, Lovington, NM

|                                |             | WQCC Volatiles |                      |                |                      |                                | WQCC Semi-Volatiles             |                          |                            |                            |                      |
|--------------------------------|-------------|----------------|----------------------|----------------|----------------------|--------------------------------|---------------------------------|--------------------------|----------------------------|----------------------------|----------------------|
| Monitor Well                   | Sample Date | Benzene (mg/L) | Ethyl-benzene (mg/L) | Toluene (mg/L) | Total Xylenes (mg/L) | Total Naphthalene (8260, mg/L) | Total Naphthalenes (8270, mg/L) | Naphthalene (8270, mg/L) | 1-Methylnaphthalene (mg/L) | 2-Methylnaphthalene (mg/L) | Total Phenols (mg/L) |
| NM WQCC Groundwater Standards: |             | 0.010          | 0.75                 | 0.75           | 0.62                 | 0.03                           | 0.03                            | --                       | --                         | --                         | 0.005                |
|                                |             |                |                      |                |                      |                                |                                 |                          |                            |                            |                      |
| MW-1                           | 06/19/09    | <0.0050        | 0.012                | <0.0050        | 0.031                | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 01/19/10    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/18/10    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 03/01/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 07/20/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 02/02/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 07/27/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/27/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/21/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/24/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/21/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00010                        | <0.00010                 | <0.00010                   | <0.00010                   | <0.00020             |
|                                |             |                |                      |                |                      |                                |                                 |                          |                            |                            |                      |
| MW-2                           | 06/22/09    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 01/19/10    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 08/16/10    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 03/03/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 07/14/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 01/30/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 07/24/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/19/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | 0.00022              |
|                                | 08/20/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/25/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/21/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00010                        | <0.00010                 | <0.00010                   | <0.00010                   | <0.00020             |
|                                |             |                |                      |                |                      |                                |                                 |                          |                            |                            |                      |
| MW-3<br>(duplicate)            | 06/16/09    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 01/14/10    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 01/14/10    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 08/19/10    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 02/24/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 07/15/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 01/30/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 07/25/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/27/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/22/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/26/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/21/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00010                        | <0.00010                 | <0.00010                   | <0.00010                   | <0.00020             |
|                                |             |                |                      |                |                      |                                |                                 |                          |                            |                            |                      |
| MW-4                           | 06/16/09    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 01/13/10    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 08/19/10    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/28/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 07/15/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | 0.00044                         | 0.00044                  | --                         | <0.00020                   | <0.00020             |
|                                | 01/30/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 07/24/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/21/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/20/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/25/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/20/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00010                        | <0.00010                 | <0.00010                   | <0.00010                   | <0.00020             |

Table 2. Organic Constituent Concentrations in Groundwater, Navajo Refining Company, Lea Refinery, Lovington, NM

|                                |             | WQCC Volatiles |                      |                |                      |                                | WQCC Semi-Volatiles             |                          |                            |                            |                      |
|--------------------------------|-------------|----------------|----------------------|----------------|----------------------|--------------------------------|---------------------------------|--------------------------|----------------------------|----------------------------|----------------------|
| Monitor Well                   | Sample Date | Benzene (mg/L) | Ethyl-benzene (mg/L) | Toluene (mg/L) | Total Xylenes (mg/L) | Total Naphthalene (8260, mg/L) | Total Naphthalenes (8270, mg/L) | Naphthalene (8270, mg/L) | 1-Methylnaphthalene (mg/L) | 2-Methylnaphthalene (mg/L) | Total Phenols (mg/L) |
| NM WQCC Groundwater Standards: |             | 0.010          | 0.75                 | 0.75           | 0.62                 | 0.03                           | 0.03                            | --                       | --                         | --                         | 0.005                |
|                                |             |                |                      |                |                      |                                |                                 |                          |                            |                            |                      |
| MW-5                           | 06/16/09    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 01/18/10    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 08/20/10    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/28/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 07/19/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 01/31/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 01/31/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 07/25/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/21/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/20/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
| (duplicate)                    | 02/25/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/19/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00010                        | <0.00010                 | <0.00010                   | <0.00010                   | <0.00020             |
|                                |             |                |                      |                |                      |                                |                                 |                          |                            |                            |                      |
| MW-6 (duplicate)               | 06/18/09    | <0.0050        | <0.0050              | <0.0050        | <0.015               | 0.0075                         | --                              | --                       | --                         | --                         | --                   |
|                                | 06/18/09    | <0.0050        | <0.0050              | <0.0050        | <0.015               | 0.0074                         | --                              | --                       | --                         | --                         | --                   |
|                                | 02/02/10    | <0.0050        | 0.013                | <0.0050        | <0.015               | 0.0099                         | --                              | --                       | --                         | --                         | --                   |
|                                | 08/19/10    | <0.0050        | 0.015                | <0.0050        | <0.015               | <0.0050                        | --                              | 0.0017                   | --                         | 0.0017                     | <0.0010              |
|                                | 03/01/11    | <0.0050        | 0.018                | <0.0050        | <0.015               | 0.013                          | 0.0094                          | 0.0062                   | <0.00020                   | 0.0032                     | 0.0255               |
|                                | 07/20/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | 0.0008                          | 0.0008                   | --                         | <0.00020                   | <0.00020             |
|                                | 02/02/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 07/24/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/27/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/27/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
| (duplicate)                    | 08/21/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/27/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | 0.00116                         | 0.00052                  | 0.00064                    | <0.00020                   | <0.00020             |
|                                | 08/21/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | 0.00292                         | 0.00092                  | 0.00200                    | <0.00010                   | <0.00020             |
|                                |             |                |                      |                |                      |                                |                                 |                          |                            |                            |                      |
| MW-7                           | 06/19/09    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 02/02/10    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 08/18/10    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 03/01/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 07/20/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 02/02/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 07/27/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/27/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/21/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/27/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
| (duplicate)                    | 08/21/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00010                        | <0.00010                 | <0.00010                   | <0.00010                   | <0.00020             |
|                                |             |                |                      |                |                      |                                |                                 |                          |                            |                            |                      |
| MW-8                           | 06/18/09    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 01/18/10    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 08/18/10    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 02/25/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 07/19/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 02/01/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 07/27/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/26/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/21/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/27/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
| (duplicate)                    | 08/21/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00010                        | <0.00010                 | <0.00010                   | <0.00010                   | <0.00020             |
|                                |             |                |                      |                |                      |                                |                                 |                          |                            |                            |                      |



Table 2. Organic Constituent Concentrations in Groundwater, Navajo Refining Company, Lea Refinery, Lovington, NM

|                                |             | WQCC Volatiles                      |                      |                |                      |                                | WQCC Semi-Volatiles             |                          |                            |                            |                      |
|--------------------------------|-------------|-------------------------------------|----------------------|----------------|----------------------|--------------------------------|---------------------------------|--------------------------|----------------------------|----------------------------|----------------------|
| Monitor Well                   | Sample Date | Benzene (mg/L)                      | Ethyl-benzene (mg/L) | Toluene (mg/L) | Total Xylenes (mg/L) | Total Naphthalene (8260, mg/L) | Total Naphthalenes (8270, mg/L) | Naphthalene (8270, mg/L) | 1-Methylnaphthalene (mg/L) | 2-Methylnaphthalene (mg/L) | Total Phenols (mg/L) |
| NM WQCC Groundwater Standards: |             | 0.010                               | 0.75                 | 0.75           | 0.62                 | 0.03                           | 0.03                            | --                       | --                         | --                         | 0.005                |
| MW-9                           | 06/16/09    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 01/14/10    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 08/19/10    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 03/01/11    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 07/15/11    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 01/31/12    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 07/25/12    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/27/13    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/22/13    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/26/14    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
| 08/21/14                       | <0.0050     | <0.0050                             | <0.0050              | <0.015         | <0.0050              | <0.00010                       | <0.00010                        | <0.00010                 | <0.00010                   | <0.00020                   |                      |
| MW-10                          | 06/16/09    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 01/13/10    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 08/19/10    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | <0.00020                   | <0.00020             |
|                                | 03/03/11    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | 0.00028                         | 0.00028                  | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 07/15/11    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 01/31/12    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 07/25/12    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/27/13    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/22/13    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | 0.00032              |
|                                | 02/26/14    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
| 08/21/14                       | <0.0050     | <0.0050                             | <0.0050              | <0.015         | <0.0050              | <0.00010                       | <0.00010                        | <0.00010                 | <0.00010                   | <0.00020                   |                      |
| MW-11                          | 06/18/09    | 0.10                                | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 01/18/10    | 0.20 E                              | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 08/18/10    | 0.078                               | 0.021                | <0.0050        | <0.015               | <0.0050                        | 0.00036                         | 0.00036                  | --                         | --                         | 0.00122              |
|                                | 02/25/11    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 07/19/11    | 1.2                                 | <0.0050              | <0.0050        | <0.015               | <0.0050                        | 0.00036                         | 0.00036                  | --                         | <0.00020                   | 0.00089              |
|                                | 02/01/12    | 7.8                                 | 0.051                | <0.0050        | 0.200                | 0.096                          | 0.0435                          | 0.039                    | --                         | 0.0045                     | 0.0035               |
|                                | 07/27/12    | 0.049                               | <0.0050              | <0.0050        | <0.015               | <0.0050                        | 0.00022                         | 0.00022                  | <0.00020                   | <0.00020                   | 0.00023              |
|                                | 02/27/13    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/27/13    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/21/13    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
| (duplicate)                    | 08/21/13    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/28/14    | 0.960                               | 0.250                | <0.0050        | 0.200                | 0.0064                         | -- <sup>(1)</sup>               | -- <sup>(1)</sup>        | -- <sup>(1)</sup>          | -- <sup>(1)</sup>          | -- <sup>(1)</sup>    |
|                                | 08/20/14    | 0.110                               | 0.011                | <0.0050        | 0.030                | <0.0050                        | -- <sup>(1)</sup>               | -- <sup>(1)</sup>        | -- <sup>(1)</sup>          | -- <sup>(1)</sup>          | -- <sup>(1)</sup>    |
| MW-12                          | 06/16/09    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 01/18/10    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 08/20/10    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/25/11    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 07/19/11    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | --          | DAMAGED WELL - NO SAMPLES COLLECTED |                      |                |                      |                                |                                 |                          |                            |                            |                      |
| MW-12R                         | 08/21/13    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/27/14    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/20/14    | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00010                        | <0.00010                 | <0.00010                   | <0.00010                   | <0.00020             |

Table 2. Organic Constituent Concentrations in Groundwater, Navajo Refining Company, Lea Refinery, Lovington, NM

|                                |                      | WQCC Volatiles                      |                      |                |                      |                                | WQCC Semi-Volatiles             |                          |                            |                            |                      |
|--------------------------------|----------------------|-------------------------------------|----------------------|----------------|----------------------|--------------------------------|---------------------------------|--------------------------|----------------------------|----------------------------|----------------------|
| Monitor Well                   | Sample Date          | Benzene (mg/L)                      | Ethyl-benzene (mg/L) | Toluene (mg/L) | Total Xylenes (mg/L) | Total Naphthalene (8260, mg/L) | Total Naphthalenes (8270, mg/L) | Naphthalene (8270, mg/L) | 1-Methylnaphthalene (mg/L) | 2-Methylnaphthalene (mg/L) | Total Phenols (mg/L) |
| NM WQCC Groundwater Standards: |                      | 0.010                               | 0.75                 | 0.75           | 0.62                 | 0.03                           | 0.03                            | --                       | --                         | --                         | 0.005                |
| MW-13                          | 06/16/09             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 01/18/10             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 08/18/10             | 0.016                               | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 02/25/11             | 0.0057                              | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | 0.00091              |
|                                | 07/19/11             | 0.0063                              | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 02/01/12             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 07/26/12             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/26/13             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/21/13             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/27/14             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
| 08/19/14                       | <0.0050              | <0.0050                             | <0.0050              | <0.015         | <0.0050              | <0.00010                       | <0.00010                        | <0.00010                 | <0.00010                   | <0.00020                   |                      |
| MW-14                          | 06/16/09             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 01/18/10             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 08/20/10             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/25/11             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 07/18/11             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 01/31/12             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 07/25/12             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/22/13             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.000205                       | <0.00020                 | <0.000205                  | <0.000205                  | <0.000205            |
|                                | 08/22/13             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | -- <sup>(1)</sup>               | -- <sup>(1)</sup>        | -- <sup>(1)</sup>          | -- <sup>(1)</sup>          | -- <sup>(1)</sup>    |
|                                | 02/28/14             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | -- <sup>(1)</sup>               | -- <sup>(1)</sup>        | -- <sup>(1)</sup>          | -- <sup>(1)</sup>          | -- <sup>(1)</sup>    |
| 08/20/14                       | <0.0050              | <0.0050                             | <0.0050              | <0.015         | <0.0050              | -- <sup>(1)</sup>              | -- <sup>(1)</sup>               | -- <sup>(1)</sup>        | -- <sup>(1)</sup>          | -- <sup>(1)</sup>          |                      |
| MW-15                          | 08/20/10             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/24/11             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 07/14/11             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 01/30/12             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 07/24/12             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/19/13             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/20/13             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | (duplicate) 08/20/13 | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | (duplicate) 02/24/14 | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
| (duplicate) 08/21/14           | <0.0050              | <0.0050                             | <0.0050              | <0.015         | <0.0050              | <0.00010                       | <0.00010                        | <0.00010                 | <0.00010                   | <0.00020                   |                      |
| (duplicate) 08/21/14           | <0.0050              | <0.0050                             | <0.0050              | <0.015         | <0.0050              | <0.00010                       | <0.00010                        | <0.00010                 | <0.00010                   | <0.00020                   |                      |
| MW-16                          | 08/20/10             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/24/11             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 07/15/11             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | 0.00030                         | 0.00030                  | --                         | <0.00020                   | <0.00020             |
|                                | 07/15/11             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 01/30/12             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 07/24/12             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/20/13             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/20/13             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/25/14             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
| 08/19/14                       | <0.0050              | <0.0050                             | <0.0050              | <0.015         | <0.0050              | <0.00010                       | <0.00010                        | <0.00010                 | <0.00010                   | <0.00020                   |                      |
| MW-17                          | 08/20/10             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/24/11             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 07/18/11             | <0.0050                             | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | --                   | DAMAGED WELL - NO SAMPLES COLLECTED |                      |                |                      |                                |                                 |                          |                            |                            |                      |

Table 2. Organic Constituent Concentrations in Groundwater, Navajo Refining Company, Lea Refinery, Lovington, NM

|                                |             | WQCC Volatiles |                      |                |                      |                                | WQCC Semi-Volatiles             |                          |                            |                            |                      |          |
|--------------------------------|-------------|----------------|----------------------|----------------|----------------------|--------------------------------|---------------------------------|--------------------------|----------------------------|----------------------------|----------------------|----------|
| Monitor Well                   | Sample Date | Benzene (mg/L) | Ethyl-benzene (mg/L) | Toluene (mg/L) | Total Xylenes (mg/L) | Total Naphthalene (8260, mg/L) | Total Naphthalenes (8270, mg/L) | Naphthalene (8270, mg/L) | 1-Methylnaphthalene (mg/L) | 2-Methylnaphthalene (mg/L) | Total Phenols (mg/L) |          |
| NM WQCC Groundwater Standards: |             | 0.010          | 0.75                 | 0.75           | 0.62                 | 0.03                           | 0.03                            | --                       | --                         | --                         | 0.005                |          |
| MW-17R                         | 08/22/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |          |
|                                | 02/27/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |          |
|                                | 08/22/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00010                        | <0.00010                 | <0.00010                   | <0.00010                   | <0.00020             |          |
| MW-18                          | 08/23/10    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |          |
|                                | 02/24/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |          |
|                                | 07/18/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |          |
|                                | 01/31/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | 0.00021                         | 0.00021                  | --                         | <0.00020                   | <0.00020             |          |
|                                | 07/25/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |          |
|                                | 02/22/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |          |
|                                | 08/22/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |          |
|                                | 02/26/14    | <0.0050        | <0.0050              | <0.0050        | <0.0050              | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | 0.00056              |          |
|                                | 08/20/14    | <0.0050        | <0.0050              | <0.0050        | <0.0050              | <0.0050                        | <0.00010                        | <0.00010                 | <0.00010                   | <0.00010                   | <0.00020             |          |
| MW-19                          | 08/23/10    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |          |
|                                | 02/24/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |          |
|                                | 07/18/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |          |
|                                | 01/31/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |          |
|                                | 07/25/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |          |
|                                | 02/26/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |          |
|                                | 08/22/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |          |
|                                | (duplicate) | 08/22/13       | <0.0050              | <0.0050        | <0.0050              | <0.015                         | <0.0050                         | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             | <0.00020 |
|                                | (duplicate) | 02/26/14       | <0.0050              | <0.0050        | <0.0050              | <0.015                         | <0.0050                         | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             | <0.00020 |
|                                | (duplicate) | 08/19/14       | <0.0050              | <0.0050        | <0.0050              | <0.015                         | <0.0050                         | <0.00010                 | <0.00010                   | <0.00010                   | <0.00010             | <0.00020 |
| MW-20                          | 08/23/10    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |          |
|                                | 02/25/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |          |
|                                | 07/18/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |          |
|                                | 01/31/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |          |
|                                | 07/25/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |          |
|                                | 02/22/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |          |
|                                | 08/20/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |          |
|                                | 02/26/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |          |
|                                | 08/19/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00010                        | <0.00010                 | <0.00010                   | <0.00010                   | <0.00020             |          |
| MW-21                          | 08/23/10    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |          |
|                                | (duplicate) | 02/28/11       | <0.0050              | <0.0050        | <0.0050              | <0.015                         | <0.0050                         | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             | <0.00020 |
|                                |             | 02/28/11       | <0.0050              | <0.0050        | <0.0050              | <0.015                         | <0.0050                         | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             | <0.00020 |
|                                |             | 07/19/11       | <0.0050              | <0.0050        | <0.0050              | <0.015                         | <0.0050                         | <0.00020                 | <0.00020                   | --                         | <0.00020             | <0.00020 |
|                                |             | 01/31/12       | <0.0050              | <0.0050        | <0.0050              | <0.015                         | <0.0050                         | <0.00020                 | <0.00020                   | --                         | <0.00020             | <0.00020 |
|                                |             | 07/26/12       | <0.0050              | <0.0050        | <0.0050              | <0.015                         | <0.0050                         | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             | <0.00020 |
|                                |             | 02/22/13       | <0.0050              | <0.0050        | <0.0050              | <0.015                         | <0.0050                         | 0.00031                  | <0.00020                   | <0.00020                   | 0.00031              | <0.00020 |
|                                |             | 08/20/13       | <0.0050              | <0.0050        | <0.0050              | <0.015                         | <0.0050                         | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             | <0.00020 |
|                                |             | 02/25/14       | <0.0050              | <0.0050        | <0.0050              | <0.015                         | <0.0050                         | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             | <0.00020 |
|                                | 08/19/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00010                        | <0.00010                 | <0.00010                   | <0.00010                   | <0.00020             |          |



Table 2. Organic Constituent Concentrations in Groundwater, Navajo Refining Company, Lea Refinery, Lovington, NM

|                                |             | WQCC Volatiles |                      |                |                      |                                | WQCC Semi-Volatiles             |                          |                            |                            |                      |
|--------------------------------|-------------|----------------|----------------------|----------------|----------------------|--------------------------------|---------------------------------|--------------------------|----------------------------|----------------------------|----------------------|
| Monitor Well                   | Sample Date | Benzene (mg/L) | Ethyl-benzene (mg/L) | Toluene (mg/L) | Total Xylenes (mg/L) | Total Naphthalene (8260, mg/L) | Total Naphthalenes (8270, mg/L) | Naphthalene (8270, mg/L) | 1-Methylnaphthalene (mg/L) | 2-Methylnaphthalene (mg/L) | Total Phenols (mg/L) |
| NM WQCC Groundwater Standards: |             | 0.010          | 0.75                 | 0.75           | 0.62                 | 0.03                           | 0.03                            | --                       | --                         | --                         | 0.005                |
|                                |             |                |                      |                |                      |                                |                                 |                          |                            |                            |                      |
| MW-27                          | 08/18/10    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 02/25/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | 0.00099              |
|                                | 07/20/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | 0.00034              |
|                                | 02/01/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 07/26/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/26/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/20/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/27/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
| 08/21/14                       | <0.0050     | <0.0050        | <0.0050              | <0.015         | <0.0050              | <0.00010                       | <0.00010                        | <0.00010                 | <0.00010                   | <0.00020                   |                      |
|                                |             |                |                      |                |                      |                                |                                 |                          |                            |                            |                      |
| MW-28                          | 08/28/10    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 02/23/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 07/14/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 01/30/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 07/24/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/19/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | 0.00086              |
|                                | 08/20/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | 0.00022              |
|                                | 02/24/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
| 08/19/14                       | <0.0050     | <0.0050        | <0.0050              | <0.015         | <0.0050              | <0.00010                       | <0.00010                        | <0.00010                 | <0.00010                   | <0.00020                   |                      |
|                                |             |                |                      |                |                      |                                |                                 |                          |                            |                            |                      |
| MW-29<br>(duplicate)           | 08/24/10    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 08/24/10    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 02/28/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 07/14/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 01/30/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | 0.00050                         | 0.00050                  | --                         | <0.00020                   | <0.00020             |
|                                | 07/24/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/26/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/20/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/27/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/27/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
| 08/20/14                       | <0.0050     | <0.0050        | <0.0050              | <0.015         | <0.0050              | <0.00010                       | <0.00010                        | <0.00010                 | <0.00010                   | <0.00020                   |                      |
|                                |             |                |                      |                |                      |                                |                                 |                          |                            |                            |                      |
| MW-30                          | 06/21/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/20/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/27/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/22/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00010                        | <0.00010                 | <0.00010                   | <0.00010                   | <0.00020             |
|                                |             |                |                      |                |                      |                                |                                 |                          |                            |                            |                      |
| RW-1                           | 06/19/09    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 02/02/10    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 08/19/10    | <0.0050        | <0.0050              | <0.0050        | 0.015                | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 03/01/11    | <0.0050        | <0.0050              | <0.0050        | 0.0054               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 07/20/11    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 02/02/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 07/27/12    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/27/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/21/13    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/27/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/21/14    | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00010                        | <0.00010                 | <0.00010                   | <0.00010                   | <0.00020             |

Table 2. Organic Constituent Concentrations in Groundwater, Navajo Refining Company, Lea Refinery, Lovington, NM

|                                |                      | WQCC Volatiles |                      |                |                      |                                | WQCC Semi-Volatiles             |                          |                            |                            |                      |
|--------------------------------|----------------------|----------------|----------------------|----------------|----------------------|--------------------------------|---------------------------------|--------------------------|----------------------------|----------------------------|----------------------|
| Monitor Well                   | Sample Date          | Benzene (mg/L) | Ethyl-benzene (mg/L) | Toluene (mg/L) | Total Xylenes (mg/L) | Total Naphthalene (8260, mg/L) | Total Naphthalenes (8270, mg/L) | Naphthalene (8270, mg/L) | 1-Methylnaphthalene (mg/L) | 2-Methylnaphthalene (mg/L) | Total Phenols (mg/L) |
| NM WQCC Groundwater Standards: |                      | 0.010          | 0.75                 | 0.75           | 0.62                 | 0.03                           | 0.03                            | --                       | --                         | --                         | 0.005                |
| North Well                     | 06/18/09             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 01/14/10             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 08/24/10             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 03/03/11             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 07/20/11             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 02/02/12             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 07/30/12             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/19/13             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/11/14             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00010                        | <0.00010                 | <0.00010                   | <0.00010                   | <0.00020             |
| 12/17/14                       | <0.0010              | <0.0010        | <0.0010              | <0.0015        | <0.0020              | <0.00050                       | <0.00050                        | <0.00050                 | <0.00050                   | <0.00050                   |                      |
| South Well                     | 06/22/09             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 01/14/10             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 08/24/10             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 03/03/11             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 07/20/11             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 02/02/12             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 07/30/12             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/19/13             | 0.0052         | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 02/28/14             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/22/14             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00010                        | <0.00010                 | <0.00010                   | <0.00010                   | <0.00020             |
|                                | (duplicate) 08/22/14 | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00010                        | <0.00010                 | <0.00010                   | <0.00010                   | <0.00020             |
|                                | 12/17/14             | 0.0023         | <0.0010              | <0.0010        | <0.0015              | <0.0020                        | <0.00050                        | <0.00050                 | <0.00050                   | <0.00050                   | <0.00050             |
| (duplicate) 12/17/14           | 0.0023               | <0.0010        | <0.0010              | <0.0015        | <0.0020              | <0.00050                       | <0.00050                        | <0.00050                 | <0.00050                   | <0.00050                   |                      |
| East Well                      | 06/18/09             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 01/14/10             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 08/25/10             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | --                              | --                       | --                         | --                         | --                   |
|                                | 03/03/11             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 07/20/11             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 02/02/12             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | --                         | <0.00020                   | <0.00020             |
|                                | 07/30/12             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/27/12             | <0.0050        | <0.0050              | <0.0050        | <0.015               | --                             | <0.00020                        | <0.00020                 | <0.00020                   | --                         | <0.00020             |
|                                | 09/26/12             | <0.0050        | <0.0050              | <0.0050        | <0.015               | --                             | <0.00020                        | <0.00020                 | <0.00020                   | --                         | <0.00020             |
|                                | 10/22/12             | <0.0050        | <0.0050              | <0.0050        | <0.015               | --                             | <0.00020                        | <0.00020                 | <0.00020                   | --                         | <0.00020             |
|                                | 12/27/12             | <0.0050        | <0.0050              | <0.0050        | <0.015               | --                             | <0.00020                        | <0.00020                 | <0.00020                   | --                         | <0.00020             |
|                                | 02/28/14             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00020                        | <0.00020                 | <0.00020                   | <0.00020                   | <0.00020             |
|                                | 08/22/14             | <0.0050        | <0.0050              | <0.0050        | <0.015               | <0.0050                        | <0.00010                        | <0.00010                 | <0.00010                   | <0.00010                   | <0.00020             |
|                                | 12/17/14             | <0.0010        | <0.0010              | <0.0010        | <0.0015              | <0.0020                        | <0.00050                        | <0.00050                 | <0.00050                   | <0.00050                   | <0.00050             |

**Notes:**

Shading indicates detected result exceeded the New Mexico Water Quality Control Commission (WQCC) Human Health Standard

mg/L = milligrams per liter

&lt; = Not reported above laboratory reporting limit

-- = Not Analyzed

<sup>(1)</sup> Not analyzed due to insufficient water volume

June 2009 to August 2014 analyses performed by ALS Laboratory Group, Houston, Texas

December 2014 analyses performed by Hall Environmental Analysis Laboratory in Albuquerque, New Mexico

**Table 3. Inorganic Constituent Concentrations in Groundwater**



Table 3. Inorganic Constituent Concentrations in Groundwater, Navajo Refining Company, Lea Refinery, Lovington, NM

| Monitor Well        | Sample Date | Chloride (mg/L) | Fluoride (mg/L) | Nitrate-Nitrite (as N, mg/L) | Sulfate (mg/L) | Total Dissolved Solids (mg/L) | Aluminum (mg/L) | Arsenic (mg/L) | Barium (mg/L) | Boron (mg/L) | Cadmium (mg/L) | Chromium (mg/L) | Cobalt (mg/L) | Copper (mg/L) | Iron (mg/L) | Lead (mg/L) | Manganese (mg/L) | Total Mercury (mg/L) | Molybdenum (mg/L) | Nickel (mg/L) | Selenium (mg/L) | Silver (mg/L) | Uranium (mg/L) | Zinc (mg/L) |
|---------------------|-------------|-----------------|-----------------|------------------------------|----------------|-------------------------------|-----------------|----------------|---------------|--------------|----------------|-----------------|---------------|---------------|-------------|-------------|------------------|----------------------|-------------------|---------------|-----------------|---------------|----------------|-------------|
| NM WQCC             |             | 250             | 1.6             | 10                           | 600            | 1,000                         | 5.0             | 0.1            | 1.0           | 0.75         | 0.01           | 0.05            | 0.05          | 1.0           | 1.0         | 0.05        | 0.20             | 0.002                | 1.0               | 0.2           | 0.05            | 0.05          | 0.03           | 10.0        |
| MW-1                | 06/19/09    | 131             | 0.827           | 3.75                         | 123            | 694                           | <0.0100         | 0.00914        | 0.147         | 0.175        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.974            | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | --             | 0.0124      |
|                     | 01/19/10    | 266             | 0.249           | 5.84                         | 145            | 1,240                         | 0.0202          | 0.00634        | 0.164         | 0.236        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 2.72             | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | 0.00615        | 0.00989     |
|                     | 08/18/10    | 126             | 0.623           | 2.59                         | 111            | 694                           | <0.0100         | 0.00841        | 0.117         | 0.182        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 1.62             | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.00538     |
|                     | 03/01/11    | 100             | 0.502           | 1.84                         | 83.4           | 580                           | <0.0100         | 0.00821        | 0.0984        | 0.189        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 1.62             | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.00689     |
|                     | 07/20/11    | 34.7            | 0.623           | 1.14                         | 73.9           | 492                           | <0.0100         | 0.00808        | 0.0903        | 0.168        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.485            | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.00832     |
|                     | 02/02/12    | 29.9            | 0.773           | <1.00                        | 65.4           | 392                           | <0.0100         | 0.00782        | 0.0843        | 0.164        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.780            | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.00766     |
|                     | 07/27/12    | 27.3            | 0.944           | <2.00                        | 59.5           | 358                           | 0.0249          | 0.00870        | 0.0917        | 0.193        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 1.05             | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.00759     |
|                     | 02/27/13    | 30.0            | 0.872           | <2.00                        | 67.2           | 400                           | <0.0100         | 0.00857        | 0.0974        | 0.184        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.662            | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0107      |
|                     | 08/21/13    | 33.2            | 1.03            | <1.00                        | 70.5           | 406                           | 0.0158          | 0.00589        | 0.102         | 0.187        | <0.00200       | 0.016           | <0.00500      | <0.00500      | <0.200      | <0.00500    | 1.32             | <0.000200            | <0.00500          | 0.0164        | <0.00500        | <0.00500      | <0.00500       | 0.00641     |
|                     | 02/27/14    | 30.0            | 0.758           | 0.710                        | 63.2           | 418                           | <0.0100         | 0.0075         | 0.111         | 0.169        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.690            | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.00874     |
| 08/21/14            | 26.6        | 1.10            | 1.23            | 68.0                         | 395            | 0.0135                        | 0.0102          | 0.138          | 0.109         | <0.00200     | <0.00500       | <0.00500        | <0.00500      | <0.200        | <0.00500    | 0.0172      | <0.000200        | <0.00500             | <0.00500          | <0.00500      | <0.00500        | <0.00500      | 0.0242         |             |
| MW-2                | 06/22/09    | 252             | 0.765           | 2.69                         | 66.8           | 988                           | 0.0657          | 0.0386         | 0.0803        | 0.190        | <0.00200       | <0.00500        | <0.00500      | 0.00621       | <0.200      | <0.00500    | 0.00583          | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | --             | 0.110       |
|                     | 01/19/10    | 246             | 0.672           | 3.39                         | 55.1           | 966                           | <0.0100         | <0.00500       | 0.00500       | 0.191        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.00538          | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0166      |
|                     | 08/16/10    | 276             | 0.824           | 3.23                         | 55.9           | 1,180                         | 0.1367          | <0.00500       | 0.193         | 0.155        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0204      |
|                     | 03/03/11    | 221             | 0.763           | 3.49                         | 57.6           | 1,010                         | <0.0100         | <0.00500       | 0.176         | 0.171        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0117      |
|                     | 07/14/11    | 190             | 0.647           | 2.98                         | 58.4           | 966                           | <0.0100         | <0.00500       | 0.160         | 0.192        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0230      |
|                     | 01/30/12    | 214             | 0.784           | 3.43                         | 75.1           | 1,230                         | <0.0100         | <0.00500       | 0.130         | 0.164        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0255      |
|                     | 07/24/12    | 201             | 0.898           | 3.24                         | 76.3           | 908                           | <0.0100         | <0.00500       | 0.140         | 0.233        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0191      |
|                     | 02/19/13    | 213             | 0.81            | 3.9                          | 86.6           | 834                           | 0.0102          | <0.00500       | 0.141         | 0.197        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0436      |
|                     | 08/20/13    | 178             | 0.92            | 5.33                         | 88.9           | 682                           | 0.0346          | <0.00500       | 0.118         | 0.216        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.00721     |
|                     | 02/25/14    | 139             | 0.693           | 5.25                         | 79.4           | 616                           | 0.0133          | <0.00500       | 0.125         | 0.203        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.013       |
| 08/21/14            | 122         | 0.812           | 6.17            | 82.3                         | 588            | 0.0143                        | <0.00500        | 0.112          | 0.147         | <0.00200     | <0.00500       | <0.00500        | <0.00500      | <0.200        | <0.00500    | <0.00500    | <0.000200        | <0.00500             | <0.00500          | <0.00500      | <0.00500        | <0.00500      | 0.0214         |             |
| MW-3<br>(duplicate) | 06/16/09    | 29.1            | 3.38            | 2.19                         | 64.6           | 504                           | 0.308           | 0.00815        | 0.115         | 0.160        | <0.00200       | 0.00709         | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | 0.0151            | <0.00500      | <0.00500        | <0.00500      | --             | <0.0100     |
|                     | 01/14/10    | 49.9            | 3.18            | 2.11                         | 76.5           | 540                           | 0.144           | 0.00703        | 0.119         | 0.148        | <0.00200       | 0.00977         | <0.00500      | 0.121         | <0.200      | <0.00500    | 0.00597          | <0.000200            | 0.0200            | 0.00842       | <0.00500        | <0.00500      | 0.000625       | 0.0195      |
|                     | 01/14/10    | 49.8            | 3.18            | 2.11                         | 75.0           | 552                           | 0.142           | 0.00798        | 0.125         | 0.167        | <0.00200       | 0.01050         | <0.00500      | 0.148         | <0.200      | <0.00500    | 0.00699          | <0.000200            | 0.0216            | 0.0096        | <0.00500        | <0.00500      | 0.000721       | 0.0230      |
|                     | 08/19/10    | 72.7            | 2.99            | 1.52                         | 77.7           | 518                           | 0.0767          | 0.00935        | 0.127         | 0.151        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | 0.00790           | <0.00500      | <0.00500        | <0.00500      | <0.00500       | <0.00500    |
|                     | 02/24/11    | 88.2            | 2.58            | 3.02                         | 80.5           | 566                           | <0.0100         | 0.00892        | 0.124         | 0.178        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0524      |
|                     |             |                 |                 |                              |                |                               |                 |                |               |              |                |                 |               |               |             |             |                  |                      |                   |               |                 |               |                |             |

Table 3. Inorganic Constituent Concentrations in Groundwater, Navajo Refining Company, Lea Refinery, Lovington, NM

| Monitor Well            | Sample Date | Chloride (mg/L) | Fluoride (mg/L) | Nitrate-Nitrite (as N, mg/L) | Sulfate (mg/L) | Total Dissolved Solids (mg/L) | Aluminum (mg/L) | Arsenic (mg/L) | Barium (mg/L) | Boron (mg/L) | Cadmium (mg/L) | Chromium (mg/L) | Cobalt (mg/L) | Copper (mg/L) | Iron (mg/L) | Lead (mg/L) | Manganese (mg/L) | Total Mercury (mg/L) | Molybdenum (mg/L) | Nickel (mg/L) | Selenium (mg/L) | Silver (mg/L) | Uranium (mg/L) | Zinc (mg/L) |
|-------------------------|-------------|-----------------|-----------------|------------------------------|----------------|-------------------------------|-----------------|----------------|---------------|--------------|----------------|-----------------|---------------|---------------|-------------|-------------|------------------|----------------------|-------------------|---------------|-----------------|---------------|----------------|-------------|
| NM WQCC                 |             | 250             | 1.6             | 10                           | 600            | 1,000                         | 5.0             | 0.1            | 1.0           | 0.75         | 0.01           | 0.05            | 0.05          | 1.0           | 1.0         | 0.05        | 0.20             | 0.002                | 1.0               | 0.2           | 0.05            | 0.05          | 0.03           | 10.0        |
| MW-5<br><br>(duplicate) | 06/16/09    | 186             | 1.39            | 3.31                         | 131            | 952                           | 0.796           | 0.0233         | 0.0639        | 0.116        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | 0.399       | <0.00500    | 0.0067           | <0.000200            | 0.0103            | <0.00500      | <0.00500        | <0.00500      | - -            | <0.0100     |
|                         | 01/18/10    | 26.4            | 0.781           | 4.91                         | 80.6           | 508                           | <0.0100         | <0.00500       | 0.0966        | 0.135        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       |             |
|                         | 08/20/10    | 18.5            | 1.13            | 3.43                         | 77.7           | 440                           | 0.0814          | <0.00500       | 0.0967        | 0.0986       | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       |             |
|                         | 02/28/11    | 29.8            | 1.03            | 2.91                         | 70.5           | 570                           | 0.123           | <0.00500       | 0.100         | 0.085        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0142           | <0.000200            | <0.00500          | 0.0112        | <0.00500        | <0.00500      | <0.00500       | 0.0368      |
|                         | 07/19/11    | 20.9            | 0.858           | 2.72                         | 59.0           | 524                           | <0.0100         | <0.00500       | 0.0968        | 0.087        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0309      |
|                         | 01/31/12    | 26.9            | 1.04            | 2.49                         | 61.2           | 504                           | <0.0100         | <0.00500       | 0.0972        | 0.0557       | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.00948     |
|                         | 01/31/12    | 27.1            | 1.05            | 2.54                         | 62.0           | 436                           | <0.0100         | <0.00500       | 0.0947        | 0.0728       | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0119      |
|                         | 07/25/12    | 15.9            | 1.10            | 2.22                         | 50.1           | 434                           | 0.0205          | <0.00500       | 0.0931        | 0.134        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0562      |
|                         | 02/21/13    | 10.9            | 1.04            | 2.01                         | 40.8           | 412                           | 0.0487          | <0.00500       | 0.104         | 0.0997       | <0.00200       | <0.00500        | <0.00500      | 0.0434        | <0.200      | <0.00500    | 0.0158           | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | 0.00582        | 0.0289      |
|                         | 08/20/13    | 13.9            | 1.16            | 2.05                         | 44.2           | 448                           | < 0.0100        | <0.00500       | 0.105         | 0.100        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | 0.00507        | 0.0208      |
| 02/25/14                | 11.8        | 0.877           | 2.52            | 48.4                         | 436            | < 0.0100                      | <0.00500        | 0.116          | 0.0893        | <0.00200     | <0.00500       | <0.00500        | <0.00500      | <0.200        | <0.00500    | <0.00500    | <0.000200        | <0.00500             | <0.00500          | <0.00500      | <0.00500        | <0.00500      | 0.0114         |             |
| 08/19/14                | 8.71        | 1.16            | 1.68            | 44.6                         | 478            | 0.148                         | <0.00500        | 0.123          | <0.0200       | <0.00200     | 0.00744        | <0.00500        | <0.00500      | <0.200        | <0.00500    | 0.00532     | <0.000200        | <0.00500             | <0.00500          | <0.00500      | <0.00500        | 0.00535       | 0.00626        |             |
| MW-6<br>(duplicate)     | 06/18/09    | 188             | 0.113           | 0.678                        | 101            | 844                           | <0.0100         | 0.0201         | 0.186         | 0.175        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | 0.418       | <0.00500    | 2.86             | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | - -            | 0.00996     |
|                         | 06/18/09    | 168             | <0.100          | 0.682                        | 90.4           | 812                           | <0.0100         | 0.0221         | 0.200         | 0.192        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | 0.219       | <0.00500    | 2.76             | <0.000200            | <0.00500          | 0.00653       | <0.00500        | <0.00500      | - -            | 0.0141      |
|                         | 02/02/10    | 334             | <0.100          | 0.822                        | 90.2           | 1,400                         | <0.0200         | 0.0250         | 0.499         | 0.234        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | 2.08        | <0.00500    | 4.51             | <0.000200            | <0.00500          | 0.00634       | <0.00500        | <0.00500      | 0.0113         | <0.00500    |
|                         | 08/19/10    | 285             | <0.100          | <1.00                        | 111            | 1,350                         | 0.0152          | 0.0456         | 0.376         | 0.244        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | 1.86        | <0.00500    | 6.61             | <0.000200            | <0.00500          | 0.00766       | <0.00500        | <0.00500      | 0.00785        | <0.00500    |
|                         | 03/01/11    | 282             | <0.100          | 0.750                        | 80.7           | 1,340                         | <0.0100         | 0.0390         | 0.404         | 0.271        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | 0.711       | <0.00500    | 5.58             | <0.000200            | <0.00500          | 0.00896       | <0.00500        | <0.00500      | 0.00659        | <0.00500    |
|                         | 07/20/11    | 174             | <0.500          | <0.500                       | 114            | 970                           | <0.0100         | 0.0336         | 0.220         | 0.223        | <0.00200       | <0.00972        | <0.00500      | <0.00500      | 1.57        | <0.00500    | 4.51             | <0.000200            | <0.00500          | 0.00576       | <0.00500        | <0.00500      | <0.00500       | 0.0176      |
|                         | 02/02/12    | 58.4            | 0.313           | <1.00                        | 88.0           | 398                           | <0.0100         | <0.00500       | 0.0827        | 0.190        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | 0.488       | <0.00500    | 1.25             | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | 0.00599        | 0.00858     |
|                         | 07/24/12    | 77.7            | 0.217           | <2.00                        | 80.1           | 690                           | <0.0100         | 0.0128         | 0.143         | 0.265        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | 1.28        | <0.00500    | 2.53             | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | 0.0102         | 0.0194      |
|                         | 02/27/13    | 65.4            | 0.368           | <2.00                        | 77.1           | 542                           | <0.0100         | 0.0126         | 0.154         | 0.214        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | 1.31        | <0.00500    | 1.97             | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | 0.00789        | 0.0123      |
|                         | 02/27/13    | 65.7            | 0.370           | <2.00                        | 77.6           | 556                           | <0.0100         | 0.0124         | 0.158         | 0.216        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | 1.33        | <0.00500    | 2.02             | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | 0.00833        | 0.0106      |
| 08/21/13                | 43.3        | 0.441           | <0.200          | 76.6                         | 502            | 0.0244                        | <0.00500        | 0.129          | 0.198         | <0.00200     | <0.00500       | <0.00500        | <0.00500      | <0.200        | <0.00500    | 1.68        | <0.000200        | <0.00500             | <0.00500          | <0.00500      | <0.00500        | 0.00606       | <0.00500       |             |
| 02/27/14                | 124         | 0.309           | <0.500          | 51.0                         | 814            | <0.0100                       | 0.0458          | 0.263          | 0.220         | <0.00200     | <0.00500       | <0.00500        | <0.00500      | 3.42          | <0.00500    | 2.71        | <0.000200        | <0.00500             | <0.00500          | <0.00500      | <0.00500        | 0.00882       | 0.00622        |             |
| 08/21/14                | 132         | 0.230           | <1.00           | 34.4                         | 832            | 0.0330                        | 0.0185          | 0.363          | 0.167         | <0.00200     | <0.00500       | <0.00500        | <0.00500      | 0.268         | <0.00500    | 3.06        | <0.000200        | <0.00500             | 0.00651           | <0.00500      | <0.00500        | 0.00744       | 0.0151         |             |
| MW-7                    | 06/19/09    | 30.6            | 1.12            | 1.66                         | 67.2           | 384                           | <0.0100         | 0.00923        | 0.169         | 0.161        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.127            | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | - -            | 0.0137      |
|                         | 02/02/10    | 28.0            | 0.854           | 1.72                         | 62.2           | 350                           | <0.0200         | 0.00869        | 0.199         | 0.169        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.125            | <0.000200            | <0.00500          | <0.00500      | <0.             |               |                |             |

Table 3. Inorganic Constituent Concentrations in Groundwater, Navajo Refining Company, Lea Refinery, Lovington, NM

| Monitor Well | Sample Date | Chloride (mg/L) | Fluoride (mg/L) | Nitrate-Nitrite (as N, mg/L) | Sulfate (mg/L) | Total Dissolved Solids (mg/L) | Aluminum (mg/L) | Arsenic (mg/L) | Barium (mg/L) | Boron (mg/L) | Cadmium (mg/L) | Chromium (mg/L) | Cobalt (mg/L) | Copper (mg/L) | Iron (mg/L) | Lead (mg/L) | Manganese (mg/L) | Total Mercury (mg/L) | Molybdenum (mg/L) | Nickel (mg/L) | Selenium (mg/L) | Silver (mg/L) | Uranium (mg/L) | Zinc (mg/L) |
|--------------|-------------|-----------------|-----------------|------------------------------|----------------|-------------------------------|-----------------|----------------|---------------|--------------|----------------|-----------------|---------------|---------------|-------------|-------------|------------------|----------------------|-------------------|---------------|-----------------|---------------|----------------|-------------|
| NM WQCC      |             | 250             | 1.6             | 10                           | 600            | 1,000                         | 5.0             | 0.1            | 1.0           | 0.75         | 0.01           | 0.05            | 0.05          | 1.0           | 1.0         | 0.05        | 0.20             | 0.002                | 1.0               | 0.2           | 0.05            | 0.05          | 0.03           | 10.0        |
| MW-9         | 06/16/09    | 23.0            | 1.69            | 0.748                        | 73.2           | 380                           | 0.0468          | 0.0373         | 0.0911        | 0.122        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | --             | <0.0100     |
|              | 01/14/10    | 23.9            | 1.78            | 1.72                         | 74.4           | 450                           | 0.0164          | 0.0351         | 0.0676        | 0.139        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | 0.000656       | <0.00500    |
|              | 08/19/10    | 21.8            | 1.64            | 1.32                         | 75.2           | 412                           | 0.115           | 0.0358         | 0.0649        | 0.121        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.00961          | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | <0.00500    |
|              | 03/01/11    | 24.1            | 1.63            | 2.01                         | 74.6           | 414                           | 0.0112          | 0.0382         | 0.0586        | 0.131        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.00662     |
|              | 07/15/11    | 24.9            | 1.65            | 1.78                         | 70.2           | 434                           | 0.0371          | 0.0374         | 0.0647        | 0.166        | <0.00200       | 0.00741         | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | 0.00511       | <0.00500        | <0.00500      | <0.00500       | 0.00932     |
|              | 01/31/12    | 31.5            | 2.22            | 1.43                         | 80.5           | 484                           | <0.0100         | 0.0341         | 0.0653        | 0.108        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.00529     |
|              | 07/25/12    | 30.4            | 1.99            | <2.00                        | 77.8           | 420                           | 0.0306          | 0.0292         | 0.0721        | 0.182        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00708         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.00716     |
|              | 02/27/13    | 31.3            | 1.11            | 2.82                         | 79.1           | 440                           | <0.0100         | 0.0171         | 0.0766        | 0.154        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | 0.702       | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0167      |
|              | 08/22/13    | 35.7            | 1.80            | 3.01                         | 74             | 466                           | 0.0467          | 0.0246         | 0.0736        | 0.153        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | <0.00500    |
|              | 02/26/14    | 54.0            | 1.48            | 3.17                         | 71.5           | 452                           | 0.0161          | 0.0224         | 0.0737        | 0.152        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.00588          | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | <0.00500    |
| 08/21/14     | 197         | 0.655           | 2.35            | 111                          | 932            | 2.47                          | <0.00500        | 0.174          | 0.124         | <0.00200     | 0.205          | <0.00500        | 0.00644       | 2.22          | <0.00500    | 0.0903      | <0.000200        | 0.00662              | 0.111             | <0.00500      | <0.00500        | <0.00500      | 0.0334         |             |
| MW-10        | 06/16/09    | 32.2            | 0.878           | 1.83                         | 76.5           | 378                           | <0.0200         | <0.00500       | 0.113         | 0.138        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | --             | 0.0127      |
|              | 01/13/10    | 33.4            | 1.05            | 1.84                         | 77.9           | 436                           | <0.0100         | <0.00500       | 0.0815        | 0.162        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | 0.000911       | 0.0133      |
|              | 08/19/10    | 31.7            | 1.07            | 1.91                         | 79.8           | 508                           | 0.0556          | <0.00500       | 0.0798        | 0.129        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.00569     |
|              | 03/03/11    | 32.8            | 0.945           | 2.06                         | 79.1           | 422                           | <0.0100         | <0.00500       | 0.0772        | 0.159        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0133      |
|              | 07/15/11    | 30.7            | 1.06            | 1.68                         | 75.7           | 470                           | 0.0318          | <0.00500       | 0.0855        | 0.177        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | <0.00500    |
|              | 01/31/12    | 42.9            | 1.00            | 1.85                         | 87.4           | 444                           | <0.0100         | <0.00500       | 0.0865        | 0.109        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0252      |
|              | 07/25/12    | 42.7            | 1.10            | <2.00                        | 82.6           | 382                           | <0.0100         | 0.00516        | 0.0882        | 0.186        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.00861     |
|              | 02/27/13    | 48.0            | 0.960           | <2.00                        | 83.5           | 416                           | <0.0100         | 0.00546        | 0.0972        | 0.164        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.00633     |
|              | 08/22/13    | 95.0            | 0.994           | 2.12                         | 72.2           | 516                           | < 0.0100        | <0.00500       | 0.104         | 0.168        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.00671     |
|              | 02/26/14    | 112             | 0.674           | 2.43                         | 70.9           | 568                           | < 0.0100        | <0.00500       | 0.106         | 0.147        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.00979     |
| 08/21/14     | 156         | 0.856           | 2.08            | 68.5                         | 750            | < 0.0100                      | <0.00500        | 0.134          | 0.0998        | <0.00200     | <0.00500       | <0.00500        | <0.00500      | <0.200        | <0.00500    | 0.00939     | <0.000200        | <0.00500             | <0.00500          | <0.00500      | <0.00500        | <0.00500      | 0.0114         |             |
| MW-11        | 06/18/09    | 204             | 0.579           | 1.23                         | 43.1           | 994                           | <0.0100         | <0.00500       | 0.194         | 0.199        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | 0.571       | <0.00500    | 0.387            | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | --             | 0.0212      |
|              | 01/18/10    | 164             | 0.527           | 1.37                         | 71.4           | 842                           | <0.0100         | <0.00500       | 0.147         | 0.238        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0559           | <0.000200            | <0.00500          | 0.0126        | <0.00500        | <0.00500      | 0.00635        | <0.00500    |
|              | 08/18/10    | 146             | 0.616           | 2.38                         | 50.6           | 802                           | 0.0125          | <0.00500       | 0.471         | 0.255        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | 0.347       | <0.00500    | 0.571            | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | 0.00718        | <0.00500    |
|              | 02/25/11    | 415             | 0.549           | <0.500                       | 82.3           | 1,510                         | <0.0100         | <0.00500       | 0.241         | 0.244        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0101           | <0.000200            | <0.00500          | 0.00856       | <0.00500        | <0.00500      | <0.00500       | 0.0982      |
|              | 07/19/11    | 134             | 0.575           | 0.778                        | 57.0           | 894                           | <0.0100         | <0.00500       | 0.150         | 0.232        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0301           | <0.000200            | <0.00500</        |               |                 |               |                |             |

Table 3. Inorganic Constituent Concentrations in Groundwater, Navajo Refining Company, Lea Refinery, Lovington, NM

| Monitor Well | Sample Date | Chloride (mg/L)   | Fluoride (mg/L)   | Nitrate-Nitrite (as N, mg/L) | Sulfate (mg/L)    | Total Dissolved Solids (mg/L) | Aluminum (mg/L)   | Arsenic (mg/L)    | Barium (mg/L)     | Boron (mg/L)      | Cadmium (mg/L)    | Chromium (mg/L)   | Cobalt (mg/L)     | Copper (mg/L)     | Iron (mg/L)       | Lead (mg/L)       | Manganese (mg/L)  | Total Mercury (mg/L) | Molybdenum (mg/L) | Nickel (mg/L)     | Selenium (mg/L)   | Silver (mg/L)     | Uranium (mg/L)    | Zinc (mg/L)       |       |
|--------------|-------------|-------------------|-------------------|------------------------------|-------------------|-------------------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|----------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------|
| NM WQCC      |             | 250               | 1.6               | 10                           | 600               | 1,000                         | 5.0               | 0.1               | 1.0               | 0.75              | 0.01              | 0.05              | 0.05              | 1.0               | 1.0               | 0.05              | 0.20              | 0.002                | 1.0               | 0.2               | 0.05              | 0.05              | 0.03              | 10.0              |       |
| MW-13        | 06/16/09    | 425               | 0.220             | 2.65                         | 138               | 1,790                         | <0.0200           | <0.00500          | 0.0692            | 0.253             | <0.00200          | <0.00500          | 0.0285            | <0.00500          | <0.200            | <0.00500          | 0.0176            | <0.000200            | <0.00500          | 0.0126            | <0.00500          | <0.00500          | --                | 0.0269            |       |
|              | 01/18/10    | 604               | 0.170             | 1.08                         | 79.8              | 2,210                         | <0.0100           | <0.00500          | 0.111             | 0.231             | <0.00200          | 0.00728           | 0.00624           | <0.00500          | <0.200            | <0.00500          | 0.0591            | <0.000200            | <0.00500          | 0.0110            | <0.00500          | <0.00500          | 0.0119            | 0.00769           |       |
|              | 08/18/10    | 390               | 0.278             | <1.00                        | 144               | 1,720                         | 0.0196            | <0.00500          | 0.106             | 0.221             | <0.00200          | <0.00500          | <0.00500          | <0.00500          | <0.200            | <0.00500          | 0.256             | <0.000200            | <0.00500          | <0.00500          | <0.00500          | <0.00500          | 0.0128            | 0.00618           |       |
|              | 02/25/11    | 340               | 0.281             | <0.500                       | 235               | 1,540                         | <0.0100           | <0.00500          | 0.0692            | 0.242             | <0.00200          | <0.00500          | <0.00500          | <0.00500          | <0.200            | <0.00500          | 0.225             | <0.000200            | <0.00500          | 0.0144            | <0.00500          | <0.00500          | 0.0170            | 0.0744            |       |
|              | 07/19/11    | 351               | 0.327             | <0.500                       | 244               | 1,960                         | <0.0100           | <0.00500          | 0.0800            | 0.249             | <0.00200          | <0.00500          | <0.00500          | <0.00500          | <0.200            | <0.00500          | 0.302             | <0.000200            | <0.00500          | 0.0121            | <0.00500          | <0.00500          | 0.0188            | 0.00785           |       |
|              | 02/01/12    | 418               | 0.322             | <0.500                       | 122               | 1,590                         | <0.0100           | <0.00500          | 0.0752            | 0.228             | <0.00200          | <0.00500          | 0.00663           | <0.00500          | <0.200            | <0.00500          | 0.341             | <0.000200            | <0.00500          | 0.0136            | <0.00500          | <0.00500          | 0.0128            | 0.0553            |       |
|              | 07/26/12    | 462               | 0.422             | <2.00                        | 123               | 2,150                         | <0.0100           | <0.00500          | 0.112             | 0.284             | <0.00200          | <0.00500          | 0.00644           | <0.00500          | <0.200            | <0.00500          | 0.459             | <0.000200            | <0.00500          | 0.0108            | <0.00500          | <0.00500          | 0.0158            | 0.0361            |       |
|              | 02/26/13    | 430               | 0.366             | <2.00                        | 135               | 1,610                         | 0.0139            | <0.00500          | 0.129             | 0.270             | <0.00200          | <0.00500          | 0.00657           | <0.00500          | <0.200            | <0.00500          | 0.571             | <0.000200            | 0.00568           | 0.082             | <0.00500          | <0.00500          | 0.0123            | 0.0359            |       |
|              | 08/21/13    | 548               | 0.389             | < 1.00                       | 108               | 2,000                         | < 0.0100          | 0.0059            | 0.159             | 0.265             | <0.00200          | <0.00500          | <0.00500          | <0.00500          | <0.200            | <0.00500          | 0.705             | <0.000200            | <0.00500          | 0.0209            | <0.00500          | <0.00500          | 0.0153            | 0.00931           |       |
|              | 02/27/14    | 588               | 0.282             | <0.500                       | 106               | 2,380                         | 0.0110            | <0.00500          | 0.191             | 0.258             | <0.00200          | 0.0140            | 0.00541           | <0.00500          | 0.321             | <0.00500          | 1.01              | <0.000200            | <0.00500          | 0.0300            | <0.00500          | <0.00500          | 0.0173            | 0.0291            |       |
| 08/19/14     | 485         | <1.00             | < 1.00            | 87.2                         | 1,900             | 0.0737                        | <0.00500          | 0.207             | 0.287             | <0.00200          | <0.00500          | <0.00500          | <0.00500          | <0.200            | <0.00500          | 0.940             | <0.000200         | <0.00500             | 0.00650           | <0.00500          | <0.00500          | 0.0151            | 0.0115            |                   |       |
| MW-14        | 06/16/09    | 93.0              | 0.851             | 5.16                         | 60.9              | 540                           | <0.0200           | <0.00500          | 0.0770            | 0.132             | <0.00200          | <0.00500          | <0.00500          | <0.00500          | <0.200            | <0.00500          | 0.0199            | <0.000200            | 0.0215            | <0.00501          | <0.00500          | <0.00500          | --                | 0.0255            |       |
|              | 01/18/10    | 103               | 0.810             | 6.03                         | 59.0              | 598                           | <0.0100           | <0.00500          | <0.00500          | <0.0200           | <0.00200          | <0.00500          | <0.00500          | <0.00500          | <0.200            | <0.00500          | <0.00500          | <0.000200            | <0.00500          | <0.00500          | <0.00500          | <0.00500          | <0.00500          | <0.00500          |       |
|              | 08/20/10    | 74.1              | 0.986             | 2.76                         | 61.3              | 340                           | 0.103             | <0.00500          | 0.0774            | 0.131             | <0.00200          | 0.0119            | <0.00500          | <0.00500          | <0.200            | <0.00500          | <0.00500          | <0.000200            | 0.00964           | 0.0480            | <0.00500          | <0.00500          | 0.00527           | <0.00500          |       |
|              | 02/25/11    | 58.2              | 0.918             | 2.32                         | 58.7              | 440                           | 0.0101            | <0.00500          | 0.0778            | 0.151             | <0.00200          | <0.00500          | <0.00500          | <0.00500          | <0.200            | <0.00500          | 0.0234            | <0.000200            | 0.00903           | 0.0138            | <0.00500          | <0.00500          | 0.00541           | 0.0532            |       |
|              | 07/18/11    | 48.4              | 1.05              | 1.36                         | 53.0              | 482                           | 0.176             | 0.00615           | 0.110             | 0.156             | <0.00200          | 12.5              | 0.122             | 0.218             | 54.9              | <0.00500          | 1.45              | <0.000200            | 0.0860            | 6.81              | <0.00500          | <0.00500          | 0.00544           | 0.0446            |       |
|              | 01/31/12    | 59.7              | 0.984             | 1.58                         | 58.3              | 444                           | <0.0100           | <0.00500          | 0.0802            | 0.129             | <0.00200          | <0.00500          | <0.00500          | <0.00500          | <0.200            | <0.00500          | 0.0276            | <0.000200            | 0.00608           | 0.0186            | <0.00500          | <0.00500          | <0.00500          | 0.0287            |       |
|              | 07/25/12    | 69.3              | 1.03              | <2.00                        | 54.8              | 446                           | 0.0116            | <0.00500          | 0.0905            | 0.216             | <0.00200          | <0.00500          | <0.00500          | <0.00500          | <0.200            | <0.00500          | 0.0321            | <0.000200            | <0.00500          | 0.0240            | <0.00500          | <0.00500          | <0.00500          | 0.0448            |       |
|              | 02/22/13    | 71.9              | 0.795             | <2.00                        | 52.9              | 428                           | <0.0100           | <0.00500          | 0.0900            | 0.174             | <0.00200          | <0.00500          | <0.00500          | <0.00500          | 0.0705            | <0.200            | <0.00500          | 0.0349               | <0.000200         | 0.0121            | 0.0106            | <0.00500          | <0.00500          | 0.00591           | 0.148 |
|              | 02/28/14    | -- <sup>(1)</sup> | -- <sup>(1)</sup> | -- <sup>(1)</sup>            | -- <sup>(1)</sup> | -- <sup>(1)</sup>             | -- <sup>(1)</sup> | -- <sup>(1)</sup> | -- <sup>(1)</sup> | -- <sup>(1)</sup> | -- <sup>(1)</sup> | -- <sup>(1)</sup> | -- <sup>(1)</sup> | -- <sup>(1)</sup> | -- <sup>(1)</sup> | -- <sup>(1)</sup> | -- <sup>(1)</sup> | -- <sup>(1)</sup>    | -- <sup>(1)</sup> | -- <sup>(1)</sup> | -- <sup>(1)</sup> | -- <sup>(1)</sup> | -- <sup>(1)</sup> | -- <sup>(1)</sup> |       |
|              | 08/20/14    | -- <sup>(1)</sup> | -- <sup>(1)</sup> | 1.10                         | -- <sup>(1)</sup> | 534                           | 0.573             | <0.00500          | 0.125             | 0.203             | <0.00200          | 0.0247            | <0.00500          | <0.00500          | 0.314             | <0.00500          | 0.00919           | <0.000200            | 0.00533           | 0.0178            | <0.00500          | <0.00500          | 0.00502           | 0.0134            |       |
| MW-15        | 08/20/10    | 221               | 0.921             | 3.22                         | 77.6              | 776                           | 0.079             | <0.00500          | 0.145             | 0.175             | <0.00200          | <0.00500          | <0.00500          | <0.00500          | <0.200            | <0.00500          | <0.00500          | <0.000200            | <0.00500          | <0.00500          | <0.00500          | <0.00500          | <0.00500          | 0.0198            |       |
|              | 02/24/11    | 190               | 0.885             | 4.28                         | 67.0              | 738                           | <0.0100           | <0.00500          | 0.127             | 0.165             | <0.00200          | 0.0102            | <0.00500          | <0.00500          | <0.200            | <0.00500          | <0.00500          | <0.000200            | <0.00500          | <0.00500          | <0.00500          | <0.00500          | <0.00500          | 0.0385            |       |
|              | 07/14/11    | 236               | 0.701             | 4.18                         | 60.9              | 940                           | <0.0100           | <0.00500          | 0.173             | 0.201             | <0.00200          | 0.0132            | <0.00500          | <0.00500          | <0.200            | <0.00500          | <0.00500          | <0.000200            | <0.00500          | 0.00657           | <0.00500          | <0.00500          | <0.00500          | 0.0122            |       |
|              | 01/30/12    | 304               | 0.840             | 4.09                         | 78.6              | 1,330                         | <0.0100           | <0.00500          | 0.180             | 0.178             | <0.00200          | 0.00644           | <0.00500          | <0.00500          | <0.200            | <0.00500          | <0.00500          | <0.000200            | <0.00500          | <0.00500          | <0.00500          | <0.00500          | <0.00500          | 0.00967           |       |
|              | 07/24/12    | 291               | 0.965             | 8.22                         | 80.3              | 1,060                         | <0.0100           | <0.00500          | 0.178             | 0.227             | <0.00200          | 0.0110            | <0.00500          | <0.00500          | <0.200            | <0.00500          | <0.00500          | <0.000200            | <0.00500          | <0.00500          | <0.00500          | <0.00500          | <0.00500          | 0.00636           |       |
|              | 02/19/13    | 254               | 0.819             | 5.12                         | 76.0              | 882                           | 0.0682            | <0.00500          | 0.178             | 0.191             | &lt               |                   |                   |                   |                   |                   |                   |                      |                   |                   |                   |                   |                   |                   |       |

Table 3. Inorganic Constituent Concentrations in Groundwater, Navajo Refining Company, Lea Refinery, Lovington, NM

| Monitor Well | Sample Date | Chloride (mg/L) | Fluoride (mg/L) | Nitrate-Nitrite (as N, mg/L) | Sulfate (mg/L) | Total Dissolved Solids (mg/L) | Aluminum (mg/L) | Arsenic (mg/L) | Barium (mg/L) | Boron (mg/L) | Cadmium (mg/L) | Chromium (mg/L) | Cobalt (mg/L) | Copper (mg/L) | Iron (mg/L) | Lead (mg/L) | Manganese (mg/L) | Total Mercury (mg/L) | Molybdenum (mg/L) | Nickel (mg/L) | Selenium (mg/L) | Silver (mg/L) | Uranium (mg/L) | Zinc (mg/L) |
|--------------|-------------|-----------------|-----------------|------------------------------|----------------|-------------------------------|-----------------|----------------|---------------|--------------|----------------|-----------------|---------------|---------------|-------------|-------------|------------------|----------------------|-------------------|---------------|-----------------|---------------|----------------|-------------|
| NM WQCC      |             | 250             | 1.6             | 10                           | 600            | 1,000                         | 5.0             | 0.1            | 1.0           | 0.75         | 0.01           | 0.05            | 0.05          | 1.0           | 1.0         | 0.05        | 0.20             | 0.002                | 1.0               | 0.2           | 0.05            | 0.05          | 0.03           | 10.0        |
| MW-17R       | 08/22/13    | 246             | 0.602           | 3.44                         | 81.7           | 1,190                         | 0.0302          | <0.00500       | 0.154         | 0.188        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0819           | <0.000200            | 0.00531           | 0.0189        | <0.00500        | <0.00500      | <0.00500       | <0.00500    |
|              | 02/27/14    | 184             | 0.425           | 0.629                        | 92.5           | 904                           | 0.254           | <0.00500       | 0.121         | 0.193        | <0.00200       | 0.0121          | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0342           | <0.000200            | <0.00500          | 0.0273        | <0.00500        | <0.00500      | <0.00500       | <0.00500    |
|              | 08/22/14    | 170             | 0.602           | 2.70                         | 94.8           | 860                           | 0.0459          | <0.00500       | 0.153         | 0.120        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0989           | <0.000200            | <0.00500          | 0.0378        | <0.00500        | <0.00500      | <0.00500       | 0.0243      |
| MW-18        | 08/23/10    | 176             | 0.456           | 0.733                        | 287            | 1,080                         | 0.0787          | <0.00500       | 0.0575        | 0.334        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.314            | <0.000200            | 0.00561           | 0.0298        | 0.00548         | <0.00500      | 0.0123         | 0.0772      |
|              | 02/24/11    | 286             | 0.514           | 4.14                         | 298            | 1,240                         | 0.0157          | <0.00500       | 0.0766        | 0.330        | <0.00200       | 0.0186          | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.00536          | <0.000200            | <0.00500          | 0.0144        | 0.00501         | <0.00500      | 0.00883        | 0.0439      |
|              | 07/18/11    | 218             | 0.800           | 5.74                         | 234            | 1,290                         | 0.0244          | <0.00500       | 0.05636       | 0.396        | <0.00200       | 0.0111          | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | 0.0129        | <0.00500        | <0.00500      | 0.00666        | 0.0661      |
|              | 01/31/12    | 106             | 0.722           | 3.89                         | 94.3           | 584                           | 0.0113          | <0.00500       | 0.0645        | 0.133        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0191      |
|              | 07/25/12    | 103             | 0.753           | 2.01                         | 63.4           | 562                           | 0.0110          | <0.00500       | 0.0780        | 0.230        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.00684     |
|              | 02/22/13    | 181             | 0.564           | 4.02                         | 116            | 782                           | 0.0742          | <0.00500       | 0.105         | 0.249        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0129           | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | 0.0138         | 0.0187      |
|              | 08/22/13    | 197             | 0.531           | 5.59                         | 130            | 1,100                         | < 0.0100        | <0.00500       | 0.110         | 0.243        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | 0.00509       | <0.00500        | <0.00500      | <0.00500       | <0.00500    |
|              | 02/26/14    | 145             | 0.514           | 4.36                         | 89.1           | 680                           | 0.0213          | <0.00500       | 0.0766        | 0.244        | <0.00200       | <0.00500        | <0.00500      | 0.0215        | <0.200      | <0.00500    | 0.0177           | <0.000200            | <0.00500          | 0.00681       | <0.00500        | <0.00500      | 0.00701        | 0.0465      |
|              | 08/20/14    | 143             | 0.590           | 1.97                         | 123            | 678                           | 1.31            | <0.00500       | 0.145         | 0.242        | <0.00200       | 0.00506         | <0.00500      | <0.00500      | 0.637       | <0.00500    | 0.0378           | <0.000200            | <0.00500          | 0.00634       | <0.00500        | <0.00500      | <0.00500       | 0.0363      |
| MW-19        | 08/23/10    | 469             | 0.536           | 2.94                         | 178            | 1,650                         | 0.101           | 0.0476         | 0.229         | <0.0200      | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.00666          | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0227      |
|              | 02/24/11    | 235             | 0.713           | 2.87                         | 90.7           | 828                           | <0.0100         | <0.00500       | 0.0764        | 0.180        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0318      |
|              | 07/18/11    | 688             | 0.734           | 3.66                         | 142            | 2,880                         | <0.0100         | <0.00500       | 0.092         | 0.266        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.00781          | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0553      |
|              | 01/31/12    | 610             | 0.568           | 4.12                         | 121            | 1,770                         | <0.0100         | <0.00500       | 0.0688        | 0.350        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.00553          | <0.000200            | <0.00500          | 0.00525       | <0.00500        | <0.00500      | <0.00500       | 0.0345      |
|              | 07/25/12    | 1,130           | 0.450           | 5.11                         | 117            | 3,570                         | 0.0114          | <0.00500       | 0.106         | 0.535        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.00593          | <0.000200            | <0.00500          | 0.00664       | <0.00500        | <0.00500      | <0.00500       | 0.0714      |
|              | 02/26/13    | 540             | 0.519           | 4.21                         | 115            | 1,650                         | <0.0100         | <0.00500       | 0.0870        | 0.300        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | 0.00566       | <0.00500        | <0.00500      | <0.00500       | 0.0629      |
|              | 08/22/13    | 487             | 0.645           | 3.43                         | 92.6           | 1,430                         | < 0.0100        | <0.00500       | 0.0857        | 0.241        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.00512     |
|              | 08/22/13    | 475             | 0.672           | 3.38                         | 95.7           | 1,670                         | 0.0182          | <0.00500       | 0.0864        | 0.237        | <0.00200       | 0.0143          | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | 0.009         | <0.00500        | <0.00500      | <0.00500       | <0.00500    |
|              | 02/26/14    | 264             | 0.576           | 2.34                         | 72.3           | 850                           | 0.012           | <0.00500       | 0.0793        | 0.227        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0157           | <0.000200            | <0.00500          | 0.0122        | <0.00500        | <0.00500      | <0.00500       | 0.0333      |
|              | 02/26/14    | 288             | 0.555           | 2.51                         | 76.0           | 950                           | 0.0435          | <0.00500       | 0.0753        | 0.204        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0165           | <0.000200            | <0.00500          | 0.0123        | <0.00500        | <0.00500      | <0.00500       | 0.0350      |
|              | 08/19/14    | 233             | 0.592           | 2.48                         | 84.5           | 774                           | 0.0461          | <0.00500       | 0.269         | 0.279        | <0.00200       | 0.0352          | <0.00500      | <0.00500      | 0.263       | <0.00500    | 0.0204           | <0.000200            | <0.00500          | 0.0261        | <0.00500        | <0.00500      | <0.00500       | 0.00854     |
|              | 08/19/14    | 241             | 0.627           | 2.59                         | 84.7           | 820                           | 0.0208          | <0.00500       | 0.0846        | 0.236        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0106           | <0.000200            | <0.00500          | 0.00943       | <0.00500        | <0.00500      | <0.00500       | 0.00640     |
| MW-20        | 08/23/10    | 169             | 0.570           | 1.74                         | 65.1           | 868                           | 0.0891          | <0.00500       | 0.122         | 0.143        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.00970     |
|              | 02/25/11    | 187             | 0.603           | 2.58                         | 66.3           | 840                           | <0.0100         | <0.00500       | 0.120         | 0.150        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0643      |
|              | 07/18/11    | 148             | 0.765           | 2.06                         | 51.3           | 1,020                         | <0.0100         | <0.00500       | 0.134         | 0.159        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00           |               |                |             |

Table 3. Inorganic Constituent Concentrations in Groundwater, Navajo Refining Company, Lea Refinery, Lovington, NM

| Monitor Well | Sample Date | Chloride (mg/L) | Fluoride (mg/L) | Nitrate-Nitrite (as N, mg/L) | Sulfate (mg/L) | Total Dissolved Solids (mg/L) | Aluminum (mg/L) | Arsenic (mg/L) | Barium (mg/L) | Boron (mg/L) | Cadmium (mg/L) | Chromium (mg/L) | Cobalt (mg/L) | Copper (mg/L) | Iron (mg/L) | Lead (mg/L) | Manganese (mg/L) | Total Mercury (mg/L) | Molybdenum (mg/L) | Nickel (mg/L) | Selenium (mg/L) | Silver (mg/L) | Uranium (mg/L) | Zinc (mg/L) |
|--------------|-------------|-----------------|-----------------|------------------------------|----------------|-------------------------------|-----------------|----------------|---------------|--------------|----------------|-----------------|---------------|---------------|-------------|-------------|------------------|----------------------|-------------------|---------------|-----------------|---------------|----------------|-------------|
| NM WQCC      |             | 250             | 1.6             | 10                           | 600            | 1,000                         | 5.0             | 0.1            | 1.0           | 0.75         | 0.01           | 0.05            | 0.05          | 1.0           | 1.0         | 0.05        | 0.20             | 0.002                | 1.0               | 0.2           | 0.05            | 0.05          | 0.03           | 10.0        |
| MW-22        | 08/23/10    | 115             | 0.552           | 1.76                         | 62.3           | 726                           | 0.121           | <0.00500       | 0.165         | 0.174        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0306           | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | 0.00604        | 0.0916      |
|              | 02/28/11    | 117             | 0.587           | 2.36                         | 68.6           | 678                           | <0.0100         | <0.00500       | 0.146         | 0.173        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0108           | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | 0.00616        | 0.0487      |
|              | 07/19/11    | 107             | 0.568           | 2.06                         | 64.1           | 740                           | <0.0100         | <0.00500       | 0.150         | 0.178        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.00721          | <0.000200            | <0.00500          | 0.00546       | <0.00500        | <0.00500      | 0.00638        | 0.0203      |
|              | 01/31/12    | 141             | 0.570           | 2.26                         | 74.3           | 766                           | <0.0100         | <0.00500       | 0.151         | 0.141        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0103           | <0.000200            | <0.00500          | 0.00762       | <0.00500        | <0.00500      | 0.00501        | 0.0183      |
|              | 07/26/12    | 149             | 0.628           | 2.09                         | 68.3           | 830                           | <0.0100         | <0.00500       | 0.143         | 0.196        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.00949          | <0.000200            | <0.00500          | 0.00839       | <0.00500        | <0.00500      | 0.00564        | 0.0068      |
|              | 02/21/13    | 178             | 0.500           | 2.30                         | 80.4           | 798                           | 0.0231          | <0.00500       | 0.145         | 0.180        | <0.00200       | 0.0305          | <0.00500      | <0.00500      | 0.269       | <0.00500    | 0.0386           | <0.000200            | <0.00500          | 0.052         | <0.00500        | <0.00500      | 0.0059         | 0.0208      |
|              | 08/21/13    | 176             | 0.606           | 2.94                         | 83.0           | 890                           | < 0.0100        | <0.00500       | 0.137         | 0.210        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0233           | <0.000200            | <0.00500          | 0.0209        | <0.00500        | <0.00500      | 0.00658        | 0.00566     |
|              | 02/25/14    | 172             | 0.416           | 3.53                         | 85.2           | 842                           | < 0.0100        | <0.00500       | 0.143         | 0.204        | <0.00200       | 0.0133          | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0238           | <0.000200            | <0.00500          | 0.0266        | <0.00500        | <0.00500      | 0.00632        | 0.0150      |
| 08/20/14     | 120         | 1.00            | 2.36            | 127                          | 738            | 40.3                          | 0.00642         | 0.141          | 0.239         | <0.00200     | 0.184          | <0.00500        | 0.00983       | 4.32          | 0.00743     | 0.0715      | <0.000200        | 0.00881              | 0.0999            | <0.00500      | <0.00500        | 0.0336        | 0.0370         |             |
| MW-23        | 08/23/10    | 645             | 0.782           | 2.92                         | 121            | 2,260                         | 0.237           | <0.00500       | 0.245         | 0.157        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.00669          | <0.000200            | <0.00500          | 0.00859       | <0.00500        | <0.00500      | <0.00500       | 0.0570      |
|              | 02/28/11    | 511             | 0.676           | 3.47                         | 81.9           | 1,540                         | <0.0100         | <0.00500       | 0.164         | 0.151        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.00831          | <0.000200            | <0.00500          | 0.00930       | <0.00500        | <0.00500      | <0.00500       | 0.0463      |
|              | 07/19/11    | 712             | 0.670           | 3.79                         | 108            | 3,090                         | <0.0100         | <0.00500       | 0.272         | 0.181        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.00647          | <0.000200            | <0.00500          | 0.00912       | <0.00500        | <0.00500      | <0.00500       | 0.0213      |
|              | 02/01/12    | 887             | 0.697           | 4.07                         | 85.4           | 2,720                         | 0.0108          | <0.00500       | 0.268         | 0.159        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.00658          | <0.000200            | <0.00500          | 0.00714       | <0.00500        | <0.00500      | <0.00500       | 0.0207      |
|              | 07/26/12    | 774             | 0.750           | 3.45                         | 100            | 3,060                         | <0.0100         | <0.00500       | 0.252         | 0.198        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0101      |
|              | 02/26/13    | 662             | 0.690           | 3.46                         | 93.9           | 2,040                         | <0.0100         | <0.00500       | 0.170         | 0.196        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.00944          | <0.000200            | <0.00500          | 0.0155        | <0.00500        | <0.00500      | <0.00500       | 0.0179      |
|              | 08/21/13    | 530             | 0.808           | 3.29                         | 115            | 1,910                         | < 0.0100        | <0.00500       | 0.141         | 0.207        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0315           | <0.000200            | <0.00500          | 0.0286        | <0.00500        | <0.00500      | 0.00533        | 0.00919     |
|              | 02/25/14    | 574             | 0.605           | 3.41                         | 89.0           | 1,860                         | < 0.0100        | <0.00500       | 0.162         | 0.198        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0486           | <0.000200            | <0.00500          | 0.041         | <0.00500        | <0.00500      | <0.00500       | 0.0224      |
| 08/21/14     | 443         | 0.792           | 2.89            | 98.1                         | 1,680          | 0.0606                        | <0.00500        | 0.147          | 0.138         | <0.00200     | 0.0129         | <0.00500        | <0.00500      | <0.200        | <0.00500    | 0.157       | <0.000200        | 0.00522              | 0.0719            | <0.00500      | <0.00500        | <0.00500      | 0.0104         |             |
| MW-24        | 08/24/10    | 34.6            | 2.31            | 2.40                         | 53.9           | 422                           | 0.187           | <0.00500       | 0.0867        | 0.140        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.00922     |
|              | 02/28/11    | 39.6            | 2.16            | 2.94                         | 55.3           | 414                           | <0.0100         | <0.00500       | 0.0878        | 0.154        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | 0.00634       | <0.00500        | <0.00500      | <0.00500       | 0.0245      |
|              | 07/14/11    | 43.1            | 1.55            | 2.38                         | 48.1           | 504                           | <0.0100         | <0.00500       | 0.0932        | 0.173        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | 0.00543       | <0.00500        | <0.00500      | <0.00500       | 0.0249      |
|              | 02/01/12    | 50.6            | 2.42            | 2.32                         | 62.3           | 418                           | <0.0100         | <0.00500       | 0.0946        | 0.127        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.00760          | <0.000200            | <0.00500          | 0.00725       | <0.00500        | <0.00500      | <0.00500       | 0.0101      |
|              | 07/30/12    | 51.8            | 2.42            | 2.39                         | 55.1           | 420                           | <0.0100         | <0.00500       | 0.0889        | 0.179        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.00508          | <0.000200            | <0.00500          | 0.00758       | <0.00500        | <0.00500      | <0.00500       | 0.0127      |
|              | 07/30/12    | 55.5            | 2.34            | 2.34                         | 58.8           | 446                           | <0.0100         | <0.00500       | 0.0851        | 0.160        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | 0.00731       | <0.00500        | <0.00500      | <0.00500       | 0.0155      |
|              | 02/26/13    | 46.6            | 2.39            | 2.05                         | 68.6           | 442                           | <0.0100         | <0.00500       | 0.0913        | 0.187        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0106           | <0.000200            | <0.00500          | 0.0165        | <0.00500        | <0.00500      | <0.00500       | 0.0151      |
|              | 08/21/13    | 56.5            | 2.77            | 2.04                         | 55.6           | 426                           | < 0.0100        | <0.00500       | 0.0856        | 0.183        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0146           | <0.000200            | <0.00500          | 0.0157        |                 |               |                |             |



Table 3. Inorganic Constituent Concentrations in Groundwater, Navajo Refining Company, Lea Refinery, Lovington, NM

| Monitor Well      | Sample Date | Chloride (mg/L) | Fluoride (mg/L) | Nitrate-Nitrite (as N, mg/L) | Sulfate (mg/L) | Total Dissolved Solids (mg/L) | Aluminum (mg/L) | Arsenic (mg/L) | Barium (mg/L) | Boron (mg/L) | Cadmium (mg/L) | Chromium (mg/L) | Cobalt (mg/L) | Copper (mg/L) | Iron (mg/L) | Lead (mg/L) | Manganese (mg/L) | Total Mercury (mg/L) | Molybdenum (mg/L) | Nickel (mg/L) | Selenium (mg/L) | Silver (mg/L) | Uranium (mg/L) | Zinc (mg/L) |
|-------------------|-------------|-----------------|-----------------|------------------------------|----------------|-------------------------------|-----------------|----------------|---------------|--------------|----------------|-----------------|---------------|---------------|-------------|-------------|------------------|----------------------|-------------------|---------------|-----------------|---------------|----------------|-------------|
| NM WQCC           |             | 250             | 1.6             | 10                           | 600            | 1,000                         | 5.0             | 0.1            | 1.0           | 0.75         | 0.01           | 0.05            | 0.05          | 1.0           | 1.0         | 0.05        | 0.20             | 0.002                | 1.0               | 0.2           | 0.05            | 0.05          | 0.03           | 10.0        |
| MW-27             | 08/18/10    | 115             | 0.644           | 5.10                         | 118            | 752                           | 0.218           | <0.00500       | 0.100         | 0.152        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0534           | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | 0.00544        | 0.0213      |
|                   | 02/25/11    | 144             | 0.595           | <0.500                       | 78.5           | 746                           | <0.0100         | <0.00500       | 0.0985        | 0.139        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0336           | <0.000200            | <0.00500          | 0.00769       | <0.00500        | <0.00500      | 0.00625        | 0.0453      |
|                   | 07/20/11    | 150             | 0.510           | 1.69                         | 73.2           | 812                           | 0.0378          | <0.00500       | 0.112         | 0.165        | <0.00200       | 0.0353          | <0.00500      | <0.00500      | 0.393       | <0.00500    | 0.0179           | <0.000200            | <0.00500          | 0.0415        | <0.00500        | <0.00500      | 0.00571        | 0.0294      |
|                   | 02/01/12    | 164             | 0.691           | 2.43                         | 99.8           | 676                           | <0.0100         | <0.00500       | 0.0902        | 0.126        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.00556          | <0.008000            | <0.00500          | 0.00533       | <0.00500        | <0.00500      | <0.00500       | 0.0121      |
|                   | 07/26/12    | 164             | 0.680           | 2.95                         | 65.3           | 754                           | 0.0155          | <0.00500       | 0.118         | 0.172        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.00587          | <0.000200            | <0.00500          | 0.00737       | <0.00500        | <0.00500      | <0.00500       | 0.0117      |
|                   | 02/26/13    | 199             | 0.647           | 2.77                         | 70.7           | 756                           | <0.0100         | <0.00500       | 0.120         | 0.184        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0586           | <0.000200            | 0.00513           | 0.0593        | <0.00500        | <0.00500      | <0.00500       | 0.0104      |
|                   | 08/20/13    | 315             | 0.562           | 7.12                         | 75.5           | 1,180                         | 0.0440          | <0.00500       | 0.162         | 0.222        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0239           | <0.000200            | <0.00500          | 0.0189        | <0.00500        | <0.00500      | 0.00899        | <0.00500    |
|                   | 02/27/14    | 298             | 0.415           | 8.00                         | 89.3           | 1,150                         | <0.0100         | <0.00500       | 0.139         | 0.232        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0134           | <0.000200            | <0.00500          | 0.0286        | <0.00500        | <0.00500      | 0.0068         | 0.00624     |
| 08/21/14          | 256         | 0.540           | 4.99            | 85.1                         | 1,100          | 0.210                         | <0.00500        | 0.126          | 0.160         | <0.00200     | 0.0447         | <0.00500        | <0.00500      | 0.278         | <0.00500    | 0.0636      | <0.000200        | <0.00500             | 0.0592            | <0.00500      | <0.00500        | 0.00648       | 0.0182         |             |
| MW-28             | 08/24/10    | 71.2            | 1.66            | 1.70                         | 60.3           | 440                           | 0.129           | <0.00500       | 0.0846        | 0.153        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | <0.00500    |
|                   | 02/23/11    | 106             | 1.57            | <0.500                       | 67.4           | 540                           | <0.0100         | <0.00500       | 0.0923        | 0.147        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | <0.00500    |
|                   | 07/14/11    | 106             | 1.28            | 2.40                         | 67.8           | 732                           | <0.0100         | <0.00500       | 0.103         | 0.172        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.00658          | <0.000200            | <0.00500          | 0.00696       | <0.00500        | <0.00500      | <0.00500       | 0.0190      |
|                   | 01/30/12    | 80.6            | 1.68            | 2.53                         | 81.1           | 572                           | <0.0100         | <0.00500       | 0.0746        | 0.152        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0113      |
|                   | 07/24/12    | 74.9            | 1.79            | 2.33                         | 81.6           | 500                           | <0.0100         | <0.00500       | 0.0830        | 0.204        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.00812     |
|                   | 02/19/13    | 65.5            | 1.61            | 2.57                         | 88.4           | 468                           | <0.0100         | <0.00500       | 0.0883        | 0.174        | <0.00200       | <0.00500        | <0.00500      | 0.203         | <0.200      | <0.00500    | 0.0275           | <0.000200            | 0.0100            | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0466      |
|                   | 08/20/13    | 70.4            | 1.77            | 2.42                         | 77.4           | 480                           | < 0.0100        | <0.00500       | 0.0790        | 0.168        | <0.00200       | <0.00500        | <0.00500      | 0.0101        | <0.200      | <0.00500    | 0.00874          | <0.000200            | <0.00500          | 0.00561       | <0.00500        | <0.00500      | <0.00500       | 0.0168      |
|                   | 02/24/14    | 71.7            | 1.30            | 2.60                         | 74.2           | 480                           | < 0.0100        | <0.00500       | 0.0836        | 0.180        | <0.00200       | <0.00500        | <0.00500      | 0.00514       | <0.200      | <0.00500    | 0.00509          | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.00674     |
| 08/19/14          | 70.0        | 1.65            | 2.31            | 78.2                         | 512            | 0.947                         | <0.00500        | 0.106          | 0.205         | <0.00200     | 0.0238         | <0.00500        | 0.0396        | 0.760         | <0.00500    | 0.0128      | <0.000200        | <0.00500             | 0.0129            | <0.00500      | <0.00500        | <0.00500      | 0.0335         |             |
| MW-29 (duplicate) | 08/24/10    | 456             | 0.753           | 2.18                         | 167            | 726                           | 0.0261          | <0.00500       | 0.0644        | 0.189        | <0.00200       | 0.0317          | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0433      |
|                   | 08/24/10    | 132             | 0.741           | 2.15                         | 100            | 742                           | <0.0100         | <0.00500       | 0.0652        | 0.186        | <0.00200       | 0.0321          | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0375      |
|                   | 02/28/11    | 119             | 0.819           | 3.05                         | 101            | 670                           | <0.0100         | <0.00500       | 0.0630        | 0.195        | <0.00200       | 0.0694          | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0301      |
|                   | 07/14/11    | 135             | 0.707           | 2.61                         | 71.6           | 798                           | <0.0100         | <0.00500       | 0.0652        | 0.189        | <0.00200       | 0.162           | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.00532          | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0267      |
|                   | 01/30/12    | 152             | 0.769           | 3.22                         | 96.3           | 898                           | <0.0100         | <0.00500       | 0.0580        | 0.181        | <0.00200       | 0.106           | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0240      |
|                   | 07/24/12    | 250             | 0.828           | 4.08                         | 90.1           | 1,120                         | <0.0100         | <0.00500       | 0.0978        | 0.249        | <0.00200       | 0.261           | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0162      |
|                   | 02/26/13    | 159             | 0.788           | 2.90                         | 82.4           | 722                           | <0.0100         | <0.00500       | 0.0857        | 0.182        | <0.00200       | 0.069           | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0471           | <0.000200            | <0.00500          | 0.0334        | <0.00500        | <0.00500      | <0.00500       | 0.0132      |
|                   | 08/20/13    | 152             | 0.934           | 2.95                         | 96.2           | 654                           | < 0.0100        | <0.00500       | 0.0738        | 0.187        | <0.00200       | 0.117           | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0159           | <0.000200            | <0.00500          | 0.00667       | <0.00500        | <0.00500      | <0.00500       | <0.00500    |
| (duplicate)       | 02/27/14    | 141             | 0.811           | 3.22                         | 74.4           | 660                           | < 0.0100        | <0.00500       | 0.0725        | 0.171        | <0.00200       | 0.250           | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00         |                |             |

Table 3. Inorganic Constituent Concentrations in Groundwater, Navajo Refining Company, Lea Refinery, Lovington, NM

| Monitor Well | Sample Date          | Chloride (mg/L) | Fluoride (mg/L) | Nitrate-Nitrite (as N, mg/L) | Sulfate (mg/L) | Total Dissolved Solids (mg/L) | Aluminum (mg/L) | Arsenic (mg/L) | Barium (mg/L) | Boron (mg/L) | Cadmium (mg/L) | Chromium (mg/L) | Cobalt (mg/L) | Copper (mg/L) | Iron (mg/L) | Lead (mg/L) | Manganese (mg/L) | Total Mercury (mg/L) | Molybdenum (mg/L) | Nickel (mg/L) | Selenium (mg/L) | Silver (mg/L) | Uranium (mg/L) | Zinc (mg/L) |
|--------------|----------------------|-----------------|-----------------|------------------------------|----------------|-------------------------------|-----------------|----------------|---------------|--------------|----------------|-----------------|---------------|---------------|-------------|-------------|------------------|----------------------|-------------------|---------------|-----------------|---------------|----------------|-------------|
| NM WQCC      |                      | 250             | 1.6             | 10                           | 600            | 1,000                         | 5.0             | 0.1            | 1.0           | 0.75         | 0.01           | 0.05            | 0.05          | 1.0           | 1.0         | 0.05        | 0.20             | 0.002                | 1.0               | 0.2           | 0.05            | 0.05          | 0.03           | 10.0        |
| North Well   | 06/18/09             | 140             | 0.933           | 2.72                         | 80.6           | 664                           | <0.0100         | 0.00536        | 0.0997        | 0.151        | <0.00200       | 0.0104          | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | --             | <0.00500    |
|              | 01/14/10             | 143             | 0.793           | 2.90                         | 74.2           | 638                           | <0.0100         | <0.00500       | 0.107         | 0.172        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | 0.00134        | <0.00500    |
|              | 08/24/10             | 127             | 0.932           | 1.81                         | 80.4           | 594                           | <0.0100         | 0.00552        | 0.100         | 0.147        | <0.00200       | <0.00500        | <0.00500      | 0.00856       | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | 0.0161        | <0.00500        | <0.00500      | <0.00500       | 0.00920     |
|              | 03/03/11             | 137             | 0.932           | 2.76                         | 75.2           | 804                           | <0.0100         | 0.00503        | 0.0968        | 0.159        | <0.00200       | 0.0199          | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | <0.00500    |
|              | 07/20/11             | 124             | 0.803           | 2.07                         | 76.5           | 628                           | <0.0100         | <0.00500       | 0.106         | 0.142        | <0.00200       | 0.0140          | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0695      |
|              | 02/02/12             | 149             | 0.977           | 2.54                         | 82.1           | 656                           | 0.0126          | <0.00500       | 0.0944        | 0.132        | <0.00200       | 0.0145          | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | <0.00500    |
|              | 07/30/12             | 121             | 0.986           | 2.63                         | 72.7           | 528                           | <0.0100         | 0.00523        | 0.106         | 0.159        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0178      |
|              | 02/19/13             | 105             | 1.020           | 2.54                         | 83.3           | 496                           | <0.0100         | 0.00693        | 0.0998        | 0.162        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | 0.00537       | <0.00500        | <0.00500      | <0.00500       | 0.00873     |
|              | 08/22/14             | 57.3            | 0.462           | 2.73                         | 37.6           | 532                           | 0.0170          | 0.00530        | 0.106         | <0.0200      | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0119      |
|              | 12/17/14             | 110             | 0.91            | 3.0                          | 69             | --                            | <0.0100         | 0.00579        | 0.0985        | 0.121        | <0.00100       | 0.00101         | <0.00100      | 0.00108       | 0.0180      | <0.00100    | <0.00100         | <0.00020             | 0.00346           | <0.00100      | 0.00359         | <0.00100      | 0.00179        | 0.00315     |
| South Well   | 06/22/09             | 497             | 0.665           | 3.02                         | 106            | 1,450                         | <0.0100         | <0.00500       | 0.154         | 0.189        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | --             | 0.0195      |
|              | 01/14/10             | 498             | 0.686           | 3.27                         | 113            | 1,520                         | 0.0176          | <0.00500       | 0.138         | 0.229        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0224           | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | 0.00236        | <0.00500    |
|              | 08/24/10             | 477             | 0.651           | 2.18                         | 101            | 1,760                         | <0.0100         | <0.00500       | 0.172         | 0.186        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.00576          | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0207      |
|              | 03/03/11             | 549             | 0.647           | 3.24                         | 122            | 1,840                         | <0.0100         | <0.00500       | 0.147         | 0.261        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0226           | <0.000200            | <0.00500          | <0.00500      | 0.00500         | <0.00500      | <0.00500       | 0.0329      |
|              | 07/20/11             | 420             | 0.687           | 2.48                         | 103            | 1,600                         | <0.0100         | <0.00500       | 0.157         | 0.195        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | <0.00500    |
|              | 02/12/12             | 368             | 0.756           | 3.02                         | 89.0           | 1,210                         | <0.0100         | <0.00500       | 0.117         | 0.165        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.00777     |
|              | 07/30/12             | 135             | 1.01            | 2.53                         | 73.3           | 582                           | <0.0100         | <0.00500       | 0.103         | 0.160        | <0.00200       | 0.0111          | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0401      |
|              | 02/19/13             | 359             | 0.743           | 2.88                         | 99.2           | 1,170                         |                 | 0.00576        | 0.149         | 0.197        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0172      |
|              | 02/28/14             | 352             | 0.575           | 0.66                         | 99.2           | 1,210                         | <0.0100         | <0.00500       | 0.131         | 0.195        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.00571          | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0155      |
|              | 08/22/14             | 435             | 0.720           | 3.00                         | 100            | 1,480                         | <0.0100         | <0.00500       | 0.136         | 0.144        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.00670          | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0159      |
|              | (duplicate) 08/22/14 | 437             | 0.724           | 3.00                         | 107            | 1,480                         | 0.0689          | <0.00500       | 0.145         | <0.0200      | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.0103           | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0214      |
|              | 12/17/14             | 390             | 0.63            | 3.2                          | 91             | --                            | <0.0100         | 0.00431        | 0.125         | 0.159        | <0.00100       | 0.00178         | <0.00100      | 0.00128       | 0.0277      | <0.00100    | 0.00422          | <0.00020             | 0.00242           | <0.00100      | 0.00387         | <0.00100      | 0.00227        | 0.0163      |
|              | (duplicate) 12/17/14 | 390             | 0.63            | 3.2                          | 90             | --                            | <0.0100         | 0.00422        | 0.126         | 0.162        | <0.00100       | 0.00179         | <0.00100      | 0.00136       | 0.0226      | <0.00100    | 0.00409          | <0.00020             | 0.00203           | <0.00100      | 0.00359         | <0.00100      | 0.00217        | 0.0151      |
| East Well    | 06/18/09             | 107             | 0.980           | 2.59                         | 84.0           | 554                           | 0.0131          | <0.00500       | 0.0820        | 0.143        | <0.00200       | <0.00500        | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | --             | 0.0172      |
|              | 01/14/10             | 138             | 0.991           | 2.70                         | 72.7           | 676                           | <0.0100         | <0.00500       | 0.0941        | 0.154        | <0.00200       | 0.0119          | <0.00500      | 0.00953       | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | 0.00111        | 0.0291      |
|              | 08/25/10             | 106             | 1.00            | 0.523                        | 74.5           | 522                           | <0.0100         | <0.00500       | 0.0873        | 0.136        | <0.00200       | 0.0145          | <0.00500      | 0.00745       | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0146      |
|              | 03/03/11             | 135             | 0.905           | 2.68                         | 75.6           | 644                           | <0.0100         | <0.00500       | 0.0970        | 0.152        | <0.00200       | 0.0189          | <0.00500      | <0.00500      | <0.200      | 0.00662     | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0347      |
|              | 07/20/11             | 124             | 0.810           | 1.83                         | 73.8           | 596                           | <0.0100         | <0.00500       | 0.1040        | 0.142        | <0.00200       | 0.0200          | <0.00500      | <0.00500      | <0.200      | 0.0116      | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.00936     |
|              | 02/02/12             | 150             | 0.967           | 2.56                         | 81.4           | 664                           | 0.0150          | <0.00500       | 0.0993        | 0.145        | <0.00200       | 0.0166          | <0.00500      | <0.00500      | <0.200      | 0.00988     | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0937      |
|              | 07/30/12             | 144             | 0.962           | 2.40                         | 80.9           | 636                           | <0.0100         | <0.00500       | 0.0922        | 0.136        | <0.00200       | 0.0157          | <0.00500      | 0.00774       | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0166      |
|              | 02/28/14             | 138             | 0.899           | 0.564                        | 80.6           | 658                           | 0.0104          | <0.00500       | 0.116         | 0.158        | <0.00200       | 0.0139          | <0.00500      | <0.00500      | <0.200      | <0.00500    | <0.00500         | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0317      |
|              | 08/22/14             | 124             | 0.914           | 2.71                         | 78.5           | 614                           | <0.0100         | <0.00500       | 0.103         | <0.0200      | <0.00200       | 0.0119          | <0.00500      | <0.00500      | <0.200      | <0.00500    | 0.00812          | <0.000200            | <0.00500          | <0.00500      | <0.00500        | <0.00500      | <0.00500       | 0.0156      |
|              | 12/17/14             | 120             | 0.90            | 2.7                          | 73             | --                            | <0.0100         | 0.00436        | 0.0905        | 0.120        | <0.00100       | 0.0112          | <0.00100      | <0.00100      | 0.143       | <0.00100    | 0.00430          | <0.00020             | 0.00241           | <0.00100      | 0.00395         | <0.00100      | 0.00181        | 0.0147      |

Notes:  
Shading indicates detected result exceeded the New Mexico Water Quality Control Commission (WQCC) Human Health Standard  
mg/L = milligrams per liter  
< = Not reported above laboratory reporting limit  
-- = Not Analyzed  
Samples collected for metals analysis (except for Total Mercury) were field- or lab-filtered with 0.45 micron filter  
<sup>(1)</sup> Not analyzed due to insufficient water volume  
June 2009 to August 2014 analyses performed by ALS Laboratory Group, Houston, Texas  
December 2014 analyses performed by Hall Environmental Analysis Laboratory in Albuquerque, New Mexico



**Table 4. Skinner List Constituent Concentrations in WW-East**

Table 4. Skinner List Constituent Concentrations in WW-East, Navajo Refining Company, Lea Refinery, Lovington, NM

[illegible]

**Notes:**

mg/L = milligrams per liter

-- = No Water Quality Standard Available

\*Total Naphthalene plus monomethylnaphthalates

< = Not reported above laboratory reporting limit

J = analyte was detected below the laboratory reporting limit, reported

NA = Not analyzed

Development of Risked-Based Remediation Goals presented in December 2013 *Refinery Investigation Report*.

Samples collected for metals analysis (except for Mercury) were field filtered with 0.45 micron filter

Shading indicates detected result exceeded the New Mexico Water Quality Control Commission (WQCC) Human Health Standard

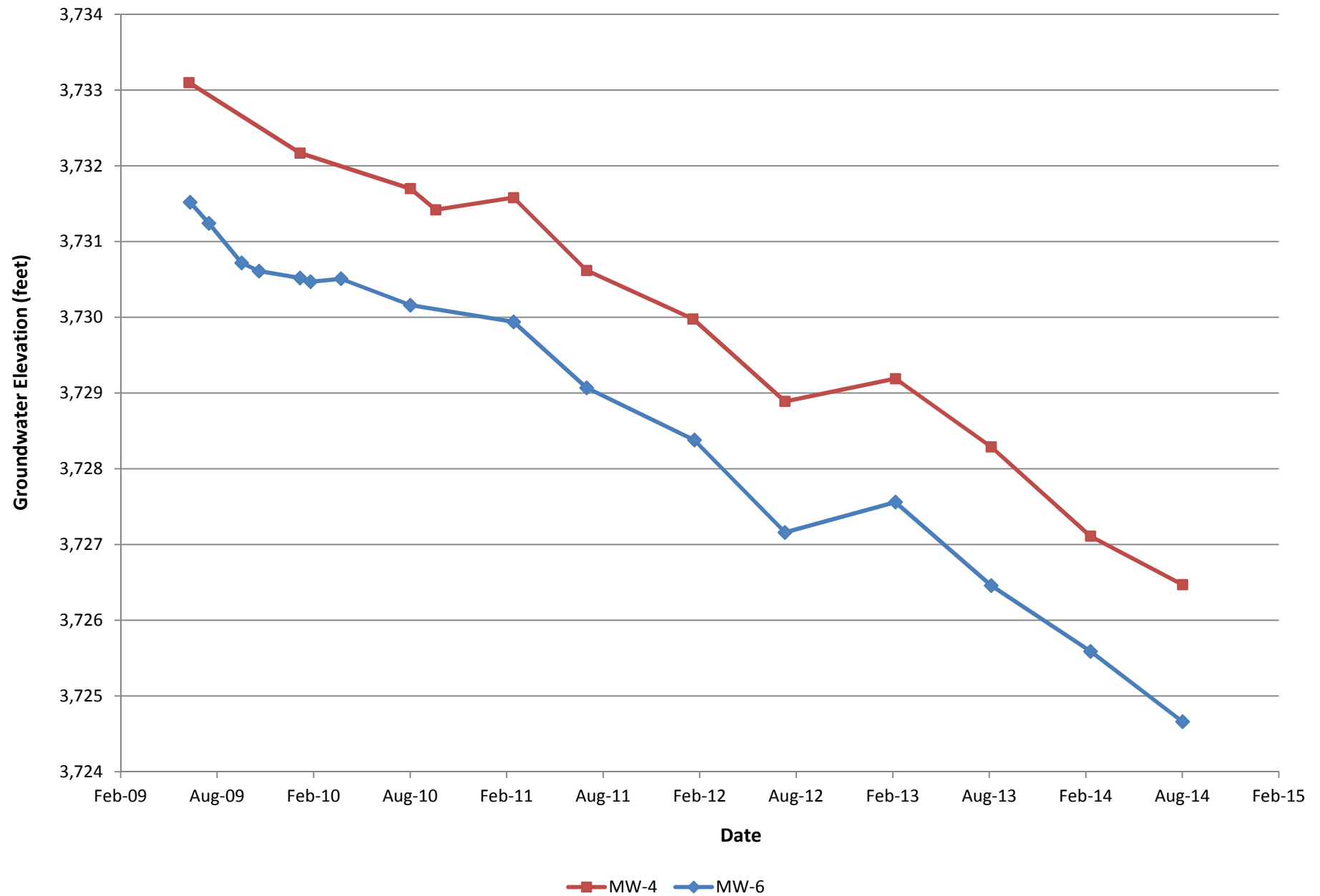
August 2012 to January 2014 analyses performed by ALS Laboratory Group, Houston, Texas

March 2014 to July 2014 analyses performed by Hall Environmental Analysis Laboratory in Albuquerque, New Mexico

## **APPENDIX A**

### **PLOT OF GROUNDWATER ELEVATIONS OVER TIME**

**APPENDIX A - GROUNDWATER ELEVATIONS OVER TIME**  
**Navajo Refining Company**  
**Lea Refinery, Lovington, New Mexico**



**APPENDIX B**

**LABORATORY ANALYTICAL REPORTS**



11-Feb-2014

Aaron Strange  
Navajo Refining Company  
PO Box 1490  
Artesia, NM 88211-1490

Tel: (575) 748-6733  
Fax: (575) 746-5421

Re: Lovington Lea Refining-Skinner List

Work Order: **1402100**

Dear Aaron,

ALS Environmental received 2 samples on 31-Jan-2014 08:53 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 25.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in black ink that reads "Sonia West".

Electronically approved by: Dayna.Fisher

Sonia West  
Project Manager



Certificate No: T104704231-13-12

ADDRESS 10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 | PHONE (281) 530-5656 | FAX (281) 530-5887

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Environmental

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RIGHT SOLUTIONS RIGHT PARTNER

**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining-Skinner List  
**Work Order:** 1402100

## Work Order Sample Summary

| <u>Lab Samp ID</u> | <u>Client Sample ID</u> | <u>Matrix</u> | <u>Tag Number</u> | <u>Collection Date</u> | <u>Date Received</u> | <u>Hold</u>                         |
|--------------------|-------------------------|---------------|-------------------|------------------------|----------------------|-------------------------------------|
| 1402100-01         | East Water Well         | Liquid        |                   | 1/30/2014 08:30        | 1/31/2014 08:53      | <input type="checkbox"/>            |
| 1402100-02         | Trip Blank - 101013-37  | Water         |                   | 1/30/2014              | 1/31/2014 08:53      | <input checked="" type="checkbox"/> |

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**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining-Skinner List  
**Work Order:** 1402100

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**Case Narrative**

Batch 76501, Semivolatile Organics by Method SW8270, Insufficient sample to perform MS/MSD. LCS/LCSD provided as batch quality control.

Batch R161039, Volatile Organics by Method SW8260, Sample 1402097-14 MS and MSD were performed on an unrelated sample.



# ALS Environmental

Date: 11-Feb-14

**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining-Skinner List  
**Sample ID:** East Water Well  
**Collection Date:** 1/30/2014 08:30 AM

**Work Order:** 1402100  
**Lab ID:** 1402100-01  
**Matrix:** LIQUID

| Analyses                       | Result  | Qual | Report Limit    | Units | Dilution Factor       | Date Analyzed                  |
|--------------------------------|---------|------|-----------------|-------|-----------------------|--------------------------------|
| <b>MERCURY-SW7470A</b>         |         |      |                 |       |                       |                                |
| Mercury                        | ND      |      | SW7470 0.000200 | mg/L  | Prep Date: 2/6/2014 1 | Analyst: OFO 2/6/2014 03:54 PM |
| <b>METALS</b>                  |         |      |                 |       |                       |                                |
| Antimony                       | ND      |      | SW6020 0.00500  | mg/L  | Prep Date: 2/5/2014 1 | Analyst: SKS 2/5/2014 05:38 PM |
| Arsenic                        | ND      |      | 0.00500         | mg/L  | 1                     | 2/5/2014 05:38 PM              |
| Barium                         | 0.0964  |      | 0.00500         | mg/L  | 1                     | 2/5/2014 05:38 PM              |
| Beryllium                      | ND      |      | 0.00200         | mg/L  | 1                     | 2/5/2014 05:38 PM              |
| Cadmium                        | ND      |      | 0.00200         | mg/L  | 1                     | 2/5/2014 05:38 PM              |
| Chromium                       | 0.0132  |      | 0.00500         | mg/L  | 1                     | 2/5/2014 05:38 PM              |
| Cobalt                         | ND      |      | 0.00500         | mg/L  | 1                     | 2/5/2014 05:38 PM              |
| Lead                           | ND      |      | 0.00500         | mg/L  | 1                     | 2/5/2014 05:38 PM              |
| Nickel                         | ND      |      | 0.00500         | mg/L  | 1                     | 2/5/2014 05:38 PM              |
| Selenium                       | ND      |      | 0.00500         | mg/L  | 1                     | 2/5/2014 05:38 PM              |
| Silver                         | ND      |      | 0.00500         | mg/L  | 1                     | 2/5/2014 05:38 PM              |
| Vanadium                       | 0.0255  |      | 0.00500         | mg/L  | 1                     | 2/5/2014 05:38 PM              |
| Zinc                           | 0.00685 |      | 0.00500         | mg/L  | 1                     | 2/5/2014 05:38 PM              |
| <b>LOW-LEVEL SEMIVOLATILES</b> |         |      |                 |       |                       |                                |
| 1,2-Dichlorobenzene            | ND      |      | SW8270 0.20     | µg/L  | Prep Date: 2/5/2014 1 | Analyst: ACN 2/7/2014 05:36 PM |
| 1,3-Dichlorobenzene            | ND      |      | 0.20            | µg/L  | 1                     | 2/7/2014 05:36 PM              |
| 1,4-Dichlorobenzene            | ND      |      | 0.20            | µg/L  | 1                     | 2/7/2014 05:36 PM              |
| 1-Methylnaphthalene            | ND      |      | 0.20            | µg/L  | 1                     | 2/7/2014 05:36 PM              |
| 2,4-Dimethylphenol             | ND      |      | 0.20            | µg/L  | 1                     | 2/7/2014 05:36 PM              |
| 2,4-Dinitrophenol              | ND      |      | 1.0             | µg/L  | 1                     | 2/7/2014 05:36 PM              |
| 2-Methylphenol                 | ND      |      | 0.20            | µg/L  | 1                     | 2/7/2014 05:36 PM              |
| 3&4-Methylphenol               | ND      |      | 0.20            | µg/L  | 1                     | 2/7/2014 05:36 PM              |
| 4-Nitrophenol                  | ND      |      | 1.0             | µg/L  | 1                     | 2/7/2014 05:36 PM              |
| Acenaphthylene                 | ND      |      | 0.20            | µg/L  | 1                     | 2/7/2014 05:36 PM              |
| Anthracene                     | ND      |      | 0.20            | µg/L  | 1                     | 2/7/2014 05:36 PM              |
| Benz(a)anthracene              | ND      |      | 0.20            | µg/L  | 1                     | 2/7/2014 05:36 PM              |
| Benzenethiol                   | ND      |      | 0.20            | µg/L  | 1                     | 2/7/2014 05:36 PM              |
| Benzo(a)pyrene                 | ND      |      | 0.20            | µg/L  | 1                     | 2/7/2014 05:36 PM              |
| Benzo(b)fluoranthene           | ND      |      | 0.20            | µg/L  | 1                     | 2/7/2014 05:36 PM              |
| Benzo(k)fluoranthene           | ND      |      | 0.20            | µg/L  | 1                     | 2/7/2014 05:36 PM              |
| Bis(2-ethylhexyl)phthalate     | ND      |      | 0.20            | µg/L  | 1                     | 2/7/2014 05:36 PM              |
| Chrysene                       | ND      |      | 0.20            | µg/L  | 1                     | 2/7/2014 05:36 PM              |
| Dibenz(a,h)acridine            | ND      |      | 0.20            | µg/L  | 1                     | 2/7/2014 05:36 PM              |
| Dibenz(a,h)anthracene          | ND      |      | 0.20            | µg/L  | 1                     | 2/7/2014 05:36 PM              |
| Diethyl phthalate              | ND      |      | 0.20            | µg/L  | 1                     | 2/7/2014 05:36 PM              |
| Dimethyl phthalate             | ND      |      | 0.20            | µg/L  | 1                     | 2/7/2014 05:36 PM              |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 11-Feb-14

Client: Navajo Refining Company

Project: Lovington Lea Refining-Skinner List

Work Order: 1402100

Sample ID: East Water Well

Lab ID: 1402100-01

Collection Date: 1/30/2014 08:30 AM

Matrix: LIQUID

| Analyses                    | Result | Qual | Report Limit  | Units | Dilution Factor | Date Analyzed      |
|-----------------------------|--------|------|---------------|-------|-----------------|--------------------|
| Di-n-butyl phthalate        | ND     |      | 0.20          | µg/L  | 1               | 2/7/2014 05:36 PM  |
| Fluoranthene                | ND     |      | 0.20          | µg/L  | 1               | 2/7/2014 05:36 PM  |
| Fluorene                    | ND     |      | 0.20          | µg/L  | 1               | 2/7/2014 05:36 PM  |
| Indene                      | ND     |      | 0.20          | µg/L  | 1               | 2/7/2014 05:36 PM  |
| Indeno(1,2,3-cd)pyrene      | ND     |      | 0.20          | µg/L  | 1               | 2/7/2014 05:36 PM  |
| Naphthalene                 | ND     |      | 0.20          | µg/L  | 1               | 2/7/2014 05:36 PM  |
| Phenanthrene                | ND     |      | 0.20          | µg/L  | 1               | 2/7/2014 05:36 PM  |
| Phenol                      | ND     |      | 0.20          | µg/L  | 1               | 2/7/2014 05:36 PM  |
| Pyrene                      | ND     |      | 0.20          | µg/L  | 1               | 2/7/2014 05:36 PM  |
| Pyridine                    | ND     |      | 1.0           | µg/L  | 1               | 2/7/2014 05:36 PM  |
| Quinoline                   | ND     |      | 0.20          | µg/L  | 1               | 2/7/2014 05:36 PM  |
| Surr: 2,4,6-Tribromophenol  | 63.9   |      | 34-129        | %REC  | 1               | 2/7/2014 05:36 PM  |
| Surr: 2-Fluorobiphenyl      | 71.5   |      | 40-125        | %REC  | 1               | 2/7/2014 05:36 PM  |
| Surr: 2-Fluorophenol        | 53.9   |      | 20-120        | %REC  | 1               | 2/7/2014 05:36 PM  |
| Surr: 4-Terphenyl-d14       | 73.7   |      | 40-135        | %REC  | 1               | 2/7/2014 05:36 PM  |
| Surr: Nitrobenzene-d5       | 76.8   |      | 41-120        | %REC  | 1               | 2/7/2014 05:36 PM  |
| Surr: Phenol-d6             | 69.6   |      | 20-120        | %REC  | 1               | 2/7/2014 05:36 PM  |
| <b>VOLATILES - SW8260C</b>  |        |      | <b>SW8260</b> |       |                 | <b>Analyst: PC</b> |
| 1,1,1-Trichloroethane       | ND     |      | 5.0           | µg/L  | 1               | 2/6/2014 03:10 PM  |
| 1,1-Dichloroethane          | ND     |      | 5.0           | µg/L  | 1               | 2/6/2014 03:10 PM  |
| 1,2-Dibromoethane           | ND     |      | 5.0           | µg/L  | 1               | 2/6/2014 03:10 PM  |
| 1,2-Dichloroethane          | ND     |      | 5.0           | µg/L  | 1               | 2/6/2014 03:10 PM  |
| 1,4-Dioxane                 | ND     |      | 100           | µg/L  | 1               | 2/6/2014 03:10 PM  |
| 2-Butanone                  | ND     |      | 10            | µg/L  | 1               | 2/6/2014 03:10 PM  |
| Benzene                     | ND     |      | 5.0           | µg/L  | 1               | 2/6/2014 03:10 PM  |
| Carbon disulfide            | ND     |      | 10            | µg/L  | 1               | 2/6/2014 03:10 PM  |
| Chlorobenzene               | ND     |      | 5.0           | µg/L  | 1               | 2/6/2014 03:10 PM  |
| Chloroform                  | ND     |      | 5.0           | µg/L  | 1               | 2/6/2014 03:10 PM  |
| Ethylbenzene                | ND     |      | 5.0           | µg/L  | 1               | 2/6/2014 03:10 PM  |
| Methyl tert-butyl ether     | ND     |      | 5.0           | µg/L  | 1               | 2/6/2014 03:10 PM  |
| Styrene                     | ND     |      | 5.0           | µg/L  | 1               | 2/6/2014 03:10 PM  |
| Tetrachloroethene           | ND     |      | 5.0           | µg/L  | 1               | 2/6/2014 03:10 PM  |
| Toluene                     | ND     |      | 5.0           | µg/L  | 1               | 2/6/2014 03:10 PM  |
| Trichloroethene             | ND     |      | 5.0           | µg/L  | 1               | 2/6/2014 03:10 PM  |
| Xylenes, Total              | ND     |      | 15            | µg/L  | 1               | 2/6/2014 03:10 PM  |
| Surr: 1,2-Dichloroethane-d4 | 96.4   |      | 70-125        | %REC  | 1               | 2/6/2014 03:10 PM  |
| Surr: 4-Bromofluorobenzene  | 96.7   |      | 72-125        | %REC  | 1               | 2/6/2014 03:10 PM  |
| Surr: Dibromofluoromethane  | 101    |      | 71-125        | %REC  | 1               | 2/6/2014 03:10 PM  |
| Surr: Toluene-d8            | 101    |      | 75-125        | %REC  | 1               | 2/6/2014 03:10 PM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

## ALS Environmental

Date: 11-Feb-14

**Client:** Navajo Refining Company

**Project:** Lovington Lea Refining-Skinner List

**Sample ID:** East Water Well

**Collection Date:** 1/30/2014 08:30 AM

**Work Order:** 1402100

**Lab ID:** 1402100-01

**Matrix:** LIQUID

| Analyses                               | Result | Qual | Report<br>Limit                  | Units | Dilution<br>Factor | Date Analyzed                            |
|----------------------------------------|--------|------|----------------------------------|-------|--------------------|------------------------------------------|
| <b>CYANIDE - SM4500CN E</b><br>Cyanide | ND     |      | <b>M4500CN E&amp;G</b><br>0.0200 | mg/L  | 1                  | Analyst: <b>KKB</b><br>2/7/2014 05:43 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**Work Order:** 1402100  
**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining-Skinner List

**DATES REPORT**

| Sample ID                                                                   | Client Sample ID | Matrix | Collection Date      | TCLP Date | Prep Date         | Analysis Date     |
|-----------------------------------------------------------------------------|------------------|--------|----------------------|-----------|-------------------|-------------------|
| <b><u>Batch ID</u> 76495      <u>Test Name:</u> Metals</b>                  |                  |        |                      |           |                   |                   |
| 1402100-01B                                                                 | East Water Well  | Liquid | 1/30/2014 8:30:00 AM |           | 2/5/2014 09:00 AM | 2/5/2014 05:38 PM |
| <b><u>Batch ID</u> 76501      <u>Test Name:</u> Low-Level Semivolatiles</b> |                  |        |                      |           |                   |                   |
| 1402100-01D                                                                 | East Water Well  | Liquid | 1/30/2014 8:30:00 AM |           | 2/5/2014 10:09 AM | 2/7/2014 05:36 PM |
| <b><u>Batch ID</u> 76532      <u>Test Name:</u> Mercury-SW7470A</b>         |                  |        |                      |           |                   |                   |
| 1402100-01B                                                                 | East Water Well  | Liquid | 1/30/2014 8:30:00 AM |           | 2/6/2014 10:43 AM | 2/6/2014 03:54 PM |
| <b><u>Batch ID</u> R161039      <u>Test Name:</u> Volatiles - SW8260C</b>   |                  |        |                      |           |                   |                   |
| 1402100-01A                                                                 | East Water Well  | Liquid | 1/30/2014 8:30:00 AM |           |                   | 2/6/2014 03:10 PM |
| <b><u>Batch ID</u> R161075      <u>Test Name:</u> Cyanide - SM4500CN E</b>  |                  |        |                      |           |                   |                   |
| 1402100-01C                                                                 | East Water Well  | Liquid | 1/30/2014 8:30:00 AM |           |                   | 2/7/2014 05:43 PM |

# ALS Environmental

Date: 11-Feb-14

**Client:** Navajo Refining Company  
**Work Order:** 1402100  
**Project:** Lovington Lea Refining-Skinner List

## QC BATCH REPORT

Batch ID: **76495** Instrument ID **ICPMS05** Method: **SW6020**

| <b>MBLK</b> | Sample ID: <b>MBLKW3-020514-76495</b> |         |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>2/5/2014 05:33 PM</b> |      |              |      |
|-------------|---------------------------------------|---------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| Client ID:  | Run ID: <b>ICPMS05_140205A</b>        |         |         |               | SeqNo: <b>3523939</b> |               | Prep Date: <b>2/5/2014</b>              |      | DF: <b>1</b> |      |
| Analyte     | Result                                | PQL     | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Antimony    | ND                                    | 0.00500 |         |               |                       |               |                                         |      |              |      |
| Arsenic     | ND                                    | 0.00500 |         |               |                       |               |                                         |      |              |      |
| Barium      | ND                                    | 0.00500 |         |               |                       |               |                                         |      |              |      |
| Beryllium   | ND                                    | 0.00200 |         |               |                       |               |                                         |      |              |      |
| Cadmium     | ND                                    | 0.00200 |         |               |                       |               |                                         |      |              |      |
| Chromium    | ND                                    | 0.00500 |         |               |                       |               |                                         |      |              |      |
| Cobalt      | ND                                    | 0.00500 |         |               |                       |               |                                         |      |              |      |
| Lead        | ND                                    | 0.00500 |         |               |                       |               |                                         |      |              |      |
| Nickel      | ND                                    | 0.00500 |         |               |                       |               |                                         |      |              |      |
| Selenium    | ND                                    | 0.00500 |         |               |                       |               |                                         |      |              |      |
| Silver      | ND                                    | 0.00500 |         |               |                       |               |                                         |      |              |      |
| Vanadium    | ND                                    | 0.00500 |         |               |                       |               |                                         |      |              |      |
| Zinc        | ND                                    | 0.00500 |         |               |                       |               |                                         |      |              |      |

| <b>LCS</b> | Sample ID: <b>MLCSW3-020514-76495</b> |         |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>2/5/2014 05:35 PM</b> |      |              |      |
|------------|---------------------------------------|---------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| Client ID: | Run ID: <b>ICPMS05_140205A</b>        |         |         |               | SeqNo: <b>3523940</b> |               | Prep Date: <b>2/5/2014</b>              |      | DF: <b>1</b> |      |
| Analyte    | Result                                | PQL     | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Antimony   | 0.05036                               | 0.00500 | 0.05    | 0             | 101                   | 80-120        |                                         |      |              |      |
| Arsenic    | 0.0493                                | 0.00500 | 0.05    | 0             | 98.6                  | 80-120        |                                         |      |              |      |
| Barium     | 0.04826                               | 0.00500 | 0.05    | 0             | 96.5                  | 80-120        |                                         |      |              |      |
| Beryllium  | 0.0492                                | 0.00200 | 0.05    | 0             | 98.4                  | 80-120        |                                         |      |              |      |
| Cadmium    | 0.04865                               | 0.00200 | 0.05    | 0             | 97.3                  | 80-120        |                                         |      |              |      |
| Chromium   | 0.05129                               | 0.00500 | 0.05    | 0             | 103                   | 80-120        |                                         |      |              |      |
| Cobalt     | 0.05099                               | 0.00500 | 0.05    | 0             | 102                   | 80-120        |                                         |      |              |      |
| Lead       | 0.04831                               | 0.00500 | 0.05    | 0             | 96.6                  | 80-120        |                                         |      |              |      |
| Nickel     | 0.05039                               | 0.00500 | 0.05    | 0             | 101                   | 80-120        |                                         |      |              |      |
| Selenium   | 0.05135                               | 0.00500 | 0.05    | 0             | 103                   | 80-120        |                                         |      |              |      |
| Silver     | 0.04936                               | 0.00500 | 0.05    | 0             | 98.7                  | 80-120        |                                         |      |              |      |
| Vanadium   | 0.05087                               | 0.00500 | 0.05    | 0             | 102                   | 80-120        |                                         |      |              |      |
| Zinc       | 0.05006                               | 0.00500 | 0.05    | 0             | 100                   | 80-120        |                                         |      |              |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

QC Page: 1 of 14

**Client:** Navajo Refining Company  
**Work Order:** 1402100  
**Project:** Lovington Lea Refining-Skinner List

## QC BATCH REPORT

Batch ID: **76495** Instrument ID **ICPMS05** Method: **SW6020**

| MS                                |         | Sample ID: <b>1402100-01BMS</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>2/5/2014 05:48 PM</b> |           |              |
|-----------------------------------|---------|---------------------------------|---------|---------------|------|-----------------------|---------------|-----------------------------------------|-----------|--------------|
| Client ID: <b>East Water Well</b> |         | Run ID: <b>ICPMS05_140205A</b>  |         |               |      | SeqNo: <b>3523945</b> |               | Prep Date: <b>2/5/2014</b>              |           | DF: <b>1</b> |
| Analyte                           | Result  | PQL                             | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                    | RPD Limit | Qual         |
| Antimony                          | 0.05187 | 0.00500                         | 0.05    | 0.000121      | 104  | 80-120                |               |                                         |           |              |
| Arsenic                           | 0.05489 | 0.00500                         | 0.05    | 0.004994      | 99.8 | 80-120                |               |                                         |           |              |
| Barium                            | 0.1485  | 0.00500                         | 0.05    | 0.09643       | 104  | 80-120                |               |                                         |           |              |
| Beryllium                         | 0.05109 | 0.00200                         | 0.05    | 0.000224      | 102  | 80-120                |               |                                         |           |              |
| Cadmium                           | 0.04941 | 0.00200                         | 0.05    | 0.000181      | 98.5 | 80-120                |               |                                         |           |              |
| Chromium                          | 0.0639  | 0.00500                         | 0.05    | 0.0132        | 101  | 80-120                |               |                                         |           |              |
| Cobalt                            | 0.05049 | 0.00500                         | 0.05    | 0.000313      | 100  | 80-120                |               |                                         |           |              |
| Lead                              | 0.04805 | 0.00500                         | 0.05    | 0.000894      | 94.3 | 80-120                |               |                                         |           |              |
| Nickel                            | 0.05003 | 0.00500                         | 0.05    | 0.000372      | 99.3 | 80-120                |               |                                         |           |              |
| Selenium                          | 0.05471 | 0.00500                         | 0.05    | 0.004131      | 101  | 80-120                |               |                                         |           |              |
| Silver                            | 0.04866 | 0.00500                         | 0.05    | 0.000166      | 97   | 80-120                |               |                                         |           |              |
| Vanadium                          | 0.07542 | 0.00500                         | 0.05    | 0.02554       | 99.8 | 80-120                |               |                                         |           |              |
| Zinc                              | 0.05539 | 0.00500                         | 0.05    | 0.006848      | 97.1 | 80-120                |               |                                         |           |              |

| MSD                               |         | Sample ID: <b>1402100-01BMSD</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>2/5/2014 05:50 PM</b> |           |              |
|-----------------------------------|---------|----------------------------------|---------|---------------|------|-----------------------|---------------|-----------------------------------------|-----------|--------------|
| Client ID: <b>East Water Well</b> |         | Run ID: <b>ICPMS05_140205A</b>   |         |               |      | SeqNo: <b>3523946</b> |               | Prep Date: <b>2/5/2014</b>              |           | DF: <b>1</b> |
| Analyte                           | Result  | PQL                              | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                    | RPD Limit | Qual         |
| Antimony                          | 0.05079 | 0.00500                          | 0.05    | 0.000121      | 101  | 80-120                | 0.05187       | 2.1                                     | 15        |              |
| Arsenic                           | 0.05531 | 0.00500                          | 0.05    | 0.004994      | 101  | 80-120                | 0.05489       | 0.76                                    | 15        |              |
| Barium                            | 0.1466  | 0.00500                          | 0.05    | 0.09643       | 100  | 80-120                | 0.1485        | 1.3                                     | 15        |              |
| Beryllium                         | 0.05039 | 0.00200                          | 0.05    | 0.000224      | 100  | 80-120                | 0.05109       | 1.37                                    | 15        |              |
| Cadmium                           | 0.0483  | 0.00200                          | 0.05    | 0.000181      | 96.2 | 80-120                | 0.04941       | 2.26                                    | 15        |              |
| Chromium                          | 0.06212 | 0.00500                          | 0.05    | 0.0132        | 97.8 | 80-120                | 0.0639        | 2.82                                    | 15        |              |
| Cobalt                            | 0.0486  | 0.00500                          | 0.05    | 0.000313      | 96.6 | 80-120                | 0.05049       | 3.82                                    | 15        |              |
| Lead                              | 0.04885 | 0.00500                          | 0.05    | 0.000894      | 95.9 | 80-120                | 0.04805       | 1.65                                    | 15        |              |
| Nickel                            | 0.04852 | 0.00500                          | 0.05    | 0.000372      | 96.3 | 80-120                | 0.05003       | 3.06                                    | 15        |              |
| Selenium                          | 0.05501 | 0.00500                          | 0.05    | 0.004131      | 102  | 80-120                | 0.05471       | 0.538                                   | 15        |              |
| Silver                            | 0.05035 | 0.00500                          | 0.05    | 0.000166      | 100  | 80-120                | 0.04866       | 3.42                                    | 15        |              |
| Vanadium                          | 0.07422 | 0.00500                          | 0.05    | 0.02554       | 97.4 | 80-120                | 0.07542       | 1.61                                    | 15        |              |
| Zinc                              | 0.05545 | 0.00500                          | 0.05    | 0.006848      | 97.2 | 80-120                | 0.05539       | 0.115                                   | 15        |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 1402100  
**Project:** Lovington Lea Refining-Skinner List

## QC BATCH REPORT

Batch ID: **76495** Instrument ID **ICPMS05** Method: **SW6020**

| DUP                               |         | Sample ID: <b>1402100-01BDUP</b> |         | Units: <b>mg/L</b>    |      | Analysis Date: <b>2/5/2014 05:45 PM</b> |               |              |           |      |
|-----------------------------------|---------|----------------------------------|---------|-----------------------|------|-----------------------------------------|---------------|--------------|-----------|------|
| Client ID: <b>East Water Well</b> |         | Run ID: <b>ICPMS05_140205A</b>   |         | SeqNo: <b>3523944</b> |      | Prep Date: <b>2/5/2014</b>              |               | DF: <b>1</b> |           |      |
| Analyte                           | Result  | PQL                              | SPK Val | SPK Ref Value         | %REC | Control Limit                           | RPD Ref Value | %RPD         | RPD Limit | Qual |
| Antimony                          | ND      | 0.00500                          |         |                       |      |                                         | 0.000121      | 0            | 25        |      |
| Arsenic                           | ND      | 0.00500                          |         |                       |      |                                         | 0.004994      | 0            | 25        |      |
| Barium                            | 0.09795 | 0.00500                          |         |                       |      |                                         | 0.09643       | 1.57         | 25        |      |
| Beryllium                         | ND      | 0.00200                          |         |                       |      |                                         | 0.000224      | 0            | 25        |      |
| Cadmium                           | ND      | 0.00200                          |         |                       |      |                                         | 0.000181      | 0            | 25        |      |
| Chromium                          | 0.01292 | 0.00500                          |         |                       |      |                                         | 0.0132        | 2.15         | 25        |      |
| Cobalt                            | ND      | 0.00500                          |         |                       |      |                                         | 0.000313      | 0            | 25        |      |
| Lead                              | ND      | 0.00500                          |         |                       |      |                                         | 0.000894      | 0            | 25        |      |
| Nickel                            | ND      | 0.00500                          |         |                       |      |                                         | 0.000372      | 0            | 25        |      |
| Selenium                          | ND      | 0.00500                          |         |                       |      |                                         | 0.004131      | 0            | 25        |      |
| Silver                            | ND      | 0.00500                          |         |                       |      |                                         | 0.000166      | 0            | 25        |      |
| Vanadium                          | 0.02534 | 0.00500                          |         |                       |      |                                         | 0.02554       | 0.766        | 25        |      |
| Zinc                              | ND      | 0.00500                          |         |                       |      |                                         | 0.006848      | 0            | 25        |      |

The following samples were analyzed in this batch:

1402100-01B

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 1402100  
**Project:** Lovington Lea Refining-Skinner List

## QC BATCH REPORT

Batch ID: **76532** Instrument ID **HG03** Method: **SW7470**

|             |                                       |          |         |               |                       |               |                                         |      |              |      |
|-------------|---------------------------------------|----------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>MBLK</b> | Sample ID: <b>GBLKW1-020614-76532</b> |          |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>2/6/2014 03:15 PM</b> |      |              |      |
| Client ID:  | Run ID: <b>HG03_140206A</b>           |          |         |               | SeqNo: <b>3524475</b> |               | Prep Date: <b>2/6/2014</b>              |      | DF: <b>1</b> |      |
| Analyte     | Result                                | PQL      | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Mercury     | ND                                    | 0.000200 |         |               |                       |               |                                         |      |              |      |

|            |                                       |          |         |               |                       |               |                                         |      |              |      |
|------------|---------------------------------------|----------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>LCS</b> | Sample ID: <b>GLCSW1-020614-76532</b> |          |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>2/6/2014 03:17 PM</b> |      |              |      |
| Client ID: | Run ID: <b>HG03_140206A</b>           |          |         |               | SeqNo: <b>3524476</b> |               | Prep Date: <b>2/6/2014</b>              |      | DF: <b>1</b> |      |
| Analyte    | Result                                | PQL      | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Mercury    | 0.00542                               | 0.000200 | 0.005   | 0             | 108                   | 80-124        |                                         |      |              |      |

|            |                                 |          |         |               |                       |               |                                         |      |              |      |
|------------|---------------------------------|----------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>MS</b>  | Sample ID: <b>1402017-08CMS</b> |          |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>2/6/2014 03:23 PM</b> |      |              |      |
| Client ID: | Run ID: <b>HG03_140206A</b>     |          |         |               | SeqNo: <b>3524479</b> |               | Prep Date: <b>2/6/2014</b>              |      | DF: <b>1</b> |      |
| Analyte    | Result                          | PQL      | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Mercury    | 0.00529                         | 0.000200 | 0.005   | -0.000024     | 106                   | 80-124        |                                         |      |              |      |

|            |                                  |          |         |               |                       |               |                                         |       |              |      |
|------------|----------------------------------|----------|---------|---------------|-----------------------|---------------|-----------------------------------------|-------|--------------|------|
| <b>MSD</b> | Sample ID: <b>1402017-08CMSD</b> |          |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>2/6/2014 03:24 PM</b> |       |              |      |
| Client ID: | Run ID: <b>HG03_140206A</b>      |          |         |               | SeqNo: <b>3524480</b> |               | Prep Date: <b>2/6/2014</b>              |       | DF: <b>1</b> |      |
| Analyte    | Result                           | PQL      | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD  | RPD Limit    | Qual |
| Mercury    | 0.00525                          | 0.000200 | 0.005   | -0.000024     | 105                   | 80-124        | 0.00529                                 | 0.759 | 20           |      |

|            |                                  |          |         |               |                       |               |                                         |      |              |      |
|------------|----------------------------------|----------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>DUP</b> | Sample ID: <b>1402017-08CDUP</b> |          |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>2/6/2014 03:21 PM</b> |      |              |      |
| Client ID: | Run ID: <b>HG03_140206A</b>      |          |         |               | SeqNo: <b>3524478</b> |               | Prep Date: <b>2/6/2014</b>              |      | DF: <b>1</b> |      |
| Analyte    | Result                           | PQL      | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Mercury    | ND                               | 0.000200 |         |               |                       |               | -0.000024                               | 0    | 20           |      |

The following samples were analyzed in this batch:

1402100-01B

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** Navajo Refining Company  
**Work Order:** 1402100  
**Project:** Lovington Lea Refining-Skinner List

## QC BATCH REPORT

Batch ID: **76501**      Instrument ID **SV-6**      Method: **SW8270**

| MBLK                              |        | Sample ID: <b>SBLKW2-140205-76501</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>2/6/2014 10:17 PM</b> |           |              |
|-----------------------------------|--------|---------------------------------------|---------|---------------|------|-----------------------|---------------|-----------------------------------------|-----------|--------------|
| Client ID:                        |        | Run ID: <b>SV-6_140206D</b>           |         |               |      | SeqNo: <b>3526979</b> |               | Prep Date: <b>2/5/2014</b>              |           | DF: <b>1</b> |
| Analyte                           | Result | PQL                                   | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                    | RPD Limit | Qual         |
| 1,2-Dichlorobenzene               | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| 1,3-Dichlorobenzene               | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| 1,4-Dichlorobenzene               | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| 1-Methylnaphthalene               | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| 2,4-Dimethylphenol                | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| 2,4-Dinitrophenol                 | ND     | 1.0                                   |         |               |      |                       |               |                                         |           |              |
| 2-Methylphenol                    | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| 3&4-Methylphenol                  | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| 4-Nitrophenol                     | ND     | 1.0                                   |         |               |      |                       |               |                                         |           |              |
| Acenaphthylene                    | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| Anthracene                        | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| Benz(a)anthracene                 | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| Benzenethiol                      | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| Benzo(a)pyrene                    | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| Benzo(b)fluoranthene              | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| Benzo(k)fluoranthene              | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| Bis(2-ethylhexyl)phthalate        | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| Chrysene                          | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| Dibenz(a,h)acridine               | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| Dibenz(a,h)anthracene             | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| Diethyl phthalate                 | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| Dimethyl phthalate                | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| Di-n-butyl phthalate              | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| Fluoranthene                      | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| Fluorene                          | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| Indene                            | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| Indeno(1,2,3-cd)pyrene            | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| Naphthalene                       | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| Phenanthrene                      | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| Phenol                            | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| Pyrene                            | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| Pyridine                          | ND     | 1.0                                   |         |               |      |                       |               |                                         |           |              |
| Quinoline                         | ND     | 0.20                                  |         |               |      |                       |               |                                         |           |              |
| <i>Surr: 2,4,6-Tribromophenol</i> | 2.816  | 0.20                                  | 5       | 0             | 56.3 | 34-129                |               | 0                                       |           |              |
| <i>Surr: 2-Fluorobiphenyl</i>     | 3.705  | 0.20                                  | 5       | 0             | 74.1 | 40-125                |               | 0                                       |           |              |
| <i>Surr: 2-Fluorophenol</i>       | 3.687  | 0.20                                  | 5       | 0             | 73.7 | 20-120                |               | 0                                       |           |              |
| <i>Surr: 4-Terphenyl-d14</i>      | 3.697  | 0.20                                  | 5       | 0             | 73.9 | 40-135                |               | 0                                       |           |              |
| <i>Surr: Nitrobenzene-d5</i>      | 3.906  | 0.20                                  | 5       | 0             | 78.1 | 41-120                |               | 0                                       |           |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 1402100  
**Project:** Lovington Lea Refining-Skinner List

## QC BATCH REPORT

|                        |                           |                       |
|------------------------|---------------------------|-----------------------|
| Batch ID: <b>76501</b> | Instrument ID <b>SV-6</b> | Method: <b>SW8270</b> |
| <i>Surr: Phenol-d6</i> | 3.65                      | 0.20                  |

| LCS      Sample ID: <b>SLCSW2-140205-76501</b> |        |                             |         |               | Units: <b>µg/L</b>    |               | Analysis Date: <b>2/6/2014 10:36 PM</b> |      |              |      |
|------------------------------------------------|--------|-----------------------------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| Client ID:                                     |        | Run ID: <b>SV-6_140206D</b> |         |               | SeqNo: <b>3526980</b> |               | Prep Date: <b>2/5/2014</b>              |      | DF: <b>1</b> |      |
| Analyte                                        | Result | PQL                         | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| 1,2-Dichlorobenzene                            | 3.83   | 0.20                        | 5       | 0             | 76.6                  | 45-120        |                                         |      |              |      |
| 1,3-Dichlorobenzene                            | 3.758  | 0.20                        | 5       | 0             | 75.2                  | 45-120        |                                         |      |              |      |
| 1,4-Dichlorobenzene                            | 3.756  | 0.20                        | 5       | 0             | 75.1                  | 40-120        |                                         |      |              |      |
| 1-Methylnaphthalene                            | 3.838  | 0.20                        | 5       | 0             | 76.8                  | 45-120        |                                         |      |              |      |
| 2,4-Dimethylphenol                             | 3.584  | 0.20                        | 5       | 0             | 71.7                  | 35-120        |                                         |      |              |      |
| 2,4-Dinitrophenol                              | 3.413  | 1.0                         | 5       | 0             | 68.3                  | 15-120        |                                         |      |              |      |
| 2-Methylphenol                                 | 3.737  | 0.20                        | 5       | 0             | 74.7                  | 45-120        |                                         |      |              |      |
| 3&4-Methylphenol                               | 3.936  | 0.20                        | 5       | 0             | 78.7                  | 35-120        |                                         |      |              |      |
| 4-Nitrophenol                                  | 4.171  | 1.0                         | 5       | 0             | 83.4                  | 30-130        |                                         |      |              |      |
| Acenaphthylene                                 | 3.963  | 0.20                        | 5       | 0             | 79.3                  | 47-120        |                                         |      |              |      |
| Anthracene                                     | 3.98   | 0.20                        | 5       | 0             | 79.6                  | 45-120        |                                         |      |              |      |
| Benz(a)anthracene                              | 4.128  | 0.20                        | 5       | 0             | 82.6                  | 40-120        |                                         |      |              |      |
| Benzo(a)pyrene                                 | 4.488  | 0.20                        | 5       | 0             | 89.8                  | 45-120        |                                         |      |              |      |
| Benzo(b)fluoranthene                           | 4.757  | 0.20                        | 5       | 0             | 95.1                  | 50-120        |                                         |      |              |      |
| Benzo(k)fluoranthene                           | 4.638  | 0.20                        | 5       | 0             | 92.8                  | 45-127        |                                         |      |              |      |
| Bis(2-ethylhexyl)phthalate                     | 4.656  | 0.20                        | 5       | 0             | 93.1                  | 40-139        |                                         |      |              |      |
| Chrysene                                       | 4.058  | 0.20                        | 5       | 0             | 81.2                  | 43-120        |                                         |      |              |      |
| Dibenz(a,h)acridine                            | 2.707  | 0.20                        | 5       | 0             | 54.1                  | 35-140        |                                         |      |              |      |
| Dibenz(a,h)anthracene                          | 4.582  | 0.20                        | 5       | 0             | 91.6                  | 45-125        |                                         |      |              |      |
| Diethyl phthalate                              | 4.324  | 0.20                        | 5       | 0             | 86.5                  | 41-120        |                                         |      |              |      |
| Dimethyl phthalate                             | 4.194  | 0.20                        | 5       | 0             | 83.9                  | 40-122        |                                         |      |              |      |
| Di-n-butyl phthalate                           | 4.291  | 0.20                        | 5       | 0             | 85.8                  | 45-123        |                                         |      |              |      |
| Fluoranthene                                   | 4.002  | 0.20                        | 5       | 0             | 80                    | 45-125        |                                         |      |              |      |
| Fluorene                                       | 3.971  | 0.20                        | 5       | 0             | 79.4                  | 49-120        |                                         |      |              |      |
| Indeno(1,2,3-cd)pyrene                         | 4.115  | 0.20                        | 5       | 0             | 82.3                  | 41-128        |                                         |      |              |      |
| Naphthalene                                    | 3.807  | 0.20                        | 5       | 0             | 76.1                  | 45-120        |                                         |      |              |      |
| Phenanthrene                                   | 3.989  | 0.20                        | 5       | 0             | 79.8                  | 45-121        |                                         |      |              |      |
| Phenol                                         | 3.847  | 0.20                        | 5       | 0             | 76.9                  | 20-124        |                                         |      |              |      |
| Pyrene                                         | 4.218  | 0.20                        | 5       | 0             | 84.4                  | 40-130        |                                         |      |              |      |
| Pyridine                                       | 3.491  | 1.0                         | 5       | 0             | 69.8                  | 15-120        |                                         |      |              |      |
| Quinoline                                      | 3.856  | 0.20                        | 5       | 0             | 77.1                  | 45-120        |                                         |      |              |      |
| <i>Surr: 2,4,6-Tribromophenol</i>              | 3.427  | 0.20                        | 5       | 0             | 68.5                  | 34-129        |                                         | 0    |              |      |
| <i>Surr: 2-Fluorobiphenyl</i>                  | 3.789  | 0.20                        | 5       | 0             | 75.8                  | 40-125        |                                         | 0    |              |      |
| <i>Surr: 2-Fluorophenol</i>                    | 3.624  | 0.20                        | 5       | 0             | 72.5                  | 20-120        |                                         | 0    |              |      |
| <i>Surr: 4-Terphenyl-d14</i>                   | 3.766  | 0.20                        | 5       | 0             | 75.3                  | 40-135        |                                         | 0    |              |      |
| <i>Surr: Nitrobenzene-d5</i>                   | 4.114  | 0.20                        | 5       | 0             | 82.3                  | 41-120        |                                         | 0    |              |      |
| <i>Surr: Phenol-d6</i>                         | 3.782  | 0.20                        | 5       | 0             | 75.6                  | 20-120        |                                         | 0    |              |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 1402100  
**Project:** Lovington Lea Refining-Skinner List

## QC BATCH REPORT

Batch ID: **76501** Instrument ID **SV-6** Method: **SW8270**

| <b>LCS</b>                 | Sample ID: <b>SLCSW4-140205-76501</b> |      |         |               |      | Units: <b>µg/L</b>    | Analysis Date: <b>2/7/2014 11:45 AM</b> |              |           |      |
|----------------------------|---------------------------------------|------|---------|---------------|------|-----------------------|-----------------------------------------|--------------|-----------|------|
| Client ID:                 | Run ID: <b>SV-6_140206D</b>           |      |         |               |      | SeqNo: <b>3526983</b> | Prep Date: <b>2/5/2014</b>              | DF: <b>1</b> |           |      |
| Analyte                    | Result                                | PQL  | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value                           | %RPD         | RPD Limit | Qual |
| Dibenz(a,h)acridine        | 4.099                                 | 0.20 | 5       | 0             | 82   | 35-140                |                                         |              |           |      |
| Indene                     | 4.429                                 | 0.20 | 5       | 0             | 88.6 | 40-130                |                                         |              |           |      |
| Surr: 2,4,6-Tribromophenol | 3.264                                 | 0.20 | 5       | 0             | 65.3 | 34-129                | 0                                       |              |           |      |
| Surr: 2-Fluorobiphenyl     | 3.752                                 | 0.20 | 5       | 0             | 75   | 40-125                | 0                                       |              |           |      |
| Surr: 2-Fluorophenol       | 3.612                                 | 0.20 | 5       | 0             | 72.2 | 20-120                | 0                                       |              |           |      |
| Surr: 4-Terphenyl-d14      | 3.57                                  | 0.20 | 5       | 0             | 71.4 | 40-135                | 0                                       |              |           |      |
| Surr: Nitrobenzene-d5      | 3.878                                 | 0.20 | 5       | 0             | 77.6 | 41-120                | 0                                       |              |           |      |
| Surr: Phenol-d6            | 3.602                                 | 0.20 | 5       | 0             | 72   | 20-120                | 0                                       |              |           |      |

| <b>LCS</b>                 | Sample ID: <b>SLCSW3-140205-76501</b> |      |         |               |      | Units: <b>µg/L</b>    | Analysis Date: <b>2/10/2014 06:33 PM</b> |              |           |      |
|----------------------------|---------------------------------------|------|---------|---------------|------|-----------------------|------------------------------------------|--------------|-----------|------|
| Client ID:                 | Run ID: <b>SV-6_140206D</b>           |      |         |               |      | SeqNo: <b>3528054</b> | Prep Date: <b>2/5/2014</b>               | DF: <b>1</b> |           |      |
| Analyte                    | Result                                | PQL  | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value                            | %RPD         | RPD Limit | Qual |
| Benzenethiol               | 3.412                                 | 0.20 | 5       | 0             | 68.2 | 11-110                |                                          |              |           |      |
| Surr: 2,4,6-Tribromophenol | 3.101                                 | 0.20 | 5       | 0             | 62   | 34-129                | 0                                        |              |           |      |
| Surr: 2-Fluorobiphenyl     | 3.372                                 | 0.20 | 5       | 0             | 67.4 | 40-125                | 0                                        |              |           |      |
| Surr: 2-Fluorophenol       | 3.105                                 | 0.20 | 5       | 0             | 62.1 | 20-120                | 0                                        |              |           |      |
| Surr: 4-Terphenyl-d14      | 3.34                                  | 0.20 | 5       | 0             | 66.8 | 40-135                | 0                                        |              |           |      |
| Surr: Nitrobenzene-d5      | 3.489                                 | 0.20 | 5       | 0             | 69.8 | 41-120                | 0                                        |              |           |      |
| Surr: Phenol-d6            | 3.338                                 | 0.20 | 5       | 0             | 66.8 | 20-120                | 0                                        |              |           |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company  
 Work Order: 1402100  
 Project: Lovington Lea Refining-Skinner List

## QC BATCH REPORT

Batch ID: 76501 Instrument ID SV-6 Method: SW8270

| LCSD                       |        | Sample ID: SLCSDW2-140205-76501 |         |               |      | Units: µg/L    |               | Analysis Date: 2/6/2014 10:55 PM |           |       |
|----------------------------|--------|---------------------------------|---------|---------------|------|----------------|---------------|----------------------------------|-----------|-------|
| Client ID:                 |        | Run ID: SV-6_140206D            |         |               |      | SeqNo: 3526981 |               | Prep Date: 2/5/2014              |           | DF: 1 |
| Analyte                    | Result | PQL                             | SPK Val | SPK Ref Value | %REC | Control Limit  | RPD Ref Value | %RPD                             | RPD Limit | Qual  |
| 1,2-Dichlorobenzene        | 3.484  | 0.20                            | 5       | 0             | 69.7 | 45-120         | 3.83          | 9.46                             | 20        |       |
| 1,3-Dichlorobenzene        | 3.51   | 0.20                            | 5       | 0             | 70.2 | 45-120         | 3.758         | 6.84                             | 20        |       |
| 1,4-Dichlorobenzene        | 3.594  | 0.20                            | 5       | 0             | 71.9 | 40-120         | 3.756         | 4.4                              | 20        |       |
| 1-Methylnaphthalene        | 3.742  | 0.20                            | 5       | 0             | 74.8 | 45-120         | 3.838         | 2.54                             | 20        |       |
| 2,4-Dimethylphenol         | 3.498  | 0.20                            | 5       | 0             | 70   | 35-120         | 3.584         | 2.43                             | 20        |       |
| 2,4-Dinitrophenol          | 2.572  | 1.0                             | 5       | 0             | 51.4 | 15-120         | 3.413         | 28.1                             | 50        |       |
| 2-Methylphenol             | 3.597  | 0.20                            | 5       | 0             | 71.9 | 45-120         | 3.737         | 3.82                             | 20        |       |
| 3&4-Methylphenol           | 3.596  | 0.20                            | 5       | 0             | 71.9 | 35-120         | 3.936         | 9.02                             | 20        |       |
| 4-Nitrophenol              | 3.57   | 1.0                             | 5       | 0             | 71.4 | 30-130         | 4.171         | 15.5                             | 20        |       |
| Acenaphthylene             | 3.84   | 0.20                            | 5       | 0             | 76.8 | 47-120         | 3.963         | 3.17                             | 20        |       |
| Anthracene                 | 3.721  | 0.20                            | 5       | 0             | 74.4 | 45-120         | 3.98          | 6.74                             | 20        |       |
| Benz(a)anthracene          | 3.944  | 0.20                            | 5       | 0             | 78.9 | 40-120         | 4.128         | 4.56                             | 20        |       |
| Benzo(a)pyrene             | 4.233  | 0.20                            | 5       | 0             | 84.7 | 45-120         | 4.488         | 5.84                             | 20        |       |
| Benzo(b)fluoranthene       | 4.165  | 0.20                            | 5       | 0             | 83.3 | 50-120         | 4.757         | 13.3                             | 20        |       |
| Benzo(k)fluoranthene       | 4.725  | 0.20                            | 5       | 0             | 94.5 | 45-127         | 4.638         | 1.85                             | 20        |       |
| Bis(2-ethylhexyl)phthalate | 4.545  | 0.20                            | 5       | 0             | 90.9 | 40-139         | 4.656         | 2.39                             | 20        |       |
| Chrysene                   | 3.998  | 0.20                            | 5       | 0             | 80   | 43-120         | 4.058         | 1.5                              | 20        |       |
| Dibenz(a,h)acridine        | 2.546  | 0.20                            | 5       | 0             | 50.9 | 35-140         | 2.707         | 6.13                             | 20        |       |
| Dibenz(a,h)anthracene      | 4.337  | 0.20                            | 5       | 0             | 86.7 | 45-125         | 4.582         | 5.48                             | 20        |       |
| Diethyl phthalate          | 4.291  | 0.20                            | 5       | 0             | 85.8 | 41-120         | 4.324         | 0.775                            | 20        |       |
| Dimethyl phthalate         | 3.975  | 0.20                            | 5       | 0             | 79.5 | 40-122         | 4.194         | 5.38                             | 20        |       |
| Di-n-butyl phthalate       | 4.139  | 0.20                            | 5       | 0             | 82.8 | 45-123         | 4.291         | 3.61                             | 20        |       |
| Fluoranthene               | 3.744  | 0.20                            | 5       | 0             | 74.9 | 45-125         | 4.002         | 6.67                             | 20        |       |
| Fluorene                   | 3.914  | 0.20                            | 5       | 0             | 78.3 | 49-120         | 3.971         | 1.45                             | 20        |       |
| Indeno(1,2,3-cd)pyrene     | 3.837  | 0.20                            | 5       | 0             | 76.7 | 41-128         | 4.115         | 6.99                             | 20        |       |
| Naphthalene                | 3.696  | 0.20                            | 5       | 0             | 73.9 | 45-120         | 3.807         | 2.94                             | 20        |       |
| Phenanthrene               | 3.816  | 0.20                            | 5       | 0             | 76.3 | 45-121         | 3.989         | 4.45                             | 20        |       |
| Phenol                     | 3.537  | 0.20                            | 5       | 0             | 70.7 | 20-124         | 3.847         | 8.4                              | 20        |       |
| Pyrene                     | 4.241  | 0.20                            | 5       | 0             | 84.8 | 40-130         | 4.218         | 0.544                            | 20        |       |
| Pyridine                   | 3.286  | 1.0                             | 5       | 0             | 65.7 | 15-120         | 3.491         | 6.05                             | 20        |       |
| Quinoline                  | 3.742  | 0.20                            | 5       | 0             | 74.8 | 45-120         | 3.856         | 3                                | 20        |       |
| Surr: 2,4,6-Tribromophenol | 3.243  | 0.20                            | 5       | 0             | 64.9 | 34-129         | 3.427         | 5.52                             | 0         |       |
| Surr: 2-Fluorobiphenyl     | 3.587  | 0.20                            | 5       | 0             | 71.7 | 40-125         | 3.789         | 5.49                             | 0         |       |
| Surr: 2-Fluorophenol       | 3.273  | 0.20                            | 5       | 0             | 65.5 | 20-120         | 3.624         | 10.2                             | 0         |       |
| Surr: 4-Terphenyl-d14      | 3.716  | 0.20                            | 5       | 0             | 74.3 | 40-135         | 3.766         | 1.34                             | 0         |       |
| Surr: Nitrobenzene-d5      | 3.852  | 0.20                            | 5       | 0             | 77   | 41-120         | 4.114         | 6.59                             | 0         |       |
| Surr: Phenol-d6            | 3.43   | 0.20                            | 5       | 0             | 68.6 | 20-120         | 3.782         | 9.78                             | 0         |       |

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 1402100  
**Project:** Lovington Lea Refining-Skinner List

## QC BATCH REPORT

Batch ID: **76501** Instrument ID **SV-6** Method: **SW8270**

| LCSD                              |        | Sample ID: <b>SLCSDW4-140205-76501</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>2/7/2014 12:11 AM</b> |           |              |
|-----------------------------------|--------|----------------------------------------|---------|---------------|------|-----------------------|---------------|-----------------------------------------|-----------|--------------|
| Client ID:                        |        | Run ID: <b>SV-6_140206D</b>            |         |               |      | SeqNo: <b>3526982</b> |               | Prep Date: <b>2/5/2014</b>              |           | DF: <b>1</b> |
| Analyte                           | Result | PQL                                    | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                    | RPD Limit | Qual         |
| Dibenz(a,h)acridine               | 4.193  | 0.20                                   | 5       | 0             | 83.9 | 35-140                | 4.099         | 2.26                                    | 20        |              |
| Indene                            | 4.697  | 0.20                                   | 5       | 0             | 93.9 | 40-130                | 4.429         | 5.88                                    | 20        |              |
| <i>Surr: 2,4,6-Tribromophenol</i> | 2.723  | 0.20                                   | 5       | 0             | 54.5 | 34-129                | 3.264         | 18.1                                    | 0         |              |
| <i>Surr: 2-Fluorobiphenyl</i>     | 3.872  | 0.20                                   | 5       | 0             | 77.4 | 40-125                | 3.752         | 3.14                                    | 0         |              |
| <i>Surr: 2-Fluorophenol</i>       | 3.738  | 0.20                                   | 5       | 0             | 74.8 | 20-120                | 3.612         | 3.43                                    | 0         |              |
| <i>Surr: 4-Terphenyl-d14</i>      | 3.712  | 0.20                                   | 5       | 0             | 74.2 | 40-135                | 3.57          | 3.9                                     | 0         |              |
| <i>Surr: Nitrobenzene-d5</i>      | 3.938  | 0.20                                   | 5       | 0             | 78.8 | 41-120                | 3.878         | 1.54                                    | 0         |              |
| <i>Surr: Phenol-d6</i>            | 3.89   | 0.20                                   | 5       | 0             | 77.8 | 20-120                | 3.602         | 7.67                                    | 0         |              |

| LCSD                              |        | Sample ID: <b>SLCSDW3-140205-76501</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>2/7/2014 07:13 PM</b> |           |              |
|-----------------------------------|--------|----------------------------------------|---------|---------------|------|-----------------------|---------------|-----------------------------------------|-----------|--------------|
| Client ID:                        |        | Run ID: <b>SV-6_140206D</b>            |         |               |      | SeqNo: <b>3526985</b> |               | Prep Date: <b>2/5/2014</b>              |           | DF: <b>1</b> |
| Analyte                           | Result | PQL                                    | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                    | RPD Limit | Qual         |
| Benzenethiol                      | 3.267  | 0.20                                   | 5       | 0             | 65.3 | 11-110                | 3.412         | 4.34                                    | 30        |              |
| <i>Surr: 2,4,6-Tribromophenol</i> | 2.813  | 0.20                                   | 5       | 0             | 56.3 | 34-129                | 3.101         | 9.75                                    | 0         |              |
| <i>Surr: 2-Fluorobiphenyl</i>     | 3.356  | 0.20                                   | 5       | 0             | 67.1 | 40-125                | 3.372         | 0.478                                   | 0         |              |
| <i>Surr: 2-Fluorophenol</i>       | 2.981  | 0.20                                   | 5       | 0             | 59.6 | 20-120                | 3.105         | 4.08                                    | 0         |              |
| <i>Surr: 4-Terphenyl-d14</i>      | 3.17   | 0.20                                   | 5       | 0             | 63.4 | 40-135                | 3.34          | 5.24                                    | 0         |              |
| <i>Surr: Nitrobenzene-d5</i>      | 3.508  | 0.20                                   | 5       | 0             | 70.2 | 41-120                | 3.489         | 0.54                                    | 0         |              |
| <i>Surr: Phenol-d6</i>            | 3.212  | 0.20                                   | 5       | 0             | 64.2 | 20-120                | 3.338         | 3.85                                    | 0         |              |

The following samples were analyzed in this batch:

1402100-01D

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 1402100  
**Project:** Lovington Lea Refining-Skinner List

## QC BATCH REPORT

Batch ID: **R161039**      Instrument ID **VOA1**      Method: **SW8260**

| MBLK                               |        | Sample ID: <b>VBLKW-140206-R161039</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>2/6/2014 11:28 AM</b> |           |              |
|------------------------------------|--------|----------------------------------------|---------|---------------|------|-----------------------|---------------|-----------------------------------------|-----------|--------------|
| Client ID:                         |        | Run ID: <b>VOA1_140206B</b>            |         |               |      | SeqNo: <b>3525323</b> |               | Prep Date:                              |           | DF: <b>1</b> |
| Analyte                            | Result | PQL                                    | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                    | RPD Limit | Qual         |
| 1,1,1-Trichloroethane              | ND     | 5.0                                    |         |               |      |                       |               |                                         |           |              |
| 1,1-Dichloroethane                 | ND     | 5.0                                    |         |               |      |                       |               |                                         |           |              |
| 1,2-Dibromoethane                  | ND     | 5.0                                    |         |               |      |                       |               |                                         |           |              |
| 1,2-Dichloroethane                 | ND     | 5.0                                    |         |               |      |                       |               |                                         |           |              |
| 1,4-Dioxane                        | ND     | 100                                    |         |               |      |                       |               |                                         |           |              |
| 2-Butanone                         | ND     | 10                                     |         |               |      |                       |               |                                         |           |              |
| Benzene                            | ND     | 5.0                                    |         |               |      |                       |               |                                         |           |              |
| Carbon disulfide                   | ND     | 10                                     |         |               |      |                       |               |                                         |           |              |
| Chlorobenzene                      | ND     | 5.0                                    |         |               |      |                       |               |                                         |           |              |
| Chloroform                         | ND     | 5.0                                    |         |               |      |                       |               |                                         |           |              |
| Ethylbenzene                       | ND     | 5.0                                    |         |               |      |                       |               |                                         |           |              |
| Methyl tert-butyl ether            | ND     | 5.0                                    |         |               |      |                       |               |                                         |           |              |
| Styrene                            | ND     | 5.0                                    |         |               |      |                       |               |                                         |           |              |
| Tetrachloroethene                  | ND     | 5.0                                    |         |               |      |                       |               |                                         |           |              |
| Toluene                            | ND     | 5.0                                    |         |               |      |                       |               |                                         |           |              |
| Trichloroethene                    | ND     | 5.0                                    |         |               |      |                       |               |                                         |           |              |
| Xylenes, Total                     | ND     | 15                                     |         |               |      |                       |               |                                         |           |              |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 51.17  | 5.0                                    | 50      | 0             | 102  | 70-125                | 0             |                                         |           |              |
| <i>Surr: 4-Bromofluorobenzene</i>  | 49.66  | 5.0                                    | 50      | 0             | 99.3 | 72-125                | 0             |                                         |           |              |
| <i>Surr: Dibromofluoromethane</i>  | 50.74  | 5.0                                    | 50      | 0             | 101  | 71-125                | 0             |                                         |           |              |
| <i>Surr: Toluene-d8</i>            | 48.07  | 5.0                                    | 50      | 0             | 96.1 | 75-125                | 0             |                                         |           |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 1402100  
**Project:** Lovington Lea Refining-Skinner List

## QC BATCH REPORT

Batch ID: **R161039**      Instrument ID **VOA1**      Method: **SW8260**

| LCS                         |        |                      |         |               | Sample ID: VLCSW-140206-R161039 |               | Units: µg/L   |      | Analysis Date: 2/6/2014 10:13 AM |      |  |
|-----------------------------|--------|----------------------|---------|---------------|---------------------------------|---------------|---------------|------|----------------------------------|------|--|
| Client ID:                  |        | Run ID: VOA1_140206B |         |               | SeqNo: 3525322                  |               | Prep Date:    |      | DF: 1                            |      |  |
| Analyte                     | Result | PQL                  | SPK Val | SPK Ref Value | %REC                            | Control Limit | RPD Ref Value | %RPD | RPD Limit                        | Qual |  |
| 1,1,1-Trichloroethane       | 47.5   | 5.0                  | 50      | 0             | 95                              | 80-120        |               |      |                                  |      |  |
| 1,1-Dichloroethane          | 45.86  | 5.0                  | 50      | 0             | 91.7                            | 76-120        |               |      |                                  |      |  |
| 1,2-Dibromoethane           | 49.88  | 5.0                  | 50      | 0             | 99.8                            | 80-120        |               |      |                                  |      |  |
| 1,2-Dichloroethane          | 45.55  | 5.0                  | 50      | 0             | 91.1                            | 78-120        |               |      |                                  |      |  |
| 1,4-Dioxane                 | 1127   | 100                  | 1000    | 0             | 113                             | 50-158        |               |      |                                  |      |  |
| 2-Butanone                  | 102    | 10                   | 100     | 0             | 102                             | 58-132        |               |      |                                  |      |  |
| Benzene                     | 45.18  | 5.0                  | 50      | 0             | 90.4                            | 73-121        |               |      |                                  |      |  |
| Carbon disulfide            | 100.5  | 10                   | 100     | 0             | 101                             | 68-141        |               |      |                                  |      |  |
| Chlorobenzene               | 48.2   | 5.0                  | 50      | 0             | 96.4                            | 80-120        |               |      |                                  |      |  |
| Chloroform                  | 45.44  | 5.0                  | 50      | 0             | 90.9                            | 70-130        |               |      |                                  |      |  |
| Ethylbenzene                | 50.19  | 5.0                  | 50      | 0             | 100                             | 80-120        |               |      |                                  |      |  |
| Methyl tert-butyl ether     | 48.1   | 5.0                  | 50      | 0             | 96.2                            | 73-121        |               |      |                                  |      |  |
| Styrene                     | 47.03  | 5.0                  | 50      | 0             | 94.1                            | 80-120        |               |      |                                  |      |  |
| Tetrachloroethene           | 48.34  | 5.0                  | 50      | 0             | 96.7                            | 79-120        |               |      |                                  |      |  |
| Toluene                     | 54.18  | 5.0                  | 50      | 0             | 108                             | 80-120        |               |      |                                  |      |  |
| Trichloroethene             | 49.38  | 5.0                  | 50      | 0             | 98.8                            | 80-120        |               |      |                                  |      |  |
| Xylenes, Total              | 144.7  | 15                   | 150     | 0             | 96.4                            | 80-120        |               |      |                                  |      |  |
| Surr: 1,2-Dichloroethane-d4 | 48.54  | 5.0                  | 50      | 0             | 97.1                            | 70-125        |               | 0    |                                  |      |  |
| Surr: 4-Bromofluorobenzene  | 48.33  | 5.0                  | 50      | 0             | 96.7                            | 72-125        |               | 0    |                                  |      |  |
| Surr: Dibromofluoromethane  | 49.89  | 5.0                  | 50      | 0             | 99.8                            | 71-125        |               | 0    |                                  |      |  |
| Surr: Toluene-d8            | 49.01  | 5.0                  | 50      | 0             | 98                              | 75-125        |               | 0    |                                  |      |  |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 1402100  
**Project:** Lovington Lea Refining-Skinner List

## QC BATCH REPORT

Batch ID: **R161039** Instrument ID **VOA1** Method: **SW8260**

| MS                          | Sample ID: 1402097-14AMS |     |         |                | Units: µg/L |               | Analysis Date: 2/6/2014 01:06 PM |       |           |      |
|-----------------------------|--------------------------|-----|---------|----------------|-------------|---------------|----------------------------------|-------|-----------|------|
| Client ID:                  | Run ID: VOA1_140206B     |     |         | SeqNo: 3525327 |             | Prep Date:    |                                  | DF: 1 |           |      |
| Analyte                     | Result                   | PQL | SPK Val | SPK Ref Value  | %REC        | Control Limit | RPD Ref Value                    | %RPD  | RPD Limit | Qual |
| 1,1,1-Trichloroethane       | 40.74                    | 5.0 | 50      | 0              | 81.5        | 80-120        |                                  |       |           |      |
| 1,1-Dichloroethane          | 45.69                    | 5.0 | 50      | 1.99           | 87.4        | 76-120        |                                  |       |           |      |
| 1,2-Dibromoethane           | 49.4                     | 5.0 | 50      | 0              | 98.8        | 80-120        |                                  |       |           |      |
| 1,2-Dichloroethane          | 44.87                    | 5.0 | 50      | 0              | 89.7        | 78-120        |                                  |       |           |      |
| 1,4-Dioxane                 | 812.6                    | 100 | 1000    | 0              | 81.3        | 50-158        |                                  |       |           |      |
| 2-Butanone                  | 96.9                     | 10  | 100     | 0              | 96.9        | 58-132        |                                  |       |           |      |
| Benzene                     | 43.48                    | 5.0 | 50      | 0              | 87          | 73-121        |                                  |       |           |      |
| Carbon disulfide            | 85.88                    | 10  | 100     | 0              | 85.9        | 68-141        |                                  |       |           |      |
| Chlorobenzene               | 44.55                    | 5.0 | 50      | 0              | 89.1        | 80-120        |                                  |       |           |      |
| Chloroform                  | 45.97                    | 5.0 | 50      | 0              | 91.9        | 70-130        |                                  |       |           |      |
| Ethylbenzene                | 42.91                    | 5.0 | 50      | 0              | 85.8        | 80-120        |                                  |       |           |      |
| Methyl tert-butyl ether     | 30.99                    | 5.0 | 50      | 0              | 62          | 73-121        |                                  |       |           | S    |
| Styrene                     | 44.4                     | 5.0 | 50      | 0              | 88.8        | 80-120        |                                  |       |           |      |
| Tetrachloroethene           | 38.38                    | 5.0 | 50      | 0.7216         | 75.3        | 79-120        |                                  |       |           | S    |
| Toluene                     | 51.95                    | 5.0 | 50      | 0              | 104         | 80-120        |                                  |       |           |      |
| Trichloroethene             | 42.65                    | 5.0 | 50      | 0              | 85.3        | 80-120        |                                  |       |           |      |
| Xylenes, Total              | 128.9                    | 15  | 150     | 0              | 86          | 80-120        |                                  |       |           |      |
| Surr: 1,2-Dichloroethane-d4 | 48.77                    | 5.0 | 50      | 0              | 97.5        | 70-125        |                                  | 0     |           |      |
| Surr: 4-Bromofluorobenzene  | 48.7                     | 5.0 | 50      | 0              | 97.4        | 72-125        |                                  | 0     |           |      |
| Surr: Dibromofluoromethane  | 50.49                    | 5.0 | 50      | 0              | 101         | 71-125        |                                  | 0     |           |      |
| Surr: Toluene-d8            | 51.83                    | 5.0 | 50      | 0              | 104         | 75-125        |                                  | 0     |           |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** Navajo Refining Company  
**Work Order:** 1402100  
**Project:** Lovington Lea Refining-Skinner List

## QC BATCH REPORT

Batch ID: **R161039**      Instrument ID **VOA1**      Method: **SW8260**

| MSD                                |        | Sample ID: <b>1402097-14AMSD</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>2/6/2014 01:31 PM</b> |           |              |
|------------------------------------|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|-----------------------------------------|-----------|--------------|
| Client ID:                         |        | Run ID: <b>VOA1_140206B</b>      |         |               |      | SeqNo: <b>3525328</b> |               | Prep Date:                              |           | DF: <b>1</b> |
| Analyte                            | Result | PQL                              | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                    | RPD Limit | Qual         |
| 1,1,1-Trichloroethane              | 41.65  | 5.0                              | 50      | 0             | 83.3 | 80-120                | 40.74         | 2.21                                    | 20        |              |
| 1,1-Dichloroethane                 | 45.76  | 5.0                              | 50      | 1.99          | 87.5 | 76-120                | 45.69         | 0.15                                    | 20        |              |
| 1,2-Dibromoethane                  | 49.27  | 5.0                              | 50      | 0             | 98.5 | 80-120                | 49.4          | 0.264                                   | 20        |              |
| 1,2-Dichloroethane                 | 46.09  | 5.0                              | 50      | 0             | 92.2 | 78-120                | 44.87         | 2.7                                     | 20        |              |
| 1,4-Dioxane                        | 983.6  | 100                              | 1000    | 0             | 98.4 | 50-158                | 812.6         | 19                                      | 20        |              |
| 2-Butanone                         | 101.2  | 10                               | 100     | 0             | 101  | 58-132                | 96.9          | 4.33                                    | 20        |              |
| Benzene                            | 44.75  | 5.0                              | 50      | 0             | 89.5 | 73-121                | 43.48         | 2.88                                    | 20        |              |
| Carbon disulfide                   | 87.7   | 10                               | 100     | 0             | 87.7 | 68-141                | 85.88         | 2.1                                     | 20        |              |
| Chlorobenzene                      | 46.61  | 5.0                              | 50      | 0             | 93.2 | 80-120                | 44.55         | 4.52                                    | 20        |              |
| Chloroform                         | 47.37  | 5.0                              | 50      | 0             | 94.7 | 70-130                | 45.97         | 2.99                                    | 20        |              |
| Ethylbenzene                       | 47.7   | 5.0                              | 50      | 0             | 95.4 | 80-120                | 42.91         | 10.6                                    | 20        |              |
| Methyl tert-butyl ether            | 31.98  | 5.0                              | 50      | 0             | 64   | 73-121                | 30.99         | 3.14                                    | 20        | S            |
| Styrene                            | 47.88  | 5.0                              | 50      | 0             | 95.8 | 80-120                | 44.4          | 7.53                                    | 20        |              |
| Tetrachloroethene                  | 42.25  | 5.0                              | 50      | 0.7216        | 83.1 | 79-120                | 38.38         | 9.61                                    | 20        |              |
| Toluene                            | 54.01  | 5.0                              | 50      | 0             | 108  | 80-120                | 51.95         | 3.89                                    | 20        |              |
| Trichloroethene                    | 45.94  | 5.0                              | 50      | 0             | 91.9 | 80-120                | 42.65         | 7.44                                    | 20        |              |
| Xylenes, Total                     | 139.3  | 15                               | 150     | 0             | 92.9 | 78-121                | 128.9         | 7.74                                    | 20        |              |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 47.68  | 5.0                              | 50      | 0             | 95.4 | 70-125                | 48.77         | 2.26                                    | 20        |              |
| <i>Surr: 4-Bromofluorobenzene</i>  | 51.02  | 5.0                              | 50      | 0             | 102  | 72-125                | 48.7          | 4.65                                    | 20        |              |
| <i>Surr: Dibromofluoromethane</i>  | 49.16  | 5.0                              | 50      | 0             | 98.3 | 71-125                | 50.49         | 2.67                                    | 20        |              |
| <i>Surr: Toluene-d8</i>            | 50.38  | 5.0                              | 50      | 0             | 101  | 75-125                | 51.83         | 2.82                                    | 20        |              |

The following samples were analyzed in this batch:

1402100-01A

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 1402100  
**Project:** Lovington Lea Refining-Skinner List

## QC BATCH REPORT

Batch ID: **R161075** Instrument ID **Gall01** Method: **M4500CN E&G (Dissolve)**

|             |                                         |        |         |               |                       |               |                                         |      |              |      |
|-------------|-----------------------------------------|--------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>MBLK</b> | Sample ID: <b>WBLKW1-140207-R161075</b> |        |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>2/7/2014 05:37 PM</b> |      |              |      |
| Client ID:  | Run ID: <b>GALL01_140207E</b>           |        |         |               | SeqNo: <b>3525941</b> |               | Prep Date:                              |      | DF: <b>1</b> |      |
| Analyte     | Result                                  | PQL    | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Cyanide     | ND                                      | 0.0200 |         |               |                       |               |                                         |      |              |      |

|            |                                         |        |         |               |                       |               |                                         |      |              |      |
|------------|-----------------------------------------|--------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>LCS</b> | Sample ID: <b>WLCSW1-140207-R161075</b> |        |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>2/7/2014 05:38 PM</b> |      |              |      |
| Client ID: | Run ID: <b>GALL01_140207E</b>           |        |         |               | SeqNo: <b>3525942</b> |               | Prep Date:                              |      | DF: <b>1</b> |      |
| Analyte    | Result                                  | PQL    | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Cyanide    | 0.1924                                  | 0.0200 | 0.2     | 0             | 96.2                  | 80-120        |                                         |      |              |      |

|             |                                          |        |         |               |                       |               |                                         |      |              |      |
|-------------|------------------------------------------|--------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>LCSD</b> | Sample ID: <b>WLCSDW1-140207-R161075</b> |        |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>2/7/2014 05:39 PM</b> |      |              |      |
| Client ID:  | Run ID: <b>GALL01_140207E</b>            |        |         |               | SeqNo: <b>3525943</b> |               | Prep Date:                              |      | DF: <b>1</b> |      |
| Analyte     | Result                                   | PQL    | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Cyanide     | 0.1957                                   | 0.0200 | 0.2     | 0             | 97.8                  | 80-120        | 0.1924                                  | 1.71 | 20           |      |

|            |                                 |        |         |               |                       |               |                                         |      |              |      |
|------------|---------------------------------|--------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>MS</b>  | Sample ID: <b>1401100-01CMS</b> |        |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>2/7/2014 05:53 PM</b> |      |              |      |
| Client ID: | Run ID: <b>GALL01_140207E</b>   |        |         |               | SeqNo: <b>3525958</b> |               | Prep Date:                              |      | DF: <b>1</b> |      |
| Analyte    | Result                          | PQL    | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Cyanide    | 0.1844                          | 0.0200 | 0.2     | 0             | 92.2                  | 80-120        |                                         |      |              |      |

The following samples were analyzed in this batch:

1402100-01C

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining-Skinner List  
**WorkOrder:** 1402100

## **QUALIFIERS, ACRONYMS, UNITS**

| <b><u>Qualifier</u></b> | <b><u>Description</u></b>                                                 |
|-------------------------|---------------------------------------------------------------------------|
| *                       | Value exceeds Regulatory Limit                                            |
| a                       | Not accredited                                                            |
| B                       | Analyte detected in the associated Method Blank above the Reporting Limit |
| E                       | Value above quantitation range                                            |
| H                       | Analyzed outside of Holding Time                                          |
| J                       | Analyte detected below quantitation limit                                 |
| M                       | Manually integrated, see raw data for justification                       |
| n                       | Not offered for accreditation                                             |
| ND                      | Not Detected at the Reporting Limit                                       |
| O                       | Sample amount is > 4 times amount spiked                                  |
| P                       | Dual Column results percent difference > 40%                              |
| R                       | RPD above laboratory control limit                                        |
| S                       | Spike Recovery outside laboratory control limits                          |
| U                       | Analyzed but not detected above the MDL                                   |

| <b><u>Acronym</u></b> | <b><u>Description</u></b>           |
|-----------------------|-------------------------------------|
| DCS                   | Detectability Check Study           |
| DUP                   | Method Duplicate                    |
| LCS                   | Laboratory Control Sample           |
| LCSD                  | Laboratory Control Sample Duplicate |
| MBLK                  | Method Blank                        |
| MDL                   | Method Detection Limit              |
| MQL                   | Method Quantitation Limit           |
| MS                    | Matrix Spike                        |
| MSD                   | Matrix Spike Duplicate              |
| PDS                   | Post Digestion Spike                |
| PQL                   | Practical Quantitation Limit        |
| SD                    | Serial Dilution                     |
| SDL                   | Sample Detection Limit              |
| TRRP                  | Texas Risk Reduction Program        |

| <b><u>Units Reported</u></b> | <b><u>Description</u></b> |
|------------------------------|---------------------------|
| µg/L                         | Micrograms per Liter      |
| mg/L                         | Milligrams per Liter      |

## Sample Receipt Checklist

Client Name: **NAVAJO REFINING**

Date/Time Received: **31-Jan-14 08:53**

Work Order: **1402100**

Received by: **LOT**

Checklist completed by *Parash M. Ciga*  
eSignature

04-Feb-14

Date

Reviewed by: *Sonia West*  
eSignature

05-Feb-14

Date

Matrices: **Water**

Carrier name: **FedEx**

|                                                         |                                         |                             |                                                 |
|---------------------------------------------------------|-----------------------------------------|-----------------------------|-------------------------------------------------|
| Shipping container/cooler in good condition?            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/>            |
| Custody seals intact on shipping container/cooler?      | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/>            |
| Custody seals intact on sample bottles?                 | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Chain of custody present?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |                                                 |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |                                                 |
| Chain of custody agrees with sample labels?             | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |                                                 |
| Samples in proper container/bottle?                     | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |                                                 |
| Sample containers intact?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |                                                 |
| Sufficient sample volume for indicated test?            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |                                                 |
| All samples received within holding time?               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |                                                 |
| Container/Temp Blank temperature in compliance?         | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |                                                 |
| Temperature(s)/Thermometer(s):                          | <u>0.6c/0.6c C/U</u> <u>IR1</u>         |                             |                                                 |
| Cooler(s)/Kit(s):                                       | <u>5591</u>                             |                             |                                                 |
| Date/Time sample(s) sent to storage:                    | <u>2/4/14 16:10</u>                     |                             |                                                 |
| Water - VOA vials have zero headspace?                  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | No VOA vials submitted <input type="checkbox"/> |
| Water - pH acceptable upon receipt?                     | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | N/A <input type="checkbox"/>                    |
| pH adjusted?                                            | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | N/A <input checked="" type="checkbox"/>         |
| pH adjusted by:                                         | <u>-</u>                                |                             |                                                 |
| Login Notes:                                            |                                         |                             |                                                 |

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



Cincinnati, OH  
+1 513 733 5336  
Everett, WA  
+1 425 356 2600

Fort Collins, CO  
+1 970 490 1511  
Holland, MI  
+1 616 399 6070

## Chain of Custody Form

Page 1 of 1

COC ID: 96090

# 1402100

NAVAJO REFINING: Navajo Refining Company

Project: Lovington Lea Refining-Skinner List

### Environmental

ALS Project Manager:

| Customer Information |                    |                                     |      | Project Information |                                       |           |   |   |   |   |   |   |   |   |   |   |      |
|----------------------|--------------------|-------------------------------------|------|---------------------|---------------------------------------|-----------|---|---|---|---|---|---|---|---|---|---|------|
| Purchase Order       | Project Name       | Lovington Lea Refining-Skinner List |      | A                   | VOC (8260) Skinner List               |           |   |   |   |   |   |   |   |   |   |   |      |
| Work Order           | Project Number     | 128809                              |      | B                   | LL SVOC (8270) Skinner List           |           |   |   |   |   |   |   |   |   |   |   |      |
| Company Name         | Bill To Company    | Navajo Refining Company             |      | C                   | Total Metals (6020/7000) Skinner List |           |   |   |   |   |   |   |   |   |   |   |      |
| Send Report To       | Invoice Attn       | Robert Combs                        |      | D                   | Total Cyanide (9014)                  |           |   |   |   |   |   |   |   |   |   |   |      |
| Address              | Address            | 501 East Main                       |      | E                   |                                       |           |   |   |   |   |   |   |   |   |   |   |      |
| City/State/Zip       | City/State/Zip     | Artesia, NM 88211                   |      | F                   |                                       |           |   |   |   |   |   |   |   |   |   |   |      |
| Phone                | Phone              | (575) 748-6733                      |      | G                   |                                       |           |   |   |   |   |   |   |   |   |   |   |      |
| Fax                  | Fax                | (575) 746-5421                      |      | H                   |                                       |           |   |   |   |   |   |   |   |   |   |   |      |
| e-Mail Address       | e-Mail Address     |                                     |      | I                   |                                       |           |   |   |   |   |   |   |   |   |   |   |      |
|                      |                    |                                     |      | J                   |                                       |           |   |   |   |   |   |   |   |   |   |   |      |
| No.                  | Sample Description | Date                                | Time | Matrix              | Pres.                                 | # Bottles | A | B | C | D | E | F | G | H | I | J | Hold |
| 1                    | East water well    | 1-30-14                             | 8:30 | L                   | -                                     | 7         |   |   |   |   |   |   |   |   |   |   |      |
| 2                    |                    |                                     |      |                     |                                       |           |   |   |   |   |   |   |   |   |   |   |      |
| 3                    |                    |                                     |      |                     |                                       |           |   |   |   |   |   |   |   |   |   |   |      |
| 4                    |                    |                                     |      |                     |                                       |           |   |   |   |   |   |   |   |   |   |   |      |
| 5                    |                    |                                     |      |                     |                                       |           |   |   |   |   |   |   |   |   |   |   |      |
| 6                    |                    |                                     |      |                     |                                       |           |   |   |   |   |   |   |   |   |   |   |      |
| 7                    |                    |                                     |      |                     |                                       |           |   |   |   |   |   |   |   |   |   |   |      |
| 8                    |                    |                                     |      |                     |                                       |           |   |   |   |   |   |   |   |   |   |   |      |
| 9                    |                    |                                     |      |                     |                                       |           |   |   |   |   |   |   |   |   |   |   |      |
| 10                   |                    |                                     |      |                     |                                       |           |   |   |   |   |   |   |   |   |   |   |      |

|                                                                                                                                                                              |  |                           |  |                                                                                                                                                           |  |                   |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|---------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------|--|
| Sampler(s) Please Print & Sign                                                                                                                                               |  | Shipment Method           |  | Required Turnaround Time: (Check Box)                                                                                                                     |  | Results Due Date: |  |
| Andres Sanchez                                                                                                                                                               |  | Fed. Ex                   |  | <input checked="" type="checkbox"/> Std 10 WK Days <input type="checkbox"/> 5 WK Days <input type="checkbox"/> 2 WK Days <input type="checkbox"/> 24 Hour |  |                   |  |
| Relinquished by:                                                                                                                                                             |  | Received by:              |  | Notes: 10 Day TAT.                                                                                                                                        |  |                   |  |
| Date: 1-30-14                                                                                                                                                                |  | Time: 9:30                |  |                                                                                                                                                           |  |                   |  |
| Relinquished by:                                                                                                                                                             |  | Received by (Laboratory): |  | Cooler ID                                                                                                                                                 |  | Cooler Temp.      |  |
| Date:                                                                                                                                                                        |  | Time:                     |  | 13114                                                                                                                                                     |  | 0853              |  |
| Logged by (Laboratory):                                                                                                                                                      |  | Checked by (Laboratory):  |  |                                                                                                                                                           |  |                   |  |
| Date:                                                                                                                                                                        |  | Time:                     |  |                                                                                                                                                           |  |                   |  |
| Preservative Key: 1-HCl 2-HNO <sub>3</sub> 3-H <sub>2</sub> SO <sub>4</sub> 4-NaOH 5-Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> 6-NaHSO <sub>4</sub> 7-Other 8-4°C 9-5035 |  |                           |  |                                                                                                                                                           |  |                   |  |

|                                     |  |                          |  |                           |  |                          |  |                          |  |
|-------------------------------------|--|--------------------------|--|---------------------------|--|--------------------------|--|--------------------------|--|
| QC Package: (Check One Box Below)   |  | Level II Std OC          |  | Level III Std QC/Raw Data |  | Level IV SW846/CLP       |  | Other / EDD              |  |
| <input checked="" type="checkbox"/> |  | <input type="checkbox"/> |  | <input type="checkbox"/>  |  | <input type="checkbox"/> |  | <input type="checkbox"/> |  |

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.  
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.  
3. The Chain of Custody is a legal document. All information must be completed accurately.

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|                                                                                                                                                                                                                      |                                                                      |                        |                      |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------|------------------------|----------------------|
|  <b>ALS Environmental</b><br>10450 Stancliff Rd., Suite 210<br>Houston, Texas 77099<br>Tel. +1 281 530 5656<br>Fax. +1 281 530 5887 | <b>CUSTODY SEAL</b>                                                  |                        | Seal Broken By:      |
|                                                                                                                                                                                                                      | Date: <u>1-30-14</u><br>Name: <u>Andrew S</u><br>Company: <u>NRC</u> | Time: <u>8:30 a.m.</u> | Date: <u>1-31-13</u> |



**FedEx**  
Express

**MPS Label**

8989 8549 3632 8989 8549 3632  
 FedEx Tracking Number for Shipper Form ID No. 0260

2A 14 MUR 4 3063

**1 From** Please print and press hard.  
 Date: 1/30/14 Sender's FedEx Account Number: 1129-9018-6  
 Sender's Name: CATHY TRUETT Phone: (575) 396-5821  
 Company: NAVAJO REFINING CO (LEA)  
 Address: 7406 S MAIN ST  
 City: LOVINGTON State: NM ZIP: 88260

**2 Your Internal Billing Reference** MONTHLY SAMPLES

**3 To** Recipient's Name: ALS Phone: 281-530-5656

Company: ALS

Address: 10450 STANDCLIFF RD  
 We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address: STE 210  
 Use this line for the HOLD location address or for continuation of your shipping address.  
 City: HOUSTON State: TX ZIP: 77099-4338

0447203992

**4 Express Package Service** \*To most locations.  
 NOTE: Service and/or has changed. Please select carefully.

☐ FedEx First Overnight  
 Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.  
☒ FedEx Priority Overnight  
 Next business morning. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.  
☐ FedEx Standard Overnight  
 Next business afternoon. Saturday Delivery NOT available.

☐ NEW FedEx 2Day A.M.  
 Second business morning. Saturday Delivery NOT available.  
☐ FedEx 2Day  
 Second business afternoon. Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.  
☐ FedEx Express Saver  
 Third business day. Saturday Delivery NOT available.

**5 Packaging** \*Declared value limit \$500.  
☐ FedEx Envelope\* ☐ FedEx Pak\* ☐ FedEx Box ☐ FedEx Tube ☒ Other

**6 Special Handling and Delivery-Signature Options**  
☐ SATURDAY Delivery  
 NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Saver.  
☐ No Signature Required  
 Package may be left without obtaining a signature for delivery.  
☐ Direct Signature  
 Someone at recipient's address may sign for delivery. Fee applies.  
☐ Indirect Signature  
 If no one is available at recipient's address, someone at a neighboring address may sign for delivery. For residential deliveries only. Fee applies.  
 Does this shipment contain dangerous goods?  
☒ No ☐ Yes  
 Yes: As per attached Shipper's Declaration. Shipper's Declaration not required.  
☐ Dry Ice  
 Dry Ice, 9, UN 1845 x kg  
☐ Cargo Aircraft Only

**Payment Bill to:** Enter FedEx Acct. No. or Credit Card No. below.  
☐ Sender ☒ Recipient ☐ Third Party ☐ Credit Card ☐ Cash/Check  
 FedEx Acct. No. Credit Card No. 2470-7613-1 Exp. Date  
 Total Packages Total Weight Total Declared Value\*

\*Our liability is limited to \$100 unless you declare a higher value. See back for details. By using this Airbill you agree to the service conditions on the back of this Airbill and in the current FedEx Service Guide, including items that limit our liability.

611

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13-Mar-2014

Robert Combs  
Navajo Refining Company  
PO Box 1490  
Artesia, NM 88211-1490

Tel: (575) 746-5382  
Fax: (575) 746-5421

Re: Navajo Lea Refinery Semi-Annual

Work Order: **14021211**

Dear Robert,

ALS Environmental received 18 samples on 26-Feb-2014 09:45 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 140.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in black ink that reads "Sonia West".

Electronically approved by: Jumoke M. Lawal

Sonia West  
Project Manager



Certificate No: T104704231-13-12

ADDRESS 10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 | PHONE (281) 530-5656 | FAX (281) 530-5887

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Environmental

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RIGHT SOLUTIONS RIGHT PARTNER



**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Work Order:** 14021211

## Work Order Sample Summary

| <u>Lab Samp ID</u> | <u>Client Sample ID</u> | <u>Matrix</u> | <u>Tag Number</u> | <u>Collection Date</u> | <u>Date Received</u> | <u>Hold</u>                         |
|--------------------|-------------------------|---------------|-------------------|------------------------|----------------------|-------------------------------------|
| 14021211-01        | MW-28                   | Groundwater   |                   | 2/24/2014 15:45        | 2/26/2014 09:45      | <input type="checkbox"/>            |
| 14021211-02        | MW-15                   | Groundwater   |                   | 2/24/2014 17:15        | 2/26/2014 09:45      | <input type="checkbox"/>            |
| 14021211-03        | Dup-1                   | Groundwater   |                   | 2/24/2014 17:15        | 2/26/2014 09:45      | <input type="checkbox"/>            |
| 14021211-04        | MW-16                   | Groundwater   |                   | 2/25/2014 15:10        | 2/26/2014 09:45      | <input type="checkbox"/>            |
| 14021211-05        | MW-4                    | Groundwater   |                   | 2/25/2014 16:45        | 2/26/2014 09:45      | <input type="checkbox"/>            |
| 14021211-06        | MW-2                    | Groundwater   |                   | 2/25/2014 18:05        | 2/26/2014 09:45      | <input type="checkbox"/>            |
| 14021211-07        | AC-2-25-14-A            | Groundwater   |                   | 2/25/2014 18:25        | 2/26/2014 09:45      | <input checked="" type="checkbox"/> |
| 14021211-08        | MW-5                    | Groundwater   |                   | 2/25/2014 08:44        | 2/26/2014 09:45      | <input type="checkbox"/>            |
| 14021211-09        | MW-21                   | Groundwater   |                   | 2/25/2014 11:24        | 2/26/2014 09:45      | <input type="checkbox"/>            |
| 14021211-10        | MW-22                   | Groundwater   |                   | 2/25/2014 13:35        | 2/26/2014 09:45      | <input type="checkbox"/>            |
| 14021211-11        | MW-23                   | Groundwater   |                   | 2/25/2014 14:58        | 2/26/2014 09:45      | <input type="checkbox"/>            |
| 14021211-12        | MW-20                   | Groundwater   |                   | 2/26/2014 16:40        | 2/26/2014 09:45      | <input type="checkbox"/>            |
| 14021211-13        | MW-26                   | Groundwater   |                   | 2/26/2014 10:55        | 2/26/2014 09:45      | <input type="checkbox"/>            |
| 14021211-14        | AC-2-26-14-B            | Groundwater   |                   | 2/26/2014 13:15        | 2/26/2014 09:45      | <input checked="" type="checkbox"/> |
| 14021211-15        | MW-10                   | Groundwater   |                   | 2/26/2014 08:50        | 2/26/2014 09:45      | <input type="checkbox"/>            |
| 14021211-16        | MW-9                    | Groundwater   |                   | 2/26/2014 10:25        | 2/26/2014 09:45      | <input type="checkbox"/>            |
| 14021211-17        | MW-3                    | Groundwater   |                   | 2/26/2014 11:43        | 2/26/2014 09:45      | <input type="checkbox"/>            |
| 14021211-18        | TB-2-26-13              | Water         |                   | 2/24/2014              | 2/26/2014 09:45      | <input type="checkbox"/>            |



---

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Work Order:** 14021211

---

**Case Narrative**

As per client's email on February 28, 2014, samples AC-2-25-14-A & AC-2-25-14-B were cancelled and put on hold.

Sample received outside method holding time for pH. pH is an immediate test. Sample results are flagged with an "H" qualifier.

Batch 77079, Dissolved Metals 6020, Sample MW-26 (14021211-13D): MS/MSD recoveries are outside of the control limits due to matrix interference.

Batch 77075, Semivolatile Organics 8270, Sample SLCSDW1-140228: The LCSD RPD was above the control limits for 4-nitroaniline and Pentachlorophenol. The LCS and LCSD recoveries were within the control limits.

Batch 77075, Semivolatile Organics 8270, Sample MW-26 (14021211-13F): The MS and/or MSD recoveries were outside of the control limits for 2,6-dinitrotoluene due to matrix interference. The LCS and LCSD recoveries were within the control limits.

Batch 77075, Semivolatile Organics 8270, Sample MW-26 (14021211-13F): The MSD RPD for 3,3'-dichlorobenzidine was outside of the control limits. The MS/MSD recoveries were within the control limits.

Batch R162237, Volatile Organics 8260, Sample MW-3 (14021211-17A): MS/MSD recoveries and RPD's are outside of the control limits for several compounds due to matrix interference.

Batch R162751, Anions, Sample MW-26 (14021211-13E): MS/MSD recoveries for Chloride and Sulfate were outside of the control limits due to matrix interference.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-28  
**Collection Date:** 2/24/2014 03:45 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-01  
**Matrix:** GROUNDWATER

| Analyses                       | Result  | Qual | Report Limit       | Units | Dilution Factor           | Date Analyzed                      |
|--------------------------------|---------|------|--------------------|-------|---------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |         |      |                    |       |                           |                                    |
| Mercury                        | ND      |      | SW7470<br>0.000200 | mg/L  | Prep Date: 2/28/2014<br>1 | Analyst: OFO<br>2/28/2014 05:43 PM |
| <b>DISSOLVED METALS</b>        |         |      |                    |       |                           |                                    |
| Aluminum                       | ND      |      | SW6020<br>0.0100   | mg/L  | Prep Date: 2/28/2014<br>1 | Analyst: SKS<br>2/28/2014 03:00 PM |
| Arsenic                        | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:00 PM                 |
| Barium                         | 0.0836  |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:00 PM                 |
| Boron                          | 0.180   |      | 0.0200             | mg/L  | 1                         | 2/28/2014 03:00 PM                 |
| Cadmium                        | ND      |      | 0.00200            | mg/L  | 1                         | 2/28/2014 03:00 PM                 |
| Calcium                        | 105     |      | 0.500              | mg/L  | 1                         | 2/28/2014 03:00 PM                 |
| Chromium                       | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:00 PM                 |
| Cobalt                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:00 PM                 |
| Copper                         | 0.00514 |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:00 PM                 |
| Iron                           | ND      |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:00 PM                 |
| Lead                           | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:00 PM                 |
| Magnesium                      | 12.5    |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:00 PM                 |
| Manganese                      | 0.00509 |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:00 PM                 |
| Molybdenum                     | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:00 PM                 |
| Nickel                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:00 PM                 |
| Potassium                      | 1.95    |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:00 PM                 |
| Selenium                       | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:00 PM                 |
| Silver                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:00 PM                 |
| Sodium                         | 40.1    |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:00 PM                 |
| Uranium                        | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:00 PM                 |
| Zinc                           | 0.00674 |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:00 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |         |      |                    |       |                           |                                    |
| 1,1'-Biphenyl                  | ND      |      | SW8270<br>0.20     | µg/L  | Prep Date: 2/28/2014<br>1 | Analyst: LG<br>2/28/2014 11:41 PM  |
| 1-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 2/28/2014 11:41 PM                 |
| 2,4,5-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                         | 2/28/2014 11:41 PM                 |
| 2,4,6-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                         | 2/28/2014 11:41 PM                 |
| 2,4-Dichlorophenol             | ND      |      | 0.20               | µg/L  | 1                         | 2/28/2014 11:41 PM                 |
| 2,4-Dimethylphenol             | ND      |      | 0.20               | µg/L  | 1                         | 2/28/2014 11:41 PM                 |
| 2,4-Dinitrophenol              | ND      |      | 1.0                | µg/L  | 1                         | 2/28/2014 11:41 PM                 |
| 2,4-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                         | 2/28/2014 11:41 PM                 |
| 2,6-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                         | 2/28/2014 11:41 PM                 |
| 2-Chloronaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 2/28/2014 11:41 PM                 |
| 2-Chlorophenol                 | ND      |      | 0.20               | µg/L  | 1                         | 2/28/2014 11:41 PM                 |
| 2-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 2/28/2014 11:41 PM                 |
| 2-Methylphenol                 | ND      |      | 0.20               | µg/L  | 1                         | 2/28/2014 11:41 PM                 |
| 2-Nitroaniline                 | ND      |      | 0.20               | µg/L  | 1                         | 2/28/2014 11:41 PM                 |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-28  
**Collection Date:** 2/24/2014 03:45 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-01  
**Matrix:** GROUNDWATER

| Analyses                    | Result      | Qual | Report Limit | Units       | Dilution Factor | Date Analyzed      |
|-----------------------------|-------------|------|--------------|-------------|-----------------|--------------------|
| 2-Nitrophenol               | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| 3&4-Methylphenol            | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| 3,3'-Dichlorobenzidine      | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| 3-Nitroaniline              | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| 4,6-Dinitro-2-methylphenol  | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| 4-Bromophenyl phenyl ether  | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| 4-Chloro-3-methylphenol     | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| 4-Chloroaniline             | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| 4-Chlorophenyl phenyl ether | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| 4-Nitroaniline              | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| 4-Nitrophenol               | ND          |      | 1.0          | µg/L        | 1               | 2/28/2014 11:41 PM |
| Acenaphthene                | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| Acenaphthylene              | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| Acetophenone                | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| Anthracene                  | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| Atrazine                    | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| Benz(a)anthracene           | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| Benzaldehyde                | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| Benzo(a)pyrene              | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| Benzo(b)fluoranthene        | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| Benzo(g,h,i)perylene        | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| Benzo(k)fluoranthene        | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| Bis(2-chloroethoxy)methane  | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| Bis(2-chloroethyl)ether     | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| Bis(2-chloroisopropyl)ether | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| Bis(2-ethylhexyl)phthalate  | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| Butyl benzyl phthalate      | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| Caprolactam                 | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| Carbazole                   | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| Chrysene                    | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| Dibenz(a,h)anthracene       | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| Dibenzofuran                | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| <b>Diethyl phthalate</b>    | <b>0.24</b> |      | <b>0.20</b>  | <b>µg/L</b> | 1               | 2/28/2014 11:41 PM |
| Dimethyl phthalate          | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| Di-n-butyl phthalate        | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| Di-n-octyl phthalate        | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| Fluoranthene                | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| Fluorene                    | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| Hexachlorobenzene           | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |
| Hexachlorobutadiene         | ND          |      | 0.20         | µg/L        | 1               | 2/28/2014 11:41 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-28  
**Collection Date:** 2/24/2014 03:45 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-01  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed      |
|----------------------------|--------|------|---------------|-------|--------------------|--------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 2/28/2014 11:41 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 2/28/2014 11:41 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 2/28/2014 11:41 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 2/28/2014 11:41 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 2/28/2014 11:41 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 2/28/2014 11:41 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 2/28/2014 11:41 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 2/28/2014 11:41 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 2/28/2014 11:41 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 2/28/2014 11:41 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 2/28/2014 11:41 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 2/28/2014 11:41 PM |
| Surr: 2,4,6-Tribromophenol | 73.6   |      | 34-129        | %REC  | 1                  | 2/28/2014 11:41 PM |
| Surr: 2-Fluorobiphenyl     | 69.2   |      | 40-125        | %REC  | 1                  | 2/28/2014 11:41 PM |
| Surr: 2-Fluorophenol       | 61.8   |      | 20-120        | %REC  | 1                  | 2/28/2014 11:41 PM |
| Surr: 4-Terphenyl-d14      | 78.7   |      | 40-135        | %REC  | 1                  | 2/28/2014 11:41 PM |
| Surr: Nitrobenzene-d5      | 61.9   |      | 41-120        | %REC  | 1                  | 2/28/2014 11:41 PM |
| Surr: Phenol-d6            | 59.3   |      | 20-120        | %REC  | 1                  | 2/28/2014 11:41 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                    |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:48 PM  |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:48 PM  |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:48 PM  |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:48 PM  |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:48 PM  |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:48 PM  |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:48 PM  |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:48 PM  |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:48 PM  |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:48 PM  |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 01:48 PM  |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 01:48 PM  |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:48 PM  |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 01:48 PM  |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 01:48 PM  |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:48 PM  |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:48 PM  |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:48 PM  |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:48 PM  |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 01:48 PM  |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:48 PM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-28  
**Collection Date:** 2/24/2014 03:45 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-01  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor     | Date Analyzed      |
|------------------------------------|--------|------|----------------|-------|---------------------|--------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 01:48 PM  |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 01:48 PM  |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 01:48 PM  |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 01:48 PM  |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 01:48 PM  |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 01:48 PM  |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 01:48 PM  |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 01:48 PM  |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 01:48 PM  |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1                   | 3/2/2014 01:48 PM  |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 01:48 PM  |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1                   | 3/2/2014 01:48 PM  |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 01:48 PM  |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 01:48 PM  |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 01:48 PM  |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 01:48 PM  |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 01:48 PM  |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 01:48 PM  |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 01:48 PM  |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 01:48 PM  |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 01:48 PM  |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 01:48 PM  |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 01:48 PM  |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1                   | 3/2/2014 01:48 PM  |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1                   | 3/2/2014 01:48 PM  |
| Surr: 1,2-Dichloroethane-d4        | 108    |      | 70-125         | %REC  | 1                   | 3/2/2014 01:48 PM  |
| Surr: 4-Bromofluorobenzene         | 96.1   |      | 72-125         | %REC  | 1                   | 3/2/2014 01:48 PM  |
| Surr: Dibromofluoromethane         | 102    |      | 71-125         | %REC  | 1                   | 3/2/2014 01:48 PM  |
| Surr: Toluene-d8                   | 96.0   |      | 75-125         | %REC  | 1                   | 3/2/2014 01:48 PM  |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       | <b>Analyst: JKP</b> |                    |
| Chloride                           | 71.7   |      | 0.500          | mg/L  | 1                   | 3/11/2014 10:58 AM |
| Fluoride                           | 1.30   |      | 0.100          | mg/L  | 1                   | 3/11/2014 10:58 AM |
| Sulfate                            | 74.2   |      | 0.500          | mg/L  | 1                   | 3/11/2014 10:58 AM |
| Nitrate/Nitrite (as N)             | 2.60   |      | 1.00           | mg/L  | 5                   | 3/10/2014 12:45 AM |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       | <b>Analyst: PPM</b> |                    |
| Alkalinity, Bicarbonate (As CaCO3) | 244    |      | 6.00           | mg/L  | 1                   | 2/27/2014 08:42 PM |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 6.00           | mg/L  | 1                   | 2/27/2014 08:42 PM |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 6.00           | mg/L  | 1                   | 2/27/2014 08:42 PM |
| Alkalinity, Total (As CaCO3)       | 244    |      | 6.00           | mg/L  | 1                   | 2/27/2014 08:42 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

## ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-28  
**Collection Date:** 2/24/2014 03:45 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-01  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 793    |      | 5.00              | µmhos/cm | 1               | 2/27/2014 08:42 PM  |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 7.31   | H    | 0.100             | pH Units | 1               | 2/27/2014 08:42 PM  |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>JBA</b> |
| Total Dissolved Solids (Residue, Filterable) | 480    |      | 10.0              | mg/L     | 1               | 2/28/2014 11:00 AM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-15  
**Collection Date:** 2/24/2014 05:15 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-02  
**Matrix:** GROUNDWATER

| Analyses                       | Result  | Qual | Report Limit       | Units | Dilution Factor           | Date Analyzed                      |
|--------------------------------|---------|------|--------------------|-------|---------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |         |      |                    |       |                           |                                    |
| Mercury                        | ND      |      | SW7470<br>0.000200 | mg/L  | Prep Date: 2/28/2014<br>1 | Analyst: OFO<br>2/28/2014 05:44 PM |
| <b>DISSOLVED METALS</b>        |         |      |                    |       |                           |                                    |
| Aluminum                       | ND      |      | SW6020<br>0.0100   | mg/L  | Prep Date: 2/28/2014<br>1 | Analyst: SKS<br>2/28/2014 03:02 PM |
| Arsenic                        | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:02 PM                 |
| Barium                         | 0.178   |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:02 PM                 |
| Boron                          | 0.175   |      | 0.0200             | mg/L  | 1                         | 2/28/2014 03:02 PM                 |
| Cadmium                        | ND      |      | 0.00200            | mg/L  | 1                         | 2/28/2014 03:02 PM                 |
| Calcium                        | 127     |      | 0.500              | mg/L  | 1                         | 2/28/2014 03:02 PM                 |
| Chromium                       | 0.00910 |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:02 PM                 |
| Cobalt                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:02 PM                 |
| Copper                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:02 PM                 |
| Iron                           | ND      |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:02 PM                 |
| Lead                           | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:02 PM                 |
| Magnesium                      | 16.7    |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:02 PM                 |
| Manganese                      | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:02 PM                 |
| Molybdenum                     | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:02 PM                 |
| Nickel                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:02 PM                 |
| Potassium                      | 3.31    |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:02 PM                 |
| Selenium                       | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:02 PM                 |
| Silver                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:02 PM                 |
| Sodium                         | 109     |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:02 PM                 |
| Uranium                        | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:02 PM                 |
| Zinc                           | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:02 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |         |      |                    |       |                           |                                    |
| 1,1'-Biphenyl                  | ND      |      | SW8270<br>0.20     | µg/L  | Prep Date: 2/28/2014<br>1 | Analyst: LG<br>3/1/2014 12:01 AM   |
| 1-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/1/2014 12:01 AM                  |
| 2,4,5-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                         | 3/1/2014 12:01 AM                  |
| 2,4,6-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                         | 3/1/2014 12:01 AM                  |
| 2,4-Dichlorophenol             | ND      |      | 0.20               | µg/L  | 1                         | 3/1/2014 12:01 AM                  |
| 2,4-Dimethylphenol             | ND      |      | 0.20               | µg/L  | 1                         | 3/1/2014 12:01 AM                  |
| 2,4-Dinitrophenol              | ND      |      | 1.0                | µg/L  | 1                         | 3/1/2014 12:01 AM                  |
| 2,4-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                         | 3/1/2014 12:01 AM                  |
| 2,6-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                         | 3/1/2014 12:01 AM                  |
| 2-Chloronaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/1/2014 12:01 AM                  |
| 2-Chlorophenol                 | ND      |      | 0.20               | µg/L  | 1                         | 3/1/2014 12:01 AM                  |
| 2-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/1/2014 12:01 AM                  |
| 2-Methylphenol                 | ND      |      | 0.20               | µg/L  | 1                         | 3/1/2014 12:01 AM                  |
| 2-Nitroaniline                 | ND      |      | 0.20               | µg/L  | 1                         | 3/1/2014 12:01 AM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-15  
**Collection Date:** 2/24/2014 05:15 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-02  
**Matrix:** GROUNDWATER

| Analyses                    | Result      | Qual | Report Limit | Units       | Dilution Factor | Date Analyzed     |
|-----------------------------|-------------|------|--------------|-------------|-----------------|-------------------|
| 2-Nitrophenol               | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| 3&4-Methylphenol            | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| 3,3'-Dichlorobenzidine      | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| 3-Nitroaniline              | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| 4,6-Dinitro-2-methylphenol  | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| 4-Bromophenyl phenyl ether  | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| 4-Chloro-3-methylphenol     | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| 4-Chloroaniline             | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| 4-Chlorophenyl phenyl ether | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| 4-Nitroaniline              | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| 4-Nitrophenol               | ND          |      | 1.0          | µg/L        | 1               | 3/1/2014 12:01 AM |
| Acenaphthene                | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| Acenaphthylene              | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| Acetophenone                | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| Anthracene                  | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| <b>Atrazine</b>             | <b>0.84</b> |      | <b>0.20</b>  | <b>µg/L</b> | 1               | 3/1/2014 12:01 AM |
| Benz(a)anthracene           | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| Benzaldehyde                | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| Benzo(a)pyrene              | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| Benzo(b)fluoranthene        | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| Benzo(g,h,i)perylene        | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| Benzo(k)fluoranthene        | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| Bis(2-chloroethoxy)methane  | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| Bis(2-chloroethyl)ether     | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| Bis(2-chloroisopropyl)ether | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| Bis(2-ethylhexyl)phthalate  | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| Butyl benzyl phthalate      | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| Caprolactam                 | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| Carbazole                   | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| Chrysene                    | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| Dibenz(a,h)anthracene       | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| Dibenzofuran                | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| Diethyl phthalate           | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| Dimethyl phthalate          | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| Di-n-butyl phthalate        | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| Di-n-octyl phthalate        | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| Fluoranthene                | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| Fluorene                    | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| Hexachlorobenzene           | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |
| Hexachlorobutadiene         | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:01 AM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-15  
**Collection Date:** 2/24/2014 05:15 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-02  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/1/2014 12:01 AM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/1/2014 12:01 AM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/1/2014 12:01 AM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/1/2014 12:01 AM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/1/2014 12:01 AM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/1/2014 12:01 AM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/1/2014 12:01 AM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/1/2014 12:01 AM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/1/2014 12:01 AM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/1/2014 12:01 AM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/1/2014 12:01 AM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/1/2014 12:01 AM |
| Surr: 2,4,6-Tribromophenol | 73.2   |      | 34-129        | %REC  | 1                  | 3/1/2014 12:01 AM |
| Surr: 2-Fluorobiphenyl     | 71.0   |      | 40-125        | %REC  | 1                  | 3/1/2014 12:01 AM |
| Surr: 2-Fluorophenol       | 62.8   |      | 20-120        | %REC  | 1                  | 3/1/2014 12:01 AM |
| Surr: 4-Terphenyl-d14      | 72.3   |      | 40-135        | %REC  | 1                  | 3/1/2014 12:01 AM |
| Surr: Nitrobenzene-d5      | 66.0   |      | 41-120        | %REC  | 1                  | 3/1/2014 12:01 AM |
| Surr: Phenol-d6            | 62.5   |      | 20-120        | %REC  | 1                  | 3/1/2014 12:01 AM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 04:43 PM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 04:43 PM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 04:43 PM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 04:43 PM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 04:43 PM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 04:43 PM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 04:43 PM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 04:43 PM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 04:43 PM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 04:43 PM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 04:43 PM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 04:43 PM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 04:43 PM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 04:43 PM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 04:43 PM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 04:43 PM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 04:43 PM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 04:43 PM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 04:43 PM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 04:43 PM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 04:43 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-15  
**Collection Date:** 2/24/2014 05:15 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-02  
**Matrix:** GROUNDWATER

| Analyses                                  | Result       | Qual | Report Limit   | Units       | Dilution Factor | Date Analyzed       |
|-------------------------------------------|--------------|------|----------------|-------------|-----------------|---------------------|
| Chlorobenzene                             | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 04:43 PM   |
| Chloroethane                              | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 04:43 PM   |
| <b>Chloroform</b>                         | <b>0.013</b> |      | <b>0.0050</b>  | <b>mg/L</b> | 1               | 3/2/2014 04:43 PM   |
| Chloromethane                             | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 04:43 PM   |
| cis-1,2-Dichloroethene                    | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 04:43 PM   |
| cis-1,3-Dichloropropene                   | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 04:43 PM   |
| Dibromochloromethane                      | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 04:43 PM   |
| Ethylbenzene                              | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 04:43 PM   |
| Isopropylbenzene                          | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 04:43 PM   |
| m,p-Xylene                                | ND           |      | 0.010          | mg/L        | 1               | 3/2/2014 04:43 PM   |
| Methyl tert-butyl ether                   | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 04:43 PM   |
| Methylene chloride                        | ND           |      | 0.010          | mg/L        | 1               | 3/2/2014 04:43 PM   |
| Naphthalene                               | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 04:43 PM   |
| n-Butylbenzene                            | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 04:43 PM   |
| n-Propylbenzene                           | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 04:43 PM   |
| o-Xylene                                  | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 04:43 PM   |
| sec-Butylbenzene                          | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 04:43 PM   |
| Styrene                                   | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 04:43 PM   |
| Tetrachloroethene                         | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 04:43 PM   |
| Toluene                                   | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 04:43 PM   |
| trans-1,2-Dichloroethene                  | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 04:43 PM   |
| trans-1,3-Dichloropropene                 | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 04:43 PM   |
| Trichloroethene                           | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 04:43 PM   |
| Vinyl chloride                            | ND           |      | 0.0020         | mg/L        | 1               | 3/2/2014 04:43 PM   |
| Xylenes, Total                            | ND           |      | 0.015          | mg/L        | 1               | 3/2/2014 04:43 PM   |
| Surr: 1,2-Dichloroethane-d4               | 106          |      | 70-125         | %REC        | 1               | 3/2/2014 04:43 PM   |
| Surr: 4-Bromofluorobenzene                | 95.2         |      | 72-125         | %REC        | 1               | 3/2/2014 04:43 PM   |
| Surr: Dibromofluoromethane                | 100          |      | 71-125         | %REC        | 1               | 3/2/2014 04:43 PM   |
| Surr: Toluene-d8                          | 95.9         |      | 75-125         | %REC        | 1               | 3/2/2014 04:43 PM   |
| <b>ANIONS - EPA 300.0 (1993)</b>          |              |      | <b>E300</b>    |             |                 | <b>Analyst: JKP</b> |
| <b>Chloride</b>                           | <b>256</b>   |      | <b>5.00</b>    | <b>mg/L</b> | 10              | 3/12/2014 11:16 AM  |
| <b>Fluoride</b>                           | <b>0.715</b> |      | <b>0.100</b>   | <b>mg/L</b> | 1               | 3/11/2014 06:18 AM  |
| <b>Sulfate</b>                            | <b>83.0</b>  |      | <b>0.500</b>   | <b>mg/L</b> | 1               | 3/11/2014 06:18 AM  |
| <b>Nitrate/Nitrite (as N)</b>             | <b>7.86</b>  |      | <b>1.00</b>    | <b>mg/L</b> | 5               | 3/10/2014 12:59 AM  |
| <b>ALKALINITY-SM2320B</b>                 |              |      | <b>SM2320B</b> |             |                 | <b>Analyst: PPM</b> |
| <b>Alkalinity, Bicarbonate (As CaCO3)</b> | <b>209</b>   |      | <b>6.00</b>    | <b>mg/L</b> | 1               | 2/27/2014 08:53 PM  |
| Alkalinity, Carbonate (As CaCO3)          | ND           |      | 6.00           | mg/L        | 1               | 2/27/2014 08:53 PM  |
| Alkalinity, Hydroxide (As CaCO3)          | ND           |      | 6.00           | mg/L        | 1               | 2/27/2014 08:53 PM  |
| <b>Alkalinity, Total (As CaCO3)</b>       | <b>209</b>   |      | <b>6.00</b>    | <b>mg/L</b> | 1               | 2/27/2014 08:53 PM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental****Date:** 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-15  
**Collection Date:** 2/24/2014 05:15 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-02  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 1,370  |      | 5.00              | µmhos/cm | 1               | 2/27/2014 08:53 PM  |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 7.29   | H    | 0.100             | pH Units | 1               | 2/27/2014 08:53 PM  |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>JBA</b> |
| Total Dissolved Solids (Residue, Filterable) | 858    |      | 10.0              | mg/L     | 1               | 2/28/2014 11:00 AM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** Dup-1  
**Collection Date:** 2/24/2014 05:15 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-03  
**Matrix:** GROUNDWATER

| Analyses                       | Result  | Qual | Report Limit       | Units | Dilution Factor           | Date Analyzed                      |
|--------------------------------|---------|------|--------------------|-------|---------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |         |      |                    |       |                           |                                    |
| Mercury                        | ND      |      | SW7470<br>0.000200 | mg/L  | Prep Date: 2/28/2014<br>1 | Analyst: OFO<br>2/28/2014 05:46 PM |
| <b>DISSOLVED METALS</b>        |         |      |                    |       |                           |                                    |
| Aluminum                       | ND      |      | SW6020<br>0.0100   | mg/L  | Prep Date: 2/28/2014<br>1 | Analyst: SKS<br>2/28/2014 03:05 PM |
| Arsenic                        | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:05 PM                 |
| Barium                         | 0.178   |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:05 PM                 |
| Boron                          | 0.174   |      | 0.0200             | mg/L  | 1                         | 2/28/2014 03:05 PM                 |
| Cadmium                        | ND      |      | 0.00200            | mg/L  | 1                         | 2/28/2014 03:05 PM                 |
| Calcium                        | 126     |      | 0.500              | mg/L  | 1                         | 2/28/2014 03:05 PM                 |
| Chromium                       | 0.00961 |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:05 PM                 |
| Cobalt                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:05 PM                 |
| Copper                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:05 PM                 |
| Iron                           | ND      |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:05 PM                 |
| Lead                           | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:05 PM                 |
| Magnesium                      | 16.7    |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:05 PM                 |
| Manganese                      | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:05 PM                 |
| Molybdenum                     | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:05 PM                 |
| Nickel                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:05 PM                 |
| Potassium                      | 3.31    |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:05 PM                 |
| Selenium                       | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:05 PM                 |
| Silver                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:05 PM                 |
| Sodium                         | 110     |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:05 PM                 |
| Uranium                        | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:05 PM                 |
| Zinc                           | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:05 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |         |      |                    |       |                           |                                    |
| 1,1'-Biphenyl                  | ND      |      | SW8270<br>0.20     | µg/L  | Prep Date: 2/28/2014<br>1 | Analyst: LG<br>3/1/2014 12:21 AM   |
| 1-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/1/2014 12:21 AM                  |
| 2,4,5-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                         | 3/1/2014 12:21 AM                  |
| 2,4,6-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                         | 3/1/2014 12:21 AM                  |
| 2,4-Dichlorophenol             | ND      |      | 0.20               | µg/L  | 1                         | 3/1/2014 12:21 AM                  |
| 2,4-Dimethylphenol             | ND      |      | 0.20               | µg/L  | 1                         | 3/1/2014 12:21 AM                  |
| 2,4-Dinitrophenol              | ND      |      | 1.0                | µg/L  | 1                         | 3/1/2014 12:21 AM                  |
| 2,4-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                         | 3/1/2014 12:21 AM                  |
| 2,6-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                         | 3/1/2014 12:21 AM                  |
| 2-Chloronaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/1/2014 12:21 AM                  |
| 2-Chlorophenol                 | ND      |      | 0.20               | µg/L  | 1                         | 3/1/2014 12:21 AM                  |
| 2-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/1/2014 12:21 AM                  |
| 2-Methylphenol                 | ND      |      | 0.20               | µg/L  | 1                         | 3/1/2014 12:21 AM                  |
| 2-Nitroaniline                 | ND      |      | 0.20               | µg/L  | 1                         | 3/1/2014 12:21 AM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** Dup-1  
**Collection Date:** 2/24/2014 05:15 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-03  
**Matrix:** GROUNDWATER

| Analyses                    | Result      | Qual | Report Limit | Units       | Dilution Factor | Date Analyzed     |
|-----------------------------|-------------|------|--------------|-------------|-----------------|-------------------|
| 2-Nitrophenol               | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| 3&4-Methylphenol            | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| 3,3'-Dichlorobenzidine      | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| 3-Nitroaniline              | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| 4,6-Dinitro-2-methylphenol  | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| 4-Bromophenyl phenyl ether  | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| 4-Chloro-3-methylphenol     | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| 4-Chloroaniline             | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| 4-Chlorophenyl phenyl ether | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| 4-Nitroaniline              | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| 4-Nitrophenol               | ND          |      | 1.0          | µg/L        | 1               | 3/1/2014 12:21 AM |
| Acenaphthene                | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| Acenaphthylene              | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| Acetophenone                | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| Anthracene                  | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| <b>Atrazine</b>             | <b>0.72</b> |      | <b>0.20</b>  | <b>µg/L</b> | 1               | 3/1/2014 12:21 AM |
| Benz(a)anthracene           | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| Benzaldehyde                | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| Benzo(a)pyrene              | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| Benzo(b)fluoranthene        | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| Benzo(g,h,i)perylene        | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| Benzo(k)fluoranthene        | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| Bis(2-chloroethoxy)methane  | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| Bis(2-chloroethyl)ether     | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| Bis(2-chloroisopropyl)ether | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| Bis(2-ethylhexyl)phthalate  | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| Butyl benzyl phthalate      | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| Caprolactam                 | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| Carbazole                   | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| Chrysene                    | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| Dibenz(a,h)anthracene       | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| Dibenzofuran                | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| Diethyl phthalate           | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| Dimethyl phthalate          | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| Di-n-butyl phthalate        | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| <b>Di-n-octyl phthalate</b> | <b>0.23</b> |      | <b>0.20</b>  | <b>µg/L</b> | 1               | 3/1/2014 12:21 AM |
| Fluoranthene                | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| Fluorene                    | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| Hexachlorobenzene           | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |
| Hexachlorobutadiene         | ND          |      | 0.20         | µg/L        | 1               | 3/1/2014 12:21 AM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** Dup-1  
**Collection Date:** 2/24/2014 05:15 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-03  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/1/2014 12:21 AM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/1/2014 12:21 AM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/1/2014 12:21 AM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/1/2014 12:21 AM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/1/2014 12:21 AM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/1/2014 12:21 AM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/1/2014 12:21 AM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/1/2014 12:21 AM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/1/2014 12:21 AM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/1/2014 12:21 AM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/1/2014 12:21 AM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/1/2014 12:21 AM |
| Surr: 2,4,6-Tribromophenol | 69.4   |      | 34-129        | %REC  | 1                  | 3/1/2014 12:21 AM |
| Surr: 2-Fluorobiphenyl     | 56.1   |      | 40-125        | %REC  | 1                  | 3/1/2014 12:21 AM |
| Surr: 2-Fluorophenol       | 50.9   |      | 20-120        | %REC  | 1                  | 3/1/2014 12:21 AM |
| Surr: 4-Terphenyl-d14      | 67.0   |      | 40-135        | %REC  | 1                  | 3/1/2014 12:21 AM |
| Surr: Nitrobenzene-d5      | 53.1   |      | 41-120        | %REC  | 1                  | 3/1/2014 12:21 AM |
| Surr: Phenol-d6            | 51.4   |      | 20-120        | %REC  | 1                  | 3/1/2014 12:21 AM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:23 PM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:23 PM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:23 PM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:23 PM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:23 PM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:23 PM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:23 PM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:23 PM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:23 PM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:23 PM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 01:23 PM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 01:23 PM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:23 PM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 01:23 PM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 01:23 PM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:23 PM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:23 PM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:23 PM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:23 PM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 01:23 PM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 01:23 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** Dup-1  
**Collection Date:** 2/24/2014 05:15 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-03  
**Matrix:** GROUNDWATER

| Analyses                                  | Result       | Qual | Report Limit   | Units       | Dilution Factor | Date Analyzed       |
|-------------------------------------------|--------------|------|----------------|-------------|-----------------|---------------------|
| Chlorobenzene                             | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 01:23 PM   |
| Chloroethane                              | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 01:23 PM   |
| <b>Chloroform</b>                         | <b>0.011</b> |      | <b>0.0050</b>  | <b>mg/L</b> | 1               | 3/2/2014 01:23 PM   |
| Chloromethane                             | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 01:23 PM   |
| cis-1,2-Dichloroethene                    | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 01:23 PM   |
| cis-1,3-Dichloropropene                   | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 01:23 PM   |
| Dibromochloromethane                      | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 01:23 PM   |
| Ethylbenzene                              | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 01:23 PM   |
| Isopropylbenzene                          | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 01:23 PM   |
| m,p-Xylene                                | ND           |      | 0.010          | mg/L        | 1               | 3/2/2014 01:23 PM   |
| Methyl tert-butyl ether                   | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 01:23 PM   |
| Methylene chloride                        | ND           |      | 0.010          | mg/L        | 1               | 3/2/2014 01:23 PM   |
| Naphthalene                               | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 01:23 PM   |
| n-Butylbenzene                            | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 01:23 PM   |
| n-Propylbenzene                           | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 01:23 PM   |
| o-Xylene                                  | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 01:23 PM   |
| sec-Butylbenzene                          | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 01:23 PM   |
| Styrene                                   | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 01:23 PM   |
| Tetrachloroethene                         | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 01:23 PM   |
| Toluene                                   | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 01:23 PM   |
| trans-1,2-Dichloroethene                  | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 01:23 PM   |
| trans-1,3-Dichloropropene                 | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 01:23 PM   |
| Trichloroethene                           | ND           |      | 0.0050         | mg/L        | 1               | 3/2/2014 01:23 PM   |
| Vinyl chloride                            | ND           |      | 0.0020         | mg/L        | 1               | 3/2/2014 01:23 PM   |
| Xylenes, Total                            | ND           |      | 0.015          | mg/L        | 1               | 3/2/2014 01:23 PM   |
| Surr: 1,2-Dichloroethane-d4               | 107          |      | 70-125         | %REC        | 1               | 3/2/2014 01:23 PM   |
| Surr: 4-Bromofluorobenzene                | 95.7         |      | 72-125         | %REC        | 1               | 3/2/2014 01:23 PM   |
| Surr: Dibromofluoromethane                | 104          |      | 71-125         | %REC        | 1               | 3/2/2014 01:23 PM   |
| Surr: Toluene-d8                          | 94.6         |      | 75-125         | %REC        | 1               | 3/2/2014 01:23 PM   |
| <b>ANIONS - EPA 300.0 (1993)</b>          |              |      | <b>E300</b>    |             |                 | <b>Analyst: JKP</b> |
| <b>Chloride</b>                           | <b>263</b>   |      | <b>5.00</b>    | <b>mg/L</b> | 10              | 3/12/2014 11:30 AM  |
| <b>Fluoride</b>                           | <b>0.832</b> |      | <b>0.100</b>   | <b>mg/L</b> | 1               | 3/11/2014 06:32 AM  |
| <b>Sulfate</b>                            | <b>82.5</b>  |      | <b>0.500</b>   | <b>mg/L</b> | 1               | 3/11/2014 06:32 AM  |
| <b>Nitrate/Nitrite (as N)</b>             | <b>8.07</b>  |      | <b>1.00</b>    | <b>mg/L</b> | 5               | 3/10/2014 01:14 AM  |
| <b>ALKALINITY-SM2320B</b>                 |              |      | <b>SM2320B</b> |             |                 | <b>Analyst: PPM</b> |
| <b>Alkalinity, Bicarbonate (As CaCO3)</b> | <b>207</b>   |      | <b>6.00</b>    | <b>mg/L</b> | 1               | 2/27/2014 08:59 PM  |
| Alkalinity, Carbonate (As CaCO3)          | ND           |      | 6.00           | mg/L        | 1               | 2/27/2014 08:59 PM  |
| Alkalinity, Hydroxide (As CaCO3)          | ND           |      | 6.00           | mg/L        | 1               | 2/27/2014 08:59 PM  |
| <b>Alkalinity, Total (As CaCO3)</b>       | <b>207</b>   |      | <b>6.00</b>    | <b>mg/L</b> | 1               | 2/27/2014 08:59 PM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental****Date:** 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** Dup-1  
**Collection Date:** 2/24/2014 05:15 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-03  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 1,380  |      | 5.00              | µmhos/cm | 1               | 2/27/2014 08:59 PM  |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 7.30   | H    | 0.100             | pH Units | 1               | 2/27/2014 08:59 PM  |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>JBA</b> |
| Total Dissolved Solids (Residue, Filterable) | 810    |      | 10.0              | mg/L     | 1               | 2/28/2014 11:00 AM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-16  
**Collection Date:** 2/25/2014 03:10 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-04  
**Matrix:** GROUNDWATER

| Analyses                       | Result  | Qual | Report Limit       | Units | Dilution Factor           | Date Analyzed                      |
|--------------------------------|---------|------|--------------------|-------|---------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |         |      |                    |       |                           |                                    |
| Mercury                        | ND      |      | SW7470<br>0.000200 | mg/L  | Prep Date: 2/28/2014<br>1 | Analyst: OFO<br>2/28/2014 05:48 PM |
| <b>DISSOLVED METALS</b>        |         |      |                    |       |                           |                                    |
| Aluminum                       | ND      |      | SW6020<br>0.0100   | mg/L  | Prep Date: 2/28/2014<br>1 | Analyst: SKS<br>2/28/2014 03:07 PM |
| Arsenic                        | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:07 PM                 |
| Barium                         | 0.0938  |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:07 PM                 |
| Boron                          | 0.172   |      | 0.0200             | mg/L  | 1                         | 2/28/2014 03:07 PM                 |
| Cadmium                        | ND      |      | 0.00200            | mg/L  | 1                         | 2/28/2014 03:07 PM                 |
| Calcium                        | 80.3    |      | 0.500              | mg/L  | 1                         | 2/28/2014 03:07 PM                 |
| Chromium                       | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:07 PM                 |
| Cobalt                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:07 PM                 |
| Copper                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:07 PM                 |
| Iron                           | ND      |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:07 PM                 |
| Lead                           | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:07 PM                 |
| Magnesium                      | 8.74    |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:07 PM                 |
| Manganese                      | 0.0225  |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:07 PM                 |
| Molybdenum                     | 0.00516 |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:07 PM                 |
| Nickel                         | 0.0295  |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:07 PM                 |
| Potassium                      | 1.98    |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:07 PM                 |
| Selenium                       | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:07 PM                 |
| Silver                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:07 PM                 |
| Sodium                         | 36.6    |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:07 PM                 |
| Uranium                        | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:07 PM                 |
| Zinc                           | 0.00786 |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:07 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |         |      |                    |       |                           |                                    |
| 1,1'-Biphenyl                  | ND      |      | SW8270<br>0.20     | µg/L  | Prep Date: 2/28/2014<br>1 | Analyst: LG<br>3/3/2014 02:12 PM   |
| 1-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 02:12 PM                  |
| 2,4,5-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 02:12 PM                  |
| 2,4,6-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 02:12 PM                  |
| 2,4-Dichlorophenol             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 02:12 PM                  |
| 2,4-Dimethylphenol             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 02:12 PM                  |
| 2,4-Dinitrophenol              | ND      |      | 1.0                | µg/L  | 1                         | 3/3/2014 02:12 PM                  |
| 2,4-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 02:12 PM                  |
| 2,6-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 02:12 PM                  |
| 2-Chloronaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 02:12 PM                  |
| 2-Chlorophenol                 | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 02:12 PM                  |
| 2-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 02:12 PM                  |
| 2-Methylphenol                 | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 02:12 PM                  |
| 2-Nitroaniline                 | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 02:12 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-16  
**Collection Date:** 2/25/2014 03:10 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-04  
**Matrix:** GROUNDWATER

| Analyses                    | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed     |
|-----------------------------|--------|------|--------------|-------|-----------------|-------------------|
| 2-Nitrophenol               | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| 3&4-Methylphenol            | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| 3,3'-Dichlorobenzidine      | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| 3-Nitroaniline              | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| 4,6-Dinitro-2-methylphenol  | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| 4-Bromophenyl phenyl ether  | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| 4-Chloro-3-methylphenol     | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| 4-Chloroaniline             | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| 4-Chlorophenyl phenyl ether | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| 4-Nitroaniline              | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| 4-Nitrophenol               | ND     |      | 1.0          | µg/L  | 1               | 3/3/2014 02:12 PM |
| Acenaphthene                | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Acenaphthylene              | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Acetophenone                | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Anthracene                  | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Atrazine                    | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Benz(a)anthracene           | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Benzaldehyde                | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Benzo(a)pyrene              | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Benzo(b)fluoranthene        | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Benzo(g,h,i)perylene        | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Benzo(k)fluoranthene        | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Bis(2-chloroethoxy)methane  | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Bis(2-chloroethyl)ether     | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Bis(2-chloroisopropyl)ether | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Bis(2-ethylhexyl)phthalate  | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Butyl benzyl phthalate      | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Caprolactam                 | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Carbazole                   | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Chrysene                    | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Dibenz(a,h)anthracene       | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Dibenzofuran                | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Diethyl phthalate           | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Dimethyl phthalate          | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Di-n-butyl phthalate        | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Di-n-octyl phthalate        | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Fluoranthene                | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Fluorene                    | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Hexachlorobenzene           | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |
| Hexachlorobutadiene         | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 02:12 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-16  
**Collection Date:** 2/25/2014 03:10 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-04  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 02:12 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 02:12 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 02:12 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 02:12 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 02:12 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 02:12 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 02:12 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 02:12 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 02:12 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 02:12 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 02:12 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 02:12 PM |
| Surr: 2,4,6-Tribromophenol | 73.7   |      | 34-129        | %REC  | 1                  | 3/3/2014 02:12 PM |
| Surr: 2-Fluorobiphenyl     | 59.7   |      | 40-125        | %REC  | 1                  | 3/3/2014 02:12 PM |
| Surr: 2-Fluorophenol       | 55.1   |      | 20-120        | %REC  | 1                  | 3/3/2014 02:12 PM |
| Surr: 4-Terphenyl-d14      | 73.4   |      | 40-135        | %REC  | 1                  | 3/3/2014 02:12 PM |
| Surr: Nitrobenzene-d5      | 58.0   |      | 41-120        | %REC  | 1                  | 3/3/2014 02:12 PM |
| Surr: Phenol-d6            | 56.2   |      | 20-120        | %REC  | 1                  | 3/3/2014 02:12 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:09 PM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:09 PM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:09 PM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:09 PM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:09 PM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:09 PM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:09 PM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:09 PM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:09 PM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:09 PM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 05:09 PM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 05:09 PM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:09 PM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 05:09 PM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 05:09 PM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:09 PM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:09 PM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:09 PM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:09 PM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 05:09 PM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:09 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-16  
**Collection Date:** 2/25/2014 03:10 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-04  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed       |
|------------------------------------|--------|------|----------------|-------|-----------------|---------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 05:09 PM   |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 05:09 PM   |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 05:09 PM   |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 05:09 PM   |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 05:09 PM   |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 05:09 PM   |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 05:09 PM   |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 05:09 PM   |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 05:09 PM   |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/2/2014 05:09 PM   |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 05:09 PM   |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/2/2014 05:09 PM   |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 05:09 PM   |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 05:09 PM   |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 05:09 PM   |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 05:09 PM   |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 05:09 PM   |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 05:09 PM   |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 05:09 PM   |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 05:09 PM   |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 05:09 PM   |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 05:09 PM   |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 05:09 PM   |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/2/2014 05:09 PM   |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/2/2014 05:09 PM   |
| Surr: 1,2-Dichloroethane-d4        | 106    |      | 70-125         | %REC  | 1               | 3/2/2014 05:09 PM   |
| Surr: 4-Bromofluorobenzene         | 95.7   |      | 72-125         | %REC  | 1               | 3/2/2014 05:09 PM   |
| Surr: Dibromofluoromethane         | 102    |      | 71-125         | %REC  | 1               | 3/2/2014 05:09 PM   |
| Surr: Toluene-d8                   | 95.3   |      | 75-125         | %REC  | 1               | 3/2/2014 05:09 PM   |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       |                 | <b>Analyst: JKP</b> |
| Chloride                           | 23.9   |      | 0.500          | mg/L  | 1               | 3/11/2014 06:47 AM  |
| Fluoride                           | 0.766  |      | 0.100          | mg/L  | 1               | 3/11/2014 06:47 AM  |
| Sulfate                            | 62.3   |      | 0.500          | mg/L  | 1               | 3/11/2014 06:47 AM  |
| Nitrate/Nitrite (as N)             | 1.83   |      | 1.00           | mg/L  | 5               | 3/10/2014 01:28 AM  |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       |                 | <b>Analyst: PPM</b> |
| Alkalinity, Bicarbonate (As CaCO3) | 228    |      | 6.00           | mg/L  | 1               | 2/27/2014 09:05 PM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 6.00           | mg/L  | 1               | 2/27/2014 09:05 PM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 6.00           | mg/L  | 1               | 2/27/2014 09:05 PM  |
| Alkalinity, Total (As CaCO3)       | 228    |      | 6.00           | mg/L  | 1               | 2/27/2014 09:05 PM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

## ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-16  
**Collection Date:** 2/25/2014 03:10 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-04  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 611    |      | 5.00              | µmhos/cm | 1               | 2/27/2014 09:05 PM  |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 7.41   | H    | 0.100             | pH Units | 1               | 2/27/2014 09:05 PM  |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 362    |      | 10.0              | mg/L     | 1               | 3/3/2014 06:00 PM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-4  
**Collection Date:** 2/25/2014 04:45 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-05  
**Matrix:** GROUNDWATER

| Analyses                       | Result  | Qual | Report Limit       | Units | Dilution Factor           | Date Analyzed                      |
|--------------------------------|---------|------|--------------------|-------|---------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |         |      |                    |       |                           |                                    |
| Mercury                        | ND      |      | SW7470<br>0.000200 | mg/L  | Prep Date: 2/28/2014<br>1 | Analyst: OFO<br>2/28/2014 05:50 PM |
| <b>DISSOLVED METALS</b>        |         |      |                    |       |                           |                                    |
| Aluminum                       | ND      |      | SW6020<br>0.0100   | mg/L  | Prep Date: 2/28/2014<br>1 | Analyst: SKS<br>2/28/2014 03:09 PM |
| Arsenic                        | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:09 PM                 |
| Barium                         | 0.0897  |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:09 PM                 |
| Boron                          | 0.148   |      | 0.0200             | mg/L  | 1                         | 2/28/2014 03:09 PM                 |
| Cadmium                        | ND      |      | 0.00200            | mg/L  | 1                         | 2/28/2014 03:09 PM                 |
| Calcium                        | 77.3    |      | 0.500              | mg/L  | 1                         | 2/28/2014 03:09 PM                 |
| Chromium                       | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:09 PM                 |
| Cobalt                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:09 PM                 |
| Copper                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:09 PM                 |
| Iron                           | ND      |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:09 PM                 |
| Lead                           | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:09 PM                 |
| Magnesium                      | 8.78    |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:09 PM                 |
| Manganese                      | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:09 PM                 |
| Molybdenum                     | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:09 PM                 |
| Nickel                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:09 PM                 |
| Potassium                      | 2.22    |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:09 PM                 |
| Selenium                       | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:09 PM                 |
| Silver                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:09 PM                 |
| Sodium                         | 35.3    |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:09 PM                 |
| Uranium                        | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:09 PM                 |
| Zinc                           | 0.00801 |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:09 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |         |      |                    |       |                           |                                    |
| 1,1'-Biphenyl                  | ND      |      | SW8270<br>0.20     | µg/L  | Prep Date: 2/28/2014<br>1 | Analyst: LG<br>3/3/2014 02:32 PM   |
| 1-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 02:32 PM                  |
| 2,4,5-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 02:32 PM                  |
| 2,4,6-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 02:32 PM                  |
| 2,4-Dichlorophenol             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 02:32 PM                  |
| 2,4-Dimethylphenol             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 02:32 PM                  |
| 2,4-Dinitrophenol              | ND      |      | 1.0                | µg/L  | 1                         | 3/3/2014 02:32 PM                  |
| 2,4-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 02:32 PM                  |
| 2,6-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 02:32 PM                  |
| 2-Chloronaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 02:32 PM                  |
| 2-Chlorophenol                 | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 02:32 PM                  |
| 2-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 02:32 PM                  |
| 2-Methylphenol                 | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 02:32 PM                  |
| 2-Nitroaniline                 | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 02:32 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-4  
**Collection Date:** 2/25/2014 04:45 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-05  
**Matrix:** GROUNDWATER

| Analyses                          | Result     | Qual | Report Limit | Units       | Dilution Factor | Date Analyzed     |
|-----------------------------------|------------|------|--------------|-------------|-----------------|-------------------|
| 2-Nitrophenol                     | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| 3&4-Methylphenol                  | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| 3,3'-Dichlorobenzidine            | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| 3-Nitroaniline                    | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| 4,6-Dinitro-2-methylphenol        | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| 4-Bromophenyl phenyl ether        | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| 4-Chloro-3-methylphenol           | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| 4-Chloroaniline                   | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| 4-Chlorophenyl phenyl ether       | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| 4-Nitroaniline                    | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| 4-Nitrophenol                     | ND         |      | 1.0          | µg/L        | 1               | 3/3/2014 02:32 PM |
| Acenaphthene                      | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| Acenaphthylene                    | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| Acetophenone                      | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| Anthracene                        | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| Atrazine                          | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| Benz(a)anthracene                 | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| Benzaldehyde                      | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| Benzo(a)pyrene                    | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| Benzo(b)fluoranthene              | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| Benzo(g,h,i)perylene              | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| Benzo(k)fluoranthene              | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| Bis(2-chloroethoxy)methane        | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| Bis(2-chloroethyl)ether           | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| Bis(2-chloroisopropyl)ether       | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>7.4</b> |      | <b>0.20</b>  | <b>µg/L</b> | <b>1</b>        | 3/3/2014 02:32 PM |
| Butyl benzyl phthalate            | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| Caprolactam                       | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| Carbazole                         | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| Chrysene                          | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| Dibenz(a,h)anthracene             | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| Dibenzofuran                      | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| Diethyl phthalate                 | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| Dimethyl phthalate                | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| Di-n-butyl phthalate              | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| Di-n-octyl phthalate              | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| Fluoranthene                      | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| Fluorene                          | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| Hexachlorobenzene                 | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |
| Hexachlorobutadiene               | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 02:32 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-4  
**Collection Date:** 2/25/2014 04:45 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-05  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 02:32 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 02:32 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 02:32 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 02:32 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 02:32 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 02:32 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 02:32 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 02:32 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 02:32 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 02:32 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 02:32 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 02:32 PM |
| Surr: 2,4,6-Tribromophenol | 66.8   |      | 34-129        | %REC  | 1                  | 3/3/2014 02:32 PM |
| Surr: 2-Fluorobiphenyl     | 44.6   |      | 40-125        | %REC  | 1                  | 3/3/2014 02:32 PM |
| Surr: 2-Fluorophenol       | 42.1   |      | 20-120        | %REC  | 1                  | 3/3/2014 02:32 PM |
| Surr: 4-Terphenyl-d14      | 68.8   |      | 40-135        | %REC  | 1                  | 3/3/2014 02:32 PM |
| Surr: Nitrobenzene-d5      | 44.1   |      | 41-120        | %REC  | 1                  | 3/3/2014 02:32 PM |
| Surr: Phenol-d6            | 44.2   |      | 20-120        | %REC  | 1                  | 3/3/2014 02:32 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:35 PM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:35 PM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:35 PM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:35 PM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:35 PM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:35 PM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:35 PM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:35 PM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:35 PM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:35 PM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 05:35 PM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 05:35 PM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:35 PM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 05:35 PM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 05:35 PM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:35 PM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:35 PM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:35 PM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:35 PM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 05:35 PM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 05:35 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-4  
**Collection Date:** 2/25/2014 04:45 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-05  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor     | Date Analyzed      |
|------------------------------------|--------|------|----------------|-------|---------------------|--------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 05:35 PM  |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 05:35 PM  |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 05:35 PM  |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 05:35 PM  |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 05:35 PM  |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 05:35 PM  |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 05:35 PM  |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 05:35 PM  |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 05:35 PM  |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1                   | 3/2/2014 05:35 PM  |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 05:35 PM  |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1                   | 3/2/2014 05:35 PM  |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 05:35 PM  |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 05:35 PM  |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 05:35 PM  |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 05:35 PM  |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 05:35 PM  |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 05:35 PM  |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 05:35 PM  |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 05:35 PM  |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 05:35 PM  |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 05:35 PM  |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1                   | 3/2/2014 05:35 PM  |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1                   | 3/2/2014 05:35 PM  |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1                   | 3/2/2014 05:35 PM  |
| Surr: 1,2-Dichloroethane-d4        | 107    |      | 70-125         | %REC  | 1                   | 3/2/2014 05:35 PM  |
| Surr: 4-Bromofluorobenzene         | 96.8   |      | 72-125         | %REC  | 1                   | 3/2/2014 05:35 PM  |
| Surr: Dibromofluoromethane         | 105    |      | 71-125         | %REC  | 1                   | 3/2/2014 05:35 PM  |
| Surr: Toluene-d8                   | 95.4   |      | 75-125         | %REC  | 1                   | 3/2/2014 05:35 PM  |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       | <b>Analyst: JKP</b> |                    |
| Chloride                           | 26.9   |      | 0.500          | mg/L  | 1                   | 3/11/2014 07:01 AM |
| Fluoride                           | 0.877  |      | 0.100          | mg/L  | 1                   | 3/11/2014 07:01 AM |
| Sulfate                            | 75.5   |      | 0.500          | mg/L  | 1                   | 3/11/2014 07:01 AM |
| Nitrate/Nitrite (as N)             | 2.02   |      | 1.00           | mg/L  | 5                   | 3/10/2014 02:12 AM |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       | <b>Analyst: PPM</b> |                    |
| Alkalinity, Bicarbonate (As CaCO3) | 208    |      | 6.00           | mg/L  | 1                   | 2/27/2014 09:10 PM |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 6.00           | mg/L  | 1                   | 2/27/2014 09:10 PM |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 6.00           | mg/L  | 1                   | 2/27/2014 09:10 PM |
| Alkalinity, Total (As CaCO3)       | 208    |      | 6.00           | mg/L  | 1                   | 2/27/2014 09:10 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

## ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-4  
**Collection Date:** 2/25/2014 04:45 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-05  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 609    |      | 5.00              | µmhos/cm | 1               | 2/27/2014 09:10 PM  |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 7.43   | H    | 0.100             | pH Units | 1               | 2/27/2014 09:10 PM  |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 390    |      | 10.0              | mg/L     | 1               | 3/3/2014 06:00 PM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-2  
**Collection Date:** 2/25/2014 06:05 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-06  
**Matrix:** GROUNDWATER

| Analyses                       | Result | Qual | Report Limit       | Units | Dilution Factor           | Date Analyzed                      |
|--------------------------------|--------|------|--------------------|-------|---------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |        |      |                    |       |                           |                                    |
| Mercury                        | ND     |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/5/2014<br>1  | Analyst: OFO<br>3/5/2014 05:13 PM  |
| <b>DISSOLVED METALS</b>        |        |      |                    |       |                           |                                    |
| Aluminum                       | 0.0133 |      | SW6020<br>0.0100   | mg/L  | Prep Date: 2/28/2014<br>1 | Analyst: SKS<br>2/28/2014 03:12 PM |
| Arsenic                        | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:12 PM                 |
| Barium                         | 0.125  |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:12 PM                 |
| Boron                          | 0.203  |      | 0.0200             | mg/L  | 1                         | 2/28/2014 03:12 PM                 |
| Cadmium                        | ND     |      | 0.00200            | mg/L  | 1                         | 2/28/2014 03:12 PM                 |
| Calcium                        | 118    |      | 0.500              | mg/L  | 1                         | 2/28/2014 03:12 PM                 |
| Chromium                       | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:12 PM                 |
| Cobalt                         | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:12 PM                 |
| Copper                         | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:12 PM                 |
| Iron                           | ND     |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:12 PM                 |
| Lead                           | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:12 PM                 |
| Magnesium                      | 14.5   |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:12 PM                 |
| Manganese                      | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:12 PM                 |
| Molybdenum                     | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:12 PM                 |
| Nickel                         | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:12 PM                 |
| Potassium                      | 2.25   |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:12 PM                 |
| Selenium                       | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:12 PM                 |
| Silver                         | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:12 PM                 |
| Sodium                         | 72.0   |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:12 PM                 |
| Uranium                        | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:12 PM                 |
| Zinc                           | 0.0130 |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:12 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |        |      |                    |       |                           |                                    |
| 1,1'-Biphenyl                  | ND     |      | SW8270<br>0.20     | µg/L  | Prep Date: 2/28/2014<br>1 | Analyst: LG<br>3/3/2014 03:12 PM   |
| 1-Methylnaphthalene            | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:12 PM                  |
| 2,4,5-Trichlorophenol          | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:12 PM                  |
| 2,4,6-Trichlorophenol          | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:12 PM                  |
| 2,4-Dichlorophenol             | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:12 PM                  |
| 2,4-Dimethylphenol             | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:12 PM                  |
| 2,4-Dinitrophenol              | ND     |      | 1.0                | µg/L  | 1                         | 3/3/2014 03:12 PM                  |
| 2,4-Dinitrotoluene             | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:12 PM                  |
| 2,6-Dinitrotoluene             | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:12 PM                  |
| 2-Chloronaphthalene            | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:12 PM                  |
| 2-Chlorophenol                 | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:12 PM                  |
| 2-Methylnaphthalene            | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:12 PM                  |
| 2-Methylphenol                 | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:12 PM                  |
| 2-Nitroaniline                 | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:12 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-2  
**Collection Date:** 2/25/2014 06:05 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-06  
**Matrix:** GROUNDWATER

| Analyses                          | Result     | Qual | Report Limit | Units       | Dilution Factor | Date Analyzed     |
|-----------------------------------|------------|------|--------------|-------------|-----------------|-------------------|
| 2-Nitrophenol                     | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| 3&4-Methylphenol                  | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| 3,3'-Dichlorobenzidine            | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| 3-Nitroaniline                    | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| 4,6-Dinitro-2-methylphenol        | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| 4-Bromophenyl phenyl ether        | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| 4-Chloro-3-methylphenol           | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| 4-Chloroaniline                   | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| 4-Chlorophenyl phenyl ether       | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| 4-Nitroaniline                    | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| 4-Nitrophenol                     | ND         |      | 1.0          | µg/L        | 1               | 3/3/2014 03:12 PM |
| Acenaphthene                      | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| Acenaphthylene                    | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| Acetophenone                      | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| Anthracene                        | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| Atrazine                          | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| Benz(a)anthracene                 | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| Benzaldehyde                      | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| Benzo(a)pyrene                    | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| Benzo(b)fluoranthene              | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| Benzo(g,h,i)perylene              | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| Benzo(k)fluoranthene              | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| Bis(2-chloroethoxy)methane        | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| Bis(2-chloroethyl)ether           | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| Bis(2-chloroisopropyl)ether       | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>1.5</b> |      | <b>0.20</b>  | <b>µg/L</b> | <b>1</b>        | 3/3/2014 03:12 PM |
| Butyl benzyl phthalate            | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| Caprolactam                       | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| Carbazole                         | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| Chrysene                          | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| Dibenz(a,h)anthracene             | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| Dibenzofuran                      | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| Diethyl phthalate                 | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| Dimethyl phthalate                | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| Di-n-butyl phthalate              | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| Di-n-octyl phthalate              | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| Fluoranthene                      | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| Fluorene                          | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| Hexachlorobenzene                 | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |
| Hexachlorobutadiene               | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 03:12 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-2  
**Collection Date:** 2/25/2014 06:05 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-06  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:12 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:12 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:12 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:12 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:12 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:12 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:12 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:12 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:12 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:12 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:12 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:12 PM |
| Surr: 2,4,6-Tribromophenol | 76.4   |      | 34-129        | %REC  | 1                  | 3/3/2014 03:12 PM |
| Surr: 2-Fluorobiphenyl     | 62.6   |      | 40-125        | %REC  | 1                  | 3/3/2014 03:12 PM |
| Surr: 2-Fluorophenol       | 56.6   |      | 20-120        | %REC  | 1                  | 3/3/2014 03:12 PM |
| Surr: 4-Terphenyl-d14      | 75.1   |      | 40-135        | %REC  | 1                  | 3/3/2014 03:12 PM |
| Surr: Nitrobenzene-d5      | 58.6   |      | 41-120        | %REC  | 1                  | 3/3/2014 03:12 PM |
| Surr: Phenol-d6            | 61.2   |      | 20-120        | %REC  | 1                  | 3/3/2014 03:12 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:01 PM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:01 PM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:01 PM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:01 PM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:01 PM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:01 PM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:01 PM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:01 PM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:01 PM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:01 PM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 06:01 PM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 06:01 PM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:01 PM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 06:01 PM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 06:01 PM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:01 PM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:01 PM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:01 PM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:01 PM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 06:01 PM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:01 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-2  
**Collection Date:** 2/25/2014 06:05 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-06  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed       |
|------------------------------------|--------|------|----------------|-------|-----------------|---------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:01 PM   |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:01 PM   |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:01 PM   |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:01 PM   |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:01 PM   |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:01 PM   |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:01 PM   |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:01 PM   |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:01 PM   |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/2/2014 06:01 PM   |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:01 PM   |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/2/2014 06:01 PM   |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:01 PM   |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:01 PM   |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:01 PM   |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:01 PM   |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:01 PM   |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:01 PM   |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:01 PM   |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:01 PM   |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:01 PM   |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:01 PM   |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:01 PM   |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/2/2014 06:01 PM   |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/2/2014 06:01 PM   |
| Surr: 1,2-Dichloroethane-d4        | 108    |      | 70-125         | %REC  | 1               | 3/2/2014 06:01 PM   |
| Surr: 4-Bromofluorobenzene         | 95.2   |      | 72-125         | %REC  | 1               | 3/2/2014 06:01 PM   |
| Surr: Dibromofluoromethane         | 105    |      | 71-125         | %REC  | 1               | 3/2/2014 06:01 PM   |
| Surr: Toluene-d8                   | 94.9   |      | 75-125         | %REC  | 1               | 3/2/2014 06:01 PM   |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       |                 | <b>Analyst: JKP</b> |
| Chloride                           | 139    |      | 2.50           | mg/L  | 5               | 3/12/2014 11:45 AM  |
| Fluoride                           | 0.693  |      | 0.100          | mg/L  | 1               | 3/11/2014 07:16 AM  |
| Sulfate                            | 79.4   |      | 0.500          | mg/L  | 1               | 3/11/2014 07:16 AM  |
| Nitrate/Nitrite (as N)             | 5.25   |      | 1.00           | mg/L  | 5               | 3/10/2014 02:27 AM  |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       |                 | <b>Analyst: PPM</b> |
| Alkalinity, Bicarbonate (As CaCO3) | 259    |      | 6.00           | mg/L  | 1               | 2/27/2014 09:20 PM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 6.00           | mg/L  | 1               | 2/27/2014 09:20 PM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 6.00           | mg/L  | 1               | 2/27/2014 09:20 PM  |
| Alkalinity, Total (As CaCO3)       | 259    |      | 6.00           | mg/L  | 1               | 2/27/2014 09:20 PM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental****Date:** 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-2  
**Collection Date:** 2/25/2014 06:05 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-06  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 1,070  |      | 5.00              | µmhos/cm | 1               | 2/27/2014 09:20 PM  |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 7.26   | H    | 0.100             | pH Units | 1               | 2/27/2014 09:20 PM  |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 616    |      | 10.0              | mg/L     | 1               | 3/3/2014 06:00 PM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-5  
**Collection Date:** 2/25/2014 08:44 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-08  
**Matrix:** GROUNDWATER

| Analyses                       | Result | Qual | Report Limit       | Units | Dilution Factor           | Date Analyzed                      |
|--------------------------------|--------|------|--------------------|-------|---------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |        |      |                    |       |                           |                                    |
| Mercury                        | ND     |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/5/2014<br>1  | Analyst: OFO<br>3/5/2014 05:14 PM  |
| <b>DISSOLVED METALS</b>        |        |      |                    |       |                           |                                    |
| Aluminum                       | ND     |      | SW6020<br>0.0100   | mg/L  | Prep Date: 2/28/2014<br>1 | Analyst: SKS<br>2/28/2014 03:14 PM |
| Arsenic                        | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:14 PM                 |
| Barium                         | 0.116  |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:14 PM                 |
| Boron                          | 0.0893 |      | 0.0200             | mg/L  | 1                         | 2/28/2014 03:14 PM                 |
| Cadmium                        | ND     |      | 0.00200            | mg/L  | 1                         | 2/28/2014 03:14 PM                 |
| Calcium                        | 92.1   |      | 0.500              | mg/L  | 1                         | 2/28/2014 03:14 PM                 |
| Chromium                       | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:14 PM                 |
| Cobalt                         | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:14 PM                 |
| Copper                         | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:14 PM                 |
| Iron                           | ND     |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:14 PM                 |
| Lead                           | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:14 PM                 |
| Magnesium                      | 10.5   |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:14 PM                 |
| Manganese                      | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:14 PM                 |
| Molybdenum                     | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:14 PM                 |
| Nickel                         | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:14 PM                 |
| Potassium                      | 2.44   |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:14 PM                 |
| Selenium                       | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:14 PM                 |
| Silver                         | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:14 PM                 |
| Sodium                         | 60.1   |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:14 PM                 |
| Uranium                        | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:14 PM                 |
| Zinc                           | 0.0114 |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:14 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |        |      |                    |       |                           |                                    |
| 1,1'-Biphenyl                  | ND     |      | SW8270<br>0.20     | µg/L  | Prep Date: 2/28/2014<br>1 | Analyst: LG<br>3/3/2014 03:32 PM   |
| 1-Methylnaphthalene            | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:32 PM                  |
| 2,4,5-Trichlorophenol          | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:32 PM                  |
| 2,4,6-Trichlorophenol          | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:32 PM                  |
| 2,4-Dichlorophenol             | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:32 PM                  |
| 2,4-Dimethylphenol             | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:32 PM                  |
| 2,4-Dinitrophenol              | ND     |      | 1.0                | µg/L  | 1                         | 3/3/2014 03:32 PM                  |
| 2,4-Dinitrotoluene             | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:32 PM                  |
| 2,6-Dinitrotoluene             | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:32 PM                  |
| 2-Chloronaphthalene            | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:32 PM                  |
| 2-Chlorophenol                 | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:32 PM                  |
| 2-Methylnaphthalene            | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:32 PM                  |
| 2-Methylphenol                 | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:32 PM                  |
| 2-Nitroaniline                 | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:32 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-5  
**Collection Date:** 2/25/2014 08:44 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-08  
**Matrix:** GROUNDWATER

| Analyses                          | Result      | Qual | Report Limit | Units       | Dilution Factor | Date Analyzed     |
|-----------------------------------|-------------|------|--------------|-------------|-----------------|-------------------|
| 2-Nitrophenol                     | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| 3&4-Methylphenol                  | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| 3,3'-Dichlorobenzidine            | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| 3-Nitroaniline                    | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| 4,6-Dinitro-2-methylphenol        | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| 4-Bromophenyl phenyl ether        | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| 4-Chloro-3-methylphenol           | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| 4-Chloroaniline                   | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| 4-Chlorophenyl phenyl ether       | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| 4-Nitroaniline                    | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| 4-Nitrophenol                     | ND          |      | 1.0          | µg/L        | 1               | 3/3/2014 03:32 PM |
| Acenaphthene                      | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| Acenaphthylene                    | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| Acetophenone                      | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| Anthracene                        | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| Atrazine                          | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| Benz(a)anthracene                 | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| Benzaldehyde                      | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| Benzo(a)pyrene                    | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| Benzo(b)fluoranthene              | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| Benzo(g,h,i)perylene              | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| Benzo(k)fluoranthene              | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| Bis(2-chloroethoxy)methane        | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| Bis(2-chloroethyl)ether           | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| Bis(2-chloroisopropyl)ether       | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>2.0</b>  |      | <b>0.20</b>  | <b>µg/L</b> | 1               | 3/3/2014 03:32 PM |
| Butyl benzyl phthalate            | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| <b>Caprolactam</b>                | <b>0.25</b> |      | <b>0.20</b>  | <b>µg/L</b> | 1               | 3/3/2014 03:32 PM |
| Carbazole                         | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| Chrysene                          | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| Dibenz(a,h)anthracene             | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| Dibenzofuran                      | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| Diethyl phthalate                 | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| Dimethyl phthalate                | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| Di-n-butyl phthalate              | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| Di-n-octyl phthalate              | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| Fluoranthene                      | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| Fluorene                          | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| Hexachlorobenzene                 | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |
| Hexachlorobutadiene               | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:32 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-5  
**Collection Date:** 2/25/2014 08:44 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-08  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:32 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:32 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:32 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:32 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:32 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:32 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:32 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:32 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:32 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:32 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:32 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:32 PM |
| Surr: 2,4,6-Tribromophenol | 75.6   |      | 34-129        | %REC  | 1                  | 3/3/2014 03:32 PM |
| Surr: 2-Fluorobiphenyl     | 56.1   |      | 40-125        | %REC  | 1                  | 3/3/2014 03:32 PM |
| Surr: 2-Fluorophenol       | 50.5   |      | 20-120        | %REC  | 1                  | 3/3/2014 03:32 PM |
| Surr: 4-Terphenyl-d14      | 69.6   |      | 40-135        | %REC  | 1                  | 3/3/2014 03:32 PM |
| Surr: Nitrobenzene-d5      | 52.2   |      | 41-120        | %REC  | 1                  | 3/3/2014 03:32 PM |
| Surr: Phenol-d6            | 52.6   |      | 20-120        | %REC  | 1                  | 3/3/2014 03:32 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:53 PM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:53 PM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:53 PM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:53 PM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:53 PM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:53 PM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:53 PM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:53 PM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:53 PM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:53 PM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 06:53 PM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 06:53 PM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:53 PM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 06:53 PM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 06:53 PM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:53 PM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:53 PM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:53 PM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:53 PM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 06:53 PM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 06:53 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-5  
**Collection Date:** 2/25/2014 08:44 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-08  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed       |
|------------------------------------|--------|------|----------------|-------|-----------------|---------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:53 PM   |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:53 PM   |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:53 PM   |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:53 PM   |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:53 PM   |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:53 PM   |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:53 PM   |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:53 PM   |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:53 PM   |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/2/2014 06:53 PM   |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:53 PM   |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/2/2014 06:53 PM   |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:53 PM   |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:53 PM   |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:53 PM   |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:53 PM   |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:53 PM   |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:53 PM   |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:53 PM   |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:53 PM   |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:53 PM   |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:53 PM   |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 06:53 PM   |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/2/2014 06:53 PM   |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/2/2014 06:53 PM   |
| Surr: 1,2-Dichloroethane-d4        | 105    |      | 70-125         | %REC  | 1               | 3/2/2014 06:53 PM   |
| Surr: 4-Bromofluorobenzene         | 95.3   |      | 72-125         | %REC  | 1               | 3/2/2014 06:53 PM   |
| Surr: Dibromofluoromethane         | 103    |      | 71-125         | %REC  | 1               | 3/2/2014 06:53 PM   |
| Surr: Toluene-d8                   | 94.7   |      | 75-125         | %REC  | 1               | 3/2/2014 06:53 PM   |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       |                 | <b>Analyst: JKP</b> |
| Chloride                           | 11.8   |      | 0.500          | mg/L  | 1               | 3/11/2014 07:31 AM  |
| Fluoride                           | 0.877  |      | 0.100          | mg/L  | 1               | 3/11/2014 07:31 AM  |
| Sulfate                            | 48.4   |      | 0.500          | mg/L  | 1               | 3/11/2014 07:31 AM  |
| Nitrate/Nitrite (as N)             | 2.52   |      | 1.00           | mg/L  | 5               | 3/10/2014 02:41 AM  |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       |                 | <b>Analyst: PPM</b> |
| Alkalinity, Bicarbonate (As CaCO3) | 359    |      | 6.00           | mg/L  | 1               | 2/27/2014 09:26 PM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 6.00           | mg/L  | 1               | 2/27/2014 09:26 PM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 6.00           | mg/L  | 1               | 2/27/2014 09:26 PM  |
| Alkalinity, Total (As CaCO3)       | 359    |      | 6.00           | mg/L  | 1               | 2/27/2014 09:26 PM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental****Date:** 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-5  
**Collection Date:** 2/25/2014 08:44 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-08  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 756    |      | 5.00              | µmhos/cm | 1               | 2/27/2014 09:26 PM  |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 7.22   | H    | 0.100             | pH Units | 1               | 2/27/2014 09:26 PM  |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>JBA</b> |
| Total Dissolved Solids (Residue, Filterable) | 436    |      | 10.0              | mg/L     | 1               | 2/28/2014 11:00 AM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-21  
**Collection Date:** 2/25/2014 11:24 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-09  
**Matrix:** GROUNDWATER

| Analyses                       | Result  | Qual | Report Limit       | Units | Dilution Factor           | Date Analyzed                      |
|--------------------------------|---------|------|--------------------|-------|---------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |         |      |                    |       |                           |                                    |
| Mercury                        | ND      |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/5/2014<br>1  | Analyst: OFO<br>3/5/2014 05:16 PM  |
| <b>DISSOLVED METALS</b>        |         |      |                    |       |                           |                                    |
| Aluminum                       | ND      |      | SW6020<br>0.0100   | mg/L  | Prep Date: 2/28/2014<br>1 | Analyst: SKS<br>2/28/2014 03:22 PM |
| Arsenic                        | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:22 PM                 |
| Barium                         | 0.187   |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:22 PM                 |
| Boron                          | 0.335   |      | 0.0200             | mg/L  | 1                         | 2/28/2014 03:22 PM                 |
| Cadmium                        | ND      |      | 0.00200            | mg/L  | 1                         | 2/28/2014 03:22 PM                 |
| Calcium                        | 232     |      | 5.00               | mg/L  | 10                        | 3/3/2014 02:34 PM                  |
| Chromium                       | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:22 PM                 |
| Cobalt                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:22 PM                 |
| Copper                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:22 PM                 |
| Iron                           | ND      |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:22 PM                 |
| Lead                           | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:22 PM                 |
| Magnesium                      | 21.5    |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:22 PM                 |
| Manganese                      | 0.0709  |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:22 PM                 |
| Molybdenum                     | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:22 PM                 |
| Nickel                         | 0.0171  |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:22 PM                 |
| Potassium                      | 2.73    |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:22 PM                 |
| Selenium                       | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:22 PM                 |
| Silver                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:22 PM                 |
| Sodium                         | 57.7    |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:22 PM                 |
| Uranium                        | 0.00939 |      | 0.00500            | mg/L  | 1                         | 3/3/2014 02:04 PM                  |
| Zinc                           | 0.0531  |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:22 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |         |      |                    |       |                           |                                    |
| 1,1'-Biphenyl                  | ND      |      | SW8270<br>0.20     | µg/L  | Prep Date: 2/28/2014<br>1 | Analyst: LG<br>3/3/2014 03:52 PM   |
| 1-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:52 PM                  |
| 2,4,5-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:52 PM                  |
| 2,4,6-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:52 PM                  |
| 2,4-Dichlorophenol             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:52 PM                  |
| 2,4-Dimethylphenol             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:52 PM                  |
| 2,4-Dinitrophenol              | ND      |      | 1.0                | µg/L  | 1                         | 3/3/2014 03:52 PM                  |
| 2,4-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:52 PM                  |
| 2,6-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:52 PM                  |
| 2-Chloronaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:52 PM                  |
| 2-Chlorophenol                 | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:52 PM                  |
| 2-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:52 PM                  |
| 2-Methylphenol                 | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:52 PM                  |
| 2-Nitroaniline                 | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 03:52 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-21  
**Collection Date:** 2/25/2014 11:24 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-09  
**Matrix:** GROUNDWATER

| Analyses                    | Result      | Qual | Report Limit | Units       | Dilution Factor | Date Analyzed     |
|-----------------------------|-------------|------|--------------|-------------|-----------------|-------------------|
| 2-Nitrophenol               | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| 3&4-Methylphenol            | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| 3,3'-Dichlorobenzidine      | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| 3-Nitroaniline              | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| 4,6-Dinitro-2-methylphenol  | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| 4-Bromophenyl phenyl ether  | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| 4-Chloro-3-methylphenol     | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| 4-Chloroaniline             | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| 4-Chlorophenyl phenyl ether | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| 4-Nitroaniline              | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| 4-Nitrophenol               | ND          |      | 1.0          | µg/L        | 1               | 3/3/2014 03:52 PM |
| Acenaphthene                | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| Acenaphthylene              | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| Acetophenone                | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| Anthracene                  | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| Atrazine                    | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| Benz(a)anthracene           | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| Benzaldehyde                | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| Benzo(a)pyrene              | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| Benzo(b)fluoranthene        | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| Benzo(g,h,i)perylene        | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| Benzo(k)fluoranthene        | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| Bis(2-chloroethoxy)methane  | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| Bis(2-chloroethyl)ether     | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| Bis(2-chloroisopropyl)ether | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| Bis(2-ethylhexyl)phthalate  | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| Butyl benzyl phthalate      | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| Caprolactam                 | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| Carbazole                   | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| Chrysene                    | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| Dibenz(a,h)anthracene       | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| Dibenzofuran                | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| Diethyl phthalate           | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| Dimethyl phthalate          | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| Di-n-butyl phthalate        | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| <b>Di-n-octyl phthalate</b> | <b>0.86</b> |      | <b>0.20</b>  | <b>µg/L</b> | 1               | 3/3/2014 03:52 PM |
| Fluoranthene                | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| Fluorene                    | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| Hexachlorobenzene           | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |
| Hexachlorobutadiene         | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 03:52 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-21  
**Collection Date:** 2/25/2014 11:24 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-09  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:52 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:52 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:52 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:52 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:52 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:52 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:52 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:52 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:52 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:52 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:52 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 03:52 PM |
| Surr: 2,4,6-Tribromophenol | 83.9   |      | 34-129        | %REC  | 1                  | 3/3/2014 03:52 PM |
| Surr: 2-Fluorobiphenyl     | 71.4   |      | 40-125        | %REC  | 1                  | 3/3/2014 03:52 PM |
| Surr: 2-Fluorophenol       | 64.8   |      | 20-120        | %REC  | 1                  | 3/3/2014 03:52 PM |
| Surr: 4-Terphenyl-d14      | 71.7   |      | 40-135        | %REC  | 1                  | 3/3/2014 03:52 PM |
| Surr: Nitrobenzene-d5      | 66.2   |      | 41-120        | %REC  | 1                  | 3/3/2014 03:52 PM |
| Surr: Phenol-d6            | 64.7   |      | 20-120        | %REC  | 1                  | 3/3/2014 03:52 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:19 PM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:19 PM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:19 PM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:19 PM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:19 PM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:19 PM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:19 PM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:19 PM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:19 PM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:19 PM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 07:19 PM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 07:19 PM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:19 PM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 07:19 PM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 07:19 PM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:19 PM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:19 PM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:19 PM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:19 PM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 07:19 PM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:19 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-21  
**Collection Date:** 2/25/2014 11:24 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-09  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed       |
|------------------------------------|--------|------|----------------|-------|-----------------|---------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:19 PM   |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:19 PM   |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:19 PM   |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:19 PM   |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:19 PM   |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:19 PM   |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:19 PM   |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:19 PM   |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:19 PM   |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/2/2014 07:19 PM   |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:19 PM   |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/2/2014 07:19 PM   |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:19 PM   |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:19 PM   |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:19 PM   |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:19 PM   |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:19 PM   |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:19 PM   |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:19 PM   |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:19 PM   |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:19 PM   |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:19 PM   |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:19 PM   |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/2/2014 07:19 PM   |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/2/2014 07:19 PM   |
| Surr: 1,2-Dichloroethane-d4        | 107    |      | 70-125         | %REC  | 1               | 3/2/2014 07:19 PM   |
| Surr: 4-Bromofluorobenzene         | 94.5   |      | 72-125         | %REC  | 1               | 3/2/2014 07:19 PM   |
| Surr: Dibromofluoromethane         | 101    |      | 71-125         | %REC  | 1               | 3/2/2014 07:19 PM   |
| Surr: Toluene-d8                   | 93.4   |      | 75-125         | %REC  | 1               | 3/2/2014 07:19 PM   |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       |                 | <b>Analyst: JKP</b> |
| Chloride                           | 134    |      | 2.50           | mg/L  | 5               | 3/12/2014 12:34 PM  |
| Fluoride                           | 0.213  |      | 0.100          | mg/L  | 1               | 3/11/2014 07:45 AM  |
| Sulfate                            | 75.9   |      | 0.500          | mg/L  | 1               | 3/11/2014 07:45 AM  |
| Nitrate/Nitrite (as N)             | 3.78   |      | 1.00           | mg/L  | 5               | 3/10/2014 02:56 AM  |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       |                 | <b>Analyst: PPM</b> |
| Alkalinity, Bicarbonate (As CaCO3) | 592    |      | 6.00           | mg/L  | 1               | 2/27/2014 10:08 PM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 6.00           | mg/L  | 1               | 2/27/2014 10:08 PM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 6.00           | mg/L  | 1               | 2/27/2014 10:08 PM  |
| Alkalinity, Total (As CaCO3)       | 592    |      | 6.00           | mg/L  | 1               | 2/27/2014 10:08 PM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



**ALS Environmental****Date:** 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-21  
**Collection Date:** 2/25/2014 11:24 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-09  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 1,520  |      | 5.00              | µmhos/cm | 1               | 2/27/2014 10:08 PM  |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 6.77   | H    | 0.100             | pH Units | 1               | 2/27/2014 10:08 PM  |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>JBA</b> |
| Total Dissolved Solids (Residue, Filterable) | 918    |      | 10.0              | mg/L     | 1               | 2/28/2014 11:00 AM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-22  
**Collection Date:** 2/25/2014 01:35 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-10  
**Matrix:** GROUNDWATER

| Analyses                       | Result  | Qual | Report Limit       | Units | Dilution Factor           | Date Analyzed                      |
|--------------------------------|---------|------|--------------------|-------|---------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |         |      |                    |       |                           |                                    |
| Mercury                        | ND      |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/5/2014<br>1  | Analyst: OFO<br>3/5/2014 05:18 PM  |
| <b>DISSOLVED METALS</b>        |         |      |                    |       |                           |                                    |
| Aluminum                       | ND      |      | SW6020<br>0.0100   | mg/L  | Prep Date: 2/28/2014<br>1 | Analyst: SKS<br>2/28/2014 03:24 PM |
| Arsenic                        | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:24 PM                 |
| Barium                         | 0.143   |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:24 PM                 |
| Boron                          | 0.204   |      | 0.0200             | mg/L  | 1                         | 2/28/2014 03:24 PM                 |
| Cadmium                        | ND      |      | 0.00200            | mg/L  | 1                         | 2/28/2014 03:24 PM                 |
| Calcium                        | 180     |      | 0.500              | mg/L  | 1                         | 2/28/2014 03:24 PM                 |
| Chromium                       | 0.0133  |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:24 PM                 |
| Cobalt                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:24 PM                 |
| Copper                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:24 PM                 |
| Iron                           | ND      |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:24 PM                 |
| Lead                           | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:24 PM                 |
| Magnesium                      | 21.8    |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:24 PM                 |
| Manganese                      | 0.0238  |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:24 PM                 |
| Molybdenum                     | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:24 PM                 |
| Nickel                         | 0.0266  |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:24 PM                 |
| Potassium                      | 2.87    |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:24 PM                 |
| Selenium                       | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:24 PM                 |
| Silver                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:24 PM                 |
| Sodium                         | 63.5    |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:24 PM                 |
| Uranium                        | 0.00632 |      | 0.00500            | mg/L  | 1                         | 3/3/2014 02:07 PM                  |
| Zinc                           | 0.0150  |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:24 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |         |      |                    |       |                           |                                    |
| 1,1'-Biphenyl                  | ND      |      | SW8270<br>0.20     | µg/L  | Prep Date: 2/28/2014<br>1 | Analyst: LG<br>3/3/2014 04:12 PM   |
| 1-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:12 PM                  |
| 2,4,5-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:12 PM                  |
| 2,4,6-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:12 PM                  |
| 2,4-Dichlorophenol             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:12 PM                  |
| 2,4-Dimethylphenol             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:12 PM                  |
| 2,4-Dinitrophenol              | ND      |      | 1.0                | µg/L  | 1                         | 3/3/2014 04:12 PM                  |
| 2,4-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:12 PM                  |
| 2,6-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:12 PM                  |
| 2-Chloronaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:12 PM                  |
| 2-Chlorophenol                 | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:12 PM                  |
| 2-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:12 PM                  |
| 2-Methylphenol                 | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:12 PM                  |
| 2-Nitroaniline                 | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:12 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-22  
**Collection Date:** 2/25/2014 01:35 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-10  
**Matrix:** GROUNDWATER

| Analyses                    | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed     |
|-----------------------------|--------|------|--------------|-------|-----------------|-------------------|
| 2-Nitrophenol               | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| 3&4-Methylphenol            | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| 3,3'-Dichlorobenzidine      | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| 3-Nitroaniline              | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| 4,6-Dinitro-2-methylphenol  | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| 4-Bromophenyl phenyl ether  | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| 4-Chloro-3-methylphenol     | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| 4-Chloroaniline             | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| 4-Chlorophenyl phenyl ether | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| 4-Nitroaniline              | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| 4-Nitrophenol               | ND     |      | 1.0          | µg/L  | 1               | 3/3/2014 04:12 PM |
| Acenaphthene                | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Acenaphthylene              | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Acetophenone                | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Anthracene                  | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Atrazine                    | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Benz(a)anthracene           | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Benzaldehyde                | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Benzo(a)pyrene              | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Benzo(b)fluoranthene        | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Benzo(g,h,i)perylene        | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Benzo(k)fluoranthene        | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Bis(2-chloroethoxy)methane  | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Bis(2-chloroethyl)ether     | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Bis(2-chloroisopropyl)ether | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Bis(2-ethylhexyl)phthalate  | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Butyl benzyl phthalate      | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Caprolactam                 | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Carbazole                   | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Chrysene                    | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Dibenz(a,h)anthracene       | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Dibenzofuran                | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Diethyl phthalate           | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Dimethyl phthalate          | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Di-n-butyl phthalate        | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Di-n-octyl phthalate        | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Fluoranthene                | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Fluorene                    | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Hexachlorobenzene           | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |
| Hexachlorobutadiene         | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:12 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-22  
**Collection Date:** 2/25/2014 01:35 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-10  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:12 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:12 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:12 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:12 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:12 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:12 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:12 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:12 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:12 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:12 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:12 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:12 PM |
| Surr: 2,4,6-Tribromophenol | 83.5   |      | 34-129        | %REC  | 1                  | 3/3/2014 04:12 PM |
| Surr: 2-Fluorobiphenyl     | 76.5   |      | 40-125        | %REC  | 1                  | 3/3/2014 04:12 PM |
| Surr: 2-Fluorophenol       | 71.1   |      | 20-120        | %REC  | 1                  | 3/3/2014 04:12 PM |
| Surr: 4-Terphenyl-d14      | 80.6   |      | 40-135        | %REC  | 1                  | 3/3/2014 04:12 PM |
| Surr: Nitrobenzene-d5      | 69.4   |      | 41-120        | %REC  | 1                  | 3/3/2014 04:12 PM |
| Surr: Phenol-d6            | 67.9   |      | 20-120        | %REC  | 1                  | 3/3/2014 04:12 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:45 PM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:45 PM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:45 PM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:45 PM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:45 PM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:45 PM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:45 PM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:45 PM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:45 PM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:45 PM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 07:45 PM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 07:45 PM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:45 PM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 07:45 PM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 07:45 PM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:45 PM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:45 PM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:45 PM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:45 PM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 07:45 PM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 07:45 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-22  
**Collection Date:** 2/25/2014 01:35 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-10  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed       |
|------------------------------------|--------|------|----------------|-------|-----------------|---------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:45 PM   |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:45 PM   |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:45 PM   |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:45 PM   |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:45 PM   |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:45 PM   |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:45 PM   |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:45 PM   |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:45 PM   |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/2/2014 07:45 PM   |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:45 PM   |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/2/2014 07:45 PM   |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:45 PM   |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:45 PM   |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:45 PM   |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:45 PM   |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:45 PM   |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:45 PM   |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:45 PM   |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:45 PM   |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:45 PM   |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:45 PM   |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 07:45 PM   |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/2/2014 07:45 PM   |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/2/2014 07:45 PM   |
| Surr: 1,2-Dichloroethane-d4        | 107    |      | 70-125         | %REC  | 1               | 3/2/2014 07:45 PM   |
| Surr: 4-Bromofluorobenzene         | 94.8   |      | 72-125         | %REC  | 1               | 3/2/2014 07:45 PM   |
| Surr: Dibromofluoromethane         | 103    |      | 71-125         | %REC  | 1               | 3/2/2014 07:45 PM   |
| Surr: Toluene-d8                   | 94.3   |      | 75-125         | %REC  | 1               | 3/2/2014 07:45 PM   |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       |                 | <b>Analyst: JKP</b> |
| Chloride                           | 172    |      | 2.50           | mg/L  | 5               | 3/12/2014 12:48 PM  |
| Fluoride                           | 0.416  |      | 0.100          | mg/L  | 1               | 3/11/2014 08:00 AM  |
| Sulfate                            | 85.2   |      | 0.500          | mg/L  | 1               | 3/11/2014 08:00 AM  |
| Nitrate/Nitrite (as N)             | 3.53   |      | 1.00           | mg/L  | 5               | 3/10/2014 03:10 AM  |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       |                 | <b>Analyst: PPM</b> |
| Alkalinity, Bicarbonate (As CaCO3) | 410    |      | 6.00           | mg/L  | 1               | 2/27/2014 10:13 PM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 6.00           | mg/L  | 1               | 2/27/2014 10:13 PM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 6.00           | mg/L  | 1               | 2/27/2014 10:13 PM  |
| Alkalinity, Total (As CaCO3)       | 410    |      | 6.00           | mg/L  | 1               | 2/27/2014 10:13 PM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental****Date:** 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-22  
**Collection Date:** 2/25/2014 01:35 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-10  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 1,370  |      | 5.00              | µmhos/cm | 1               | 2/27/2014 10:13 PM  |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 7.01   | H    | 0.100             | pH Units | 1               | 2/27/2014 10:13 PM  |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>JBA</b> |
| Total Dissolved Solids (Residue, Filterable) | 842    |      | 10.0              | mg/L     | 1               | 2/28/2014 11:00 AM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-23  
**Collection Date:** 2/25/2014 02:58 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-11  
**Matrix:** GROUNDWATER

| Analyses                       | Result | Qual | Report Limit       | Units | Dilution Factor           | Date Analyzed                      |
|--------------------------------|--------|------|--------------------|-------|---------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |        |      |                    |       |                           |                                    |
| Mercury                        | ND     |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/5/2014<br>1  | Analyst: OFO<br>3/5/2014 05:20 PM  |
| <b>DISSOLVED METALS</b>        |        |      |                    |       |                           |                                    |
| Aluminum                       | ND     |      | SW6020<br>0.0100   | mg/L  | Prep Date: 2/28/2014<br>1 | Analyst: SKS<br>2/28/2014 03:27 PM |
| Arsenic                        | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:27 PM                 |
| Barium                         | 0.162  |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:27 PM                 |
| Boron                          | 0.198  |      | 0.0200             | mg/L  | 1                         | 2/28/2014 03:27 PM                 |
| Cadmium                        | ND     |      | 0.00200            | mg/L  | 1                         | 2/28/2014 03:27 PM                 |
| Calcium                        | 320    |      | 5.00               | mg/L  | 10                        | 3/3/2014 02:37 PM                  |
| Chromium                       | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:27 PM                 |
| Cobalt                         | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:27 PM                 |
| Copper                         | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:27 PM                 |
| Iron                           | ND     |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:27 PM                 |
| Lead                           | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:27 PM                 |
| Magnesium                      | 33.7   |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:27 PM                 |
| Manganese                      | 0.0486 |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:27 PM                 |
| Molybdenum                     | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:27 PM                 |
| Nickel                         | 0.0410 |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:27 PM                 |
| Potassium                      | 4.35   |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:27 PM                 |
| Selenium                       | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:27 PM                 |
| Silver                         | ND     |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:27 PM                 |
| Sodium                         | 83.0   |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:27 PM                 |
| Uranium                        | ND     |      | 0.00500            | mg/L  | 1                         | 3/3/2014 02:09 PM                  |
| Zinc                           | 0.0224 |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:27 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |        |      |                    |       |                           |                                    |
| 1,1'-Biphenyl                  | ND     |      | SW8270<br>0.20     | µg/L  | Prep Date: 2/28/2014<br>1 | Analyst: LG<br>3/3/2014 04:32 PM   |
| 1-Methylnaphthalene            | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:32 PM                  |
| 2,4,5-Trichlorophenol          | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:32 PM                  |
| 2,4,6-Trichlorophenol          | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:32 PM                  |
| 2,4-Dichlorophenol             | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:32 PM                  |
| 2,4-Dimethylphenol             | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:32 PM                  |
| 2,4-Dinitrophenol              | ND     |      | 1.0                | µg/L  | 1                         | 3/3/2014 04:32 PM                  |
| 2,4-Dinitrotoluene             | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:32 PM                  |
| 2,6-Dinitrotoluene             | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:32 PM                  |
| 2-Chloronaphthalene            | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:32 PM                  |
| 2-Chlorophenol                 | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:32 PM                  |
| 2-Methylnaphthalene            | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:32 PM                  |
| 2-Methylphenol                 | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:32 PM                  |
| 2-Nitroaniline                 | ND     |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:32 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-23  
**Collection Date:** 2/25/2014 02:58 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-11  
**Matrix:** GROUNDWATER

| Analyses                    | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed     |
|-----------------------------|--------|------|--------------|-------|-----------------|-------------------|
| 2-Nitrophenol               | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| 3&4-Methylphenol            | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| 3,3'-Dichlorobenzidine      | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| 3-Nitroaniline              | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| 4,6-Dinitro-2-methylphenol  | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| 4-Bromophenyl phenyl ether  | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| 4-Chloro-3-methylphenol     | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| 4-Chloroaniline             | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| 4-Chlorophenyl phenyl ether | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| 4-Nitroaniline              | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| 4-Nitrophenol               | ND     |      | 1.0          | µg/L  | 1               | 3/3/2014 04:32 PM |
| Acenaphthene                | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Acenaphthylene              | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Acetophenone                | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Anthracene                  | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Atrazine                    | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Benz(a)anthracene           | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Benzaldehyde                | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Benzo(a)pyrene              | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Benzo(b)fluoranthene        | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Benzo(g,h,i)perylene        | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Benzo(k)fluoranthene        | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Bis(2-chloroethoxy)methane  | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Bis(2-chloroethyl)ether     | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Bis(2-chloroisopropyl)ether | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Bis(2-ethylhexyl)phthalate  | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Butyl benzyl phthalate      | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Caprolactam                 | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Carbazole                   | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Chrysene                    | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Dibenz(a,h)anthracene       | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Dibenzofuran                | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Diethyl phthalate           | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Dimethyl phthalate          | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Di-n-butyl phthalate        | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Di-n-octyl phthalate        | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Fluoranthene                | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Fluorene                    | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Hexachlorobenzene           | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |
| Hexachlorobutadiene         | ND     |      | 0.20         | µg/L  | 1               | 3/3/2014 04:32 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-23  
**Collection Date:** 2/25/2014 02:58 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-11  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:32 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:32 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:32 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:32 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:32 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:32 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:32 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:32 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:32 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:32 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:32 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:32 PM |
| Surr: 2,4,6-Tribromophenol | 88.5   |      | 34-129        | %REC  | 1                  | 3/3/2014 04:32 PM |
| Surr: 2-Fluorobiphenyl     | 77.2   |      | 40-125        | %REC  | 1                  | 3/3/2014 04:32 PM |
| Surr: 2-Fluorophenol       | 64.2   |      | 20-120        | %REC  | 1                  | 3/3/2014 04:32 PM |
| Surr: 4-Terphenyl-d14      | 78.0   |      | 40-135        | %REC  | 1                  | 3/3/2014 04:32 PM |
| Surr: Nitrobenzene-d5      | 76.5   |      | 41-120        | %REC  | 1                  | 3/3/2014 04:32 PM |
| Surr: Phenol-d6            | 64.9   |      | 20-120        | %REC  | 1                  | 3/3/2014 04:32 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:10 PM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:10 PM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:10 PM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:10 PM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:10 PM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:10 PM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:10 PM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:10 PM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:10 PM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:10 PM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 08:10 PM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 08:10 PM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:10 PM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 08:10 PM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 08:10 PM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:10 PM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:10 PM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:10 PM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:10 PM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 08:10 PM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:10 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-23  
**Collection Date:** 2/25/2014 02:58 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-11  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed       |
|------------------------------------|--------|------|----------------|-------|-----------------|---------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:10 PM   |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:10 PM   |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:10 PM   |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:10 PM   |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:10 PM   |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:10 PM   |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:10 PM   |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:10 PM   |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:10 PM   |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/2/2014 08:10 PM   |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:10 PM   |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/2/2014 08:10 PM   |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:10 PM   |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:10 PM   |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:10 PM   |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:10 PM   |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:10 PM   |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:10 PM   |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:10 PM   |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:10 PM   |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:10 PM   |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:10 PM   |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:10 PM   |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/2/2014 08:10 PM   |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/2/2014 08:10 PM   |
| Surr: 1,2-Dichloroethane-d4        | 106    |      | 70-125         | %REC  | 1               | 3/2/2014 08:10 PM   |
| Surr: 4-Bromofluorobenzene         | 94.7   |      | 72-125         | %REC  | 1               | 3/2/2014 08:10 PM   |
| Surr: Dibromofluoromethane         | 105    |      | 71-125         | %REC  | 1               | 3/2/2014 08:10 PM   |
| Surr: Toluene-d8                   | 94.7   |      | 75-125         | %REC  | 1               | 3/2/2014 08:10 PM   |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       |                 | <b>Analyst: JKP</b> |
| Chloride                           | 574    |      | 5.00           | mg/L  | 10              | 3/12/2014 01:03 PM  |
| Fluoride                           | 0.605  |      | 0.100          | mg/L  | 1               | 3/11/2014 08:43 AM  |
| Sulfate                            | 89.0   |      | 0.500          | mg/L  | 1               | 3/11/2014 08:43 AM  |
| Nitrate/Nitrite (as N)             | 3.41   |      | 1.00           | mg/L  | 5               | 3/10/2014 03:25 AM  |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       |                 | <b>Analyst: PPM</b> |
| Alkalinity, Bicarbonate (As CaCO3) | 295    |      | 6.00           | mg/L  | 1               | 2/28/2014 10:51 AM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 6.00           | mg/L  | 1               | 2/28/2014 10:51 AM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 6.00           | mg/L  | 1               | 2/28/2014 10:51 AM  |
| Alkalinity, Total (As CaCO3)       | 295    |      | 6.00           | mg/L  | 1               | 2/28/2014 10:51 AM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental**

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-23  
**Collection Date:** 2/25/2014 02:58 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-11  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 2,360  |      | 5.00              | µmhos/cm | 1               | 2/28/2014 10:51 AM  |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 6.91   | H    | 0.100             | pH Units | 1               | 2/28/2014 10:51 AM  |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 1,860  |      | 10.0              | mg/L     | 1               | 3/3/2014 06:00 PM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-20  
**Collection Date:** 2/26/2014 04:40 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-12  
**Matrix:** GROUNDWATER

| Analyses                       | Result  | Qual | Report Limit       | Units | Dilution Factor           | Date Analyzed                      |
|--------------------------------|---------|------|--------------------|-------|---------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |         |      |                    |       |                           |                                    |
| Mercury                        | ND      |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/5/2014<br>1  | Analyst: OFO<br>3/5/2014 05:21 PM  |
| <b>DISSOLVED METALS</b>        |         |      |                    |       |                           |                                    |
| Aluminum                       | ND      |      | SW6020<br>0.0100   | mg/L  | Prep Date: 2/28/2014<br>1 | Analyst: SKS<br>2/28/2014 03:29 PM |
| Arsenic                        | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:29 PM                 |
| Barium                         | 0.112   |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:29 PM                 |
| Boron                          | 0.173   |      | 0.0200             | mg/L  | 1                         | 2/28/2014 03:29 PM                 |
| Cadmium                        | ND      |      | 0.00200            | mg/L  | 1                         | 2/28/2014 03:29 PM                 |
| Calcium                        | 129     |      | 0.500              | mg/L  | 1                         | 2/28/2014 03:29 PM                 |
| Chromium                       | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:29 PM                 |
| Cobalt                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:29 PM                 |
| Copper                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:29 PM                 |
| Iron                           | ND      |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:29 PM                 |
| Lead                           | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:29 PM                 |
| Magnesium                      | 14.4    |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:29 PM                 |
| Manganese                      | 0.0107  |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:29 PM                 |
| Molybdenum                     | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:29 PM                 |
| Nickel                         | 0.00800 |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:29 PM                 |
| Potassium                      | 1.95    |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:29 PM                 |
| Selenium                       | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:29 PM                 |
| Silver                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:29 PM                 |
| Sodium                         | 41.1    |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:29 PM                 |
| Uranium                        | ND      |      | 0.00500            | mg/L  | 1                         | 3/3/2014 02:12 PM                  |
| Zinc                           | 0.00954 |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:29 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |         |      |                    |       |                           |                                    |
| 1,1'-Biphenyl                  | ND      |      | SW8270<br>0.20     | µg/L  | Prep Date: 2/28/2014<br>1 | Analyst: LG<br>3/3/2014 04:52 PM   |
| 1-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:52 PM                  |
| 2,4,5-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:52 PM                  |
| 2,4,6-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:52 PM                  |
| 2,4-Dichlorophenol             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:52 PM                  |
| 2,4-Dimethylphenol             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:52 PM                  |
| 2,4-Dinitrophenol              | ND      |      | 1.0                | µg/L  | 1                         | 3/3/2014 04:52 PM                  |
| 2,4-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:52 PM                  |
| 2,6-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:52 PM                  |
| 2-Chloronaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:52 PM                  |
| 2-Chlorophenol                 | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:52 PM                  |
| 2-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:52 PM                  |
| 2-Methylphenol                 | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:52 PM                  |
| 2-Nitroaniline                 | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 04:52 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-20  
**Collection Date:** 2/26/2014 04:40 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-12  
**Matrix:** GROUNDWATER

| Analyses                    | Result      | Qual | Report Limit | Units       | Dilution Factor | Date Analyzed     |
|-----------------------------|-------------|------|--------------|-------------|-----------------|-------------------|
| 2-Nitrophenol               | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| 3&4-Methylphenol            | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| 3,3'-Dichlorobenzidine      | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| 3-Nitroaniline              | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| 4,6-Dinitro-2-methylphenol  | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| 4-Bromophenyl phenyl ether  | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| 4-Chloro-3-methylphenol     | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| 4-Chloroaniline             | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| 4-Chlorophenyl phenyl ether | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| 4-Nitroaniline              | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| 4-Nitrophenol               | ND          |      | 1.0          | µg/L        | 1               | 3/3/2014 04:52 PM |
| Acenaphthene                | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| Acenaphthylene              | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| Acetophenone                | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| Anthracene                  | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| Atrazine                    | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| Benz(a)anthracene           | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| Benzaldehyde                | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| Benzo(a)pyrene              | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| Benzo(b)fluoranthene        | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| Benzo(g,h,i)perylene        | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| Benzo(k)fluoranthene        | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| Bis(2-chloroethoxy)methane  | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| Bis(2-chloroethyl)ether     | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| Bis(2-chloroisopropyl)ether | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| Bis(2-ethylhexyl)phthalate  | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| Butyl benzyl phthalate      | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| <b>Caprolactam</b>          | <b>0.21</b> |      | <b>0.20</b>  | <b>µg/L</b> | 1               | 3/3/2014 04:52 PM |
| Carbazole                   | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| Chrysene                    | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| Dibenz(a,h)anthracene       | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| Dibenzofuran                | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| Diethyl phthalate           | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| Dimethyl phthalate          | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| Di-n-butyl phthalate        | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| Di-n-octyl phthalate        | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| Fluoranthene                | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| Fluorene                    | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| Hexachlorobenzene           | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |
| Hexachlorobutadiene         | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 04:52 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-20  
**Collection Date:** 2/26/2014 04:40 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-12  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:52 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:52 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:52 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:52 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:52 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:52 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:52 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:52 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:52 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:52 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:52 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 04:52 PM |
| Surr: 2,4,6-Tribromophenol | 94.6   |      | 34-129        | %REC  | 1                  | 3/3/2014 04:52 PM |
| Surr: 2-Fluorobiphenyl     | 75.0   |      | 40-125        | %REC  | 1                  | 3/3/2014 04:52 PM |
| Surr: 2-Fluorophenol       | 65.5   |      | 20-120        | %REC  | 1                  | 3/3/2014 04:52 PM |
| Surr: 4-Terphenyl-d14      | 79.1   |      | 40-135        | %REC  | 1                  | 3/3/2014 04:52 PM |
| Surr: Nitrobenzene-d5      | 69.0   |      | 41-120        | %REC  | 1                  | 3/3/2014 04:52 PM |
| Surr: Phenol-d6            | 64.7   |      | 20-120        | %REC  | 1                  | 3/3/2014 04:52 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:36 PM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:36 PM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:36 PM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:36 PM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:36 PM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:36 PM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:36 PM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:36 PM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:36 PM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:36 PM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 08:36 PM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 08:36 PM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:36 PM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 08:36 PM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 08:36 PM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:36 PM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:36 PM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:36 PM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:36 PM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 08:36 PM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 08:36 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-20  
**Collection Date:** 2/26/2014 04:40 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-12  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed       |
|------------------------------------|--------|------|----------------|-------|-----------------|---------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:36 PM   |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:36 PM   |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:36 PM   |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:36 PM   |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:36 PM   |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:36 PM   |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:36 PM   |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:36 PM   |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:36 PM   |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/2/2014 08:36 PM   |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:36 PM   |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/2/2014 08:36 PM   |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:36 PM   |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:36 PM   |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:36 PM   |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:36 PM   |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:36 PM   |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:36 PM   |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:36 PM   |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:36 PM   |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:36 PM   |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:36 PM   |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 08:36 PM   |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/2/2014 08:36 PM   |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/2/2014 08:36 PM   |
| Surr: 1,2-Dichloroethane-d4        | 104    |      | 70-125         | %REC  | 1               | 3/2/2014 08:36 PM   |
| Surr: 4-Bromofluorobenzene         | 95.5   |      | 72-125         | %REC  | 1               | 3/2/2014 08:36 PM   |
| Surr: Dibromofluoromethane         | 100    |      | 71-125         | %REC  | 1               | 3/2/2014 08:36 PM   |
| Surr: Toluene-d8                   | 94.2   |      | 75-125         | %REC  | 1               | 3/2/2014 08:36 PM   |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       |                 | <b>Analyst: JKP</b> |
| Chloride                           | 159    |      | 5.00           | mg/L  | 10              | 3/12/2014 01:17 PM  |
| Fluoride                           | 0.664  |      | 0.100          | mg/L  | 1               | 3/11/2014 10:11 AM  |
| Sulfate                            | 53.4   |      | 0.500          | mg/L  | 1               | 3/11/2014 10:11 AM  |
| Nitrate/Nitrite (as N)             | 2.70   |      | 1.00           | mg/L  | 5               | 3/10/2014 03:39 AM  |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       |                 | <b>Analyst: PPM</b> |
| Alkalinity, Bicarbonate (As CaCO3) | 234    |      | 6.00           | mg/L  | 1               | 2/28/2014 10:57 AM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 6.00           | mg/L  | 1               | 2/28/2014 10:57 AM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 6.00           | mg/L  | 1               | 2/28/2014 10:57 AM  |
| Alkalinity, Total (As CaCO3)       | 234    |      | 6.00           | mg/L  | 1               | 2/28/2014 10:57 AM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental****Date:** 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-20  
**Collection Date:** 2/26/2014 04:40 PM

**Work Order:** 14021211  
**Lab ID:** 14021211-12  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 1,030  |      | 5.00              | µmhos/cm | 1               | 2/28/2014 10:57 AM  |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 7.28   | H    | 0.100             | pH Units | 1               | 2/28/2014 10:57 AM  |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 696    |      | 10.0              | mg/L     | 1               | 3/3/2014 06:00 PM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-26  
**Collection Date:** 2/26/2014 10:55 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-13  
**Matrix:** GROUNDWATER

| Analyses                       | Result  | Qual | Report Limit       | Units | Dilution Factor           | Date Analyzed                      |
|--------------------------------|---------|------|--------------------|-------|---------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |         |      |                    |       |                           |                                    |
| Mercury                        | ND      |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/5/2014<br>1  | Analyst: OFO<br>3/5/2014 04:54 PM  |
| <b>DISSOLVED METALS</b>        |         |      |                    |       |                           |                                    |
| Aluminum                       | 0.0236  |      | SW6020<br>0.0100   | mg/L  | Prep Date: 2/28/2014<br>1 | Analyst: SKS<br>2/28/2014 03:32 PM |
| Arsenic                        | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:32 PM                 |
| Barium                         | 0.0739  |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:32 PM                 |
| Boron                          | 0.198   |      | 0.0200             | mg/L  | 1                         | 2/28/2014 03:32 PM                 |
| Cadmium                        | ND      |      | 0.00200            | mg/L  | 1                         | 2/28/2014 03:32 PM                 |
| Calcium                        | 174     |      | 0.500              | mg/L  | 1                         | 2/28/2014 03:32 PM                 |
| Chromium                       | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:32 PM                 |
| Cobalt                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:32 PM                 |
| Copper                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:32 PM                 |
| Iron                           | ND      |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:32 PM                 |
| Lead                           | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:32 PM                 |
| Magnesium                      | 21.2    |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:32 PM                 |
| Manganese                      | 0.00979 |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:32 PM                 |
| Molybdenum                     | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:32 PM                 |
| Nickel                         | 0.0128  |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:32 PM                 |
| Potassium                      | 2.74    |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:32 PM                 |
| Selenium                       | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:32 PM                 |
| Silver                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:32 PM                 |
| Sodium                         | 78.2    |      | 0.200              | mg/L  | 1                         | 2/28/2014 03:32 PM                 |
| Uranium                        | 0.00583 |      | 0.00500            | mg/L  | 1                         | 3/3/2014 02:19 PM                  |
| Zinc                           | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 03:32 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |         |      |                    |       |                           |                                    |
| 1,1'-Biphenyl                  | ND      |      | SW8270<br>0.20     | µg/L  | Prep Date: 2/28/2014<br>1 | Analyst: LG<br>2/28/2014 05:37 PM  |
| 1-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 2/28/2014 05:37 PM                 |
| 2,4,5-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                         | 2/28/2014 05:37 PM                 |
| 2,4,6-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                         | 2/28/2014 05:37 PM                 |
| 2,4-Dichlorophenol             | ND      |      | 0.20               | µg/L  | 1                         | 2/28/2014 05:37 PM                 |
| 2,4-Dimethylphenol             | ND      |      | 0.20               | µg/L  | 1                         | 2/28/2014 05:37 PM                 |
| 2,4-Dinitrophenol              | ND      |      | 1.0                | µg/L  | 1                         | 2/28/2014 05:37 PM                 |
| 2,4-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                         | 2/28/2014 05:37 PM                 |
| 2,6-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                         | 2/28/2014 05:37 PM                 |
| 2-Chloronaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 2/28/2014 05:37 PM                 |
| 2-Chlorophenol                 | ND      |      | 0.20               | µg/L  | 1                         | 2/28/2014 05:37 PM                 |
| 2-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 2/28/2014 05:37 PM                 |
| 2-Methylphenol                 | ND      |      | 0.20               | µg/L  | 1                         | 2/28/2014 05:37 PM                 |
| 2-Nitroaniline                 | ND      |      | 0.20               | µg/L  | 1                         | 2/28/2014 05:37 PM                 |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-26  
**Collection Date:** 2/26/2014 10:55 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-13  
**Matrix:** GROUNDWATER

| Analyses                    | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed      |
|-----------------------------|--------|------|--------------|-------|-----------------|--------------------|
| 2-Nitrophenol               | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| 3&4-Methylphenol            | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| 3,3'-Dichlorobenzidine      | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| 3-Nitroaniline              | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| 4,6-Dinitro-2-methylphenol  | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| 4-Bromophenyl phenyl ether  | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| 4-Chloro-3-methylphenol     | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| 4-Chloroaniline             | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| 4-Chlorophenyl phenyl ether | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| 4-Nitroaniline              | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| 4-Nitrophenol               | ND     |      | 1.0          | µg/L  | 1               | 2/28/2014 05:37 PM |
| Acenaphthene                | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Acenaphthylene              | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Acetophenone                | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Anthracene                  | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Atrazine                    | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Benz(a)anthracene           | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Benzaldehyde                | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Benzo(a)pyrene              | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Benzo(b)fluoranthene        | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Benzo(g,h,i)perylene        | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Benzo(k)fluoranthene        | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Bis(2-chloroethoxy)methane  | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Bis(2-chloroethyl)ether     | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Bis(2-chloroisopropyl)ether | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Bis(2-ethylhexyl)phthalate  | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Butyl benzyl phthalate      | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Caprolactam                 | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Carbazole                   | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Chrysene                    | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Dibenz(a,h)anthracene       | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Dibenzofuran                | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Diethyl phthalate           | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Dimethyl phthalate          | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Di-n-butyl phthalate        | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Di-n-octyl phthalate        | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Fluoranthene                | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Fluorene                    | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Hexachlorobenzene           | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |
| Hexachlorobutadiene         | ND     |      | 0.20         | µg/L  | 1               | 2/28/2014 05:37 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-26  
**Collection Date:** 2/26/2014 10:55 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-13  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed      |
|----------------------------|--------|------|---------------|-------|--------------------|--------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 2/28/2014 05:37 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 2/28/2014 05:37 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 2/28/2014 05:37 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 2/28/2014 05:37 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 2/28/2014 05:37 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 2/28/2014 05:37 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 2/28/2014 05:37 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 2/28/2014 05:37 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 2/28/2014 05:37 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 2/28/2014 05:37 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 2/28/2014 05:37 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 2/28/2014 05:37 PM |
| Surr: 2,4,6-Tribromophenol | 72.3   |      | 34-129        | %REC  | 1                  | 2/28/2014 05:37 PM |
| Surr: 2-Fluorobiphenyl     | 73.1   |      | 40-125        | %REC  | 1                  | 2/28/2014 05:37 PM |
| Surr: 2-Fluorophenol       | 63.2   |      | 20-120        | %REC  | 1                  | 2/28/2014 05:37 PM |
| Surr: 4-Terphenyl-d14      | 81.4   |      | 40-135        | %REC  | 1                  | 2/28/2014 05:37 PM |
| Surr: Nitrobenzene-d5      | 67.6   |      | 41-120        | %REC  | 1                  | 2/28/2014 05:37 PM |
| Surr: Phenol-d6            | 64.3   |      | 20-120        | %REC  | 1                  | 2/28/2014 05:37 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                    |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 12:58 PM  |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 12:58 PM  |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 12:58 PM  |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 12:58 PM  |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 12:58 PM  |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 12:58 PM  |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 12:58 PM  |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 12:58 PM  |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 12:58 PM  |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 12:58 PM  |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 12:58 PM  |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 12:58 PM  |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 12:58 PM  |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 12:58 PM  |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 12:58 PM  |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 12:58 PM  |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 12:58 PM  |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 12:58 PM  |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 12:58 PM  |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 12:58 PM  |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 12:58 PM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-26  
**Collection Date:** 2/26/2014 10:55 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-13  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed       |
|------------------------------------|--------|------|----------------|-------|-----------------|---------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 12:58 PM   |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 12:58 PM   |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 12:58 PM   |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 12:58 PM   |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 12:58 PM   |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 12:58 PM   |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 12:58 PM   |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 12:58 PM   |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 12:58 PM   |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/2/2014 12:58 PM   |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 12:58 PM   |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/2/2014 12:58 PM   |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 12:58 PM   |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 12:58 PM   |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 12:58 PM   |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 12:58 PM   |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 12:58 PM   |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 12:58 PM   |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 12:58 PM   |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 12:58 PM   |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 12:58 PM   |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 12:58 PM   |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 12:58 PM   |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/2/2014 12:58 PM   |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/2/2014 12:58 PM   |
| Surr: 1,2-Dichloroethane-d4        | 109    |      | 70-125         | %REC  | 1               | 3/2/2014 12:58 PM   |
| Surr: 4-Bromofluorobenzene         | 95.7   |      | 72-125         | %REC  | 1               | 3/2/2014 12:58 PM   |
| Surr: Dibromofluoromethane         | 103    |      | 71-125         | %REC  | 1               | 3/2/2014 12:58 PM   |
| Surr: Toluene-d8                   | 95.8   |      | 75-125         | %REC  | 1               | 3/2/2014 12:58 PM   |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       |                 | <b>Analyst: JKP</b> |
| Chloride                           | 187    |      | 5.00           | mg/L  | 10              | 3/12/2014 01:32 PM  |
| Fluoride                           | 0.470  |      | 0.100          | mg/L  | 1               | 3/11/2014 09:12 AM  |
| Sulfate                            | 146    |      | 5.00           | mg/L  | 10              | 3/12/2014 01:32 PM  |
| Nitrate/Nitrite (as N)             | 3.11   |      | 1.00           | mg/L  | 5               | 3/10/2014 03:54 AM  |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       |                 | <b>Analyst: PPM</b> |
| Alkalinity, Bicarbonate (As CaCO3) | 342    |      | 6.00           | mg/L  | 1               | 2/28/2014 11:13 AM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 6.00           | mg/L  | 1               | 2/28/2014 11:13 AM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 6.00           | mg/L  | 1               | 2/28/2014 11:13 AM  |
| Alkalinity, Total (As CaCO3)       | 342    |      | 6.00           | mg/L  | 1               | 2/28/2014 11:13 AM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental****Date:** 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-26  
**Collection Date:** 2/26/2014 10:55 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-13  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 1,460  |      | 5.00              | µmhos/cm | 1               | 2/28/2014 11:13 AM  |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 7.02   | H    | 0.100             | pH Units | 1               | 2/28/2014 11:13 AM  |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 944    |      | 10.0              | mg/L     | 1               | 3/3/2014 06:00 PM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-10  
**Collection Date:** 2/26/2014 08:50 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-15  
**Matrix:** GROUNDWATER

| Analyses                       | Result  | Qual | Report Limit       | Units | Dilution Factor           | Date Analyzed                      |
|--------------------------------|---------|------|--------------------|-------|---------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |         |      |                    |       |                           |                                    |
| Mercury                        | ND      |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/5/2014<br>1  | Analyst: OFO<br>3/5/2014 05:23 PM  |
| <b>DISSOLVED METALS</b>        |         |      |                    |       |                           |                                    |
| Aluminum                       | ND      |      | SW6020<br>0.0100   | mg/L  | Prep Date: 2/28/2014<br>1 | Analyst: SKS<br>2/28/2014 04:36 PM |
| Arsenic                        | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:36 PM                 |
| Barium                         | 0.106   |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:36 PM                 |
| Boron                          | 0.147   |      | 0.0200             | mg/L  | 1                         | 2/28/2014 04:36 PM                 |
| Cadmium                        | ND      |      | 0.00200            | mg/L  | 1                         | 2/28/2014 04:36 PM                 |
| Calcium                        | 113     |      | 0.500              | mg/L  | 1                         | 2/28/2014 04:36 PM                 |
| Chromium                       | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:36 PM                 |
| Cobalt                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:36 PM                 |
| Copper                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:36 PM                 |
| Iron                           | ND      |      | 0.200              | mg/L  | 1                         | 2/28/2014 04:36 PM                 |
| Lead                           | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:36 PM                 |
| Magnesium                      | 12.4    |      | 0.200              | mg/L  | 1                         | 2/28/2014 04:36 PM                 |
| Manganese                      | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:36 PM                 |
| Molybdenum                     | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:36 PM                 |
| Nickel                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:36 PM                 |
| Potassium                      | 2.21    |      | 0.200              | mg/L  | 1                         | 2/28/2014 04:36 PM                 |
| Selenium                       | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:36 PM                 |
| Silver                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:36 PM                 |
| Sodium                         | 40.6    |      | 0.200              | mg/L  | 1                         | 2/28/2014 04:36 PM                 |
| Uranium                        | ND      |      | 0.00500            | mg/L  | 1                         | 3/4/2014 02:15 PM                  |
| Zinc                           | 0.00979 |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:36 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |         |      |                    |       |                           |                                    |
| 1,1'-Biphenyl                  | ND      |      | SW8270<br>0.20     | µg/L  | Prep Date: 2/28/2014<br>1 | Analyst: LG<br>3/3/2014 05:12 PM   |
| 1-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:12 PM                  |
| 2,4,5-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:12 PM                  |
| 2,4,6-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:12 PM                  |
| 2,4-Dichlorophenol             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:12 PM                  |
| 2,4-Dimethylphenol             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:12 PM                  |
| 2,4-Dinitrophenol              | ND      |      | 1.0                | µg/L  | 1                         | 3/3/2014 05:12 PM                  |
| 2,4-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:12 PM                  |
| 2,6-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:12 PM                  |
| 2-Chloronaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:12 PM                  |
| 2-Chlorophenol                 | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:12 PM                  |
| 2-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:12 PM                  |
| 2-Methylphenol                 | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:12 PM                  |
| 2-Nitroaniline                 | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:12 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-10  
**Collection Date:** 2/26/2014 08:50 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-15  
**Matrix:** GROUNDWATER

| Analyses                          | Result      | Qual | Report Limit | Units       | Dilution Factor | Date Analyzed            |
|-----------------------------------|-------------|------|--------------|-------------|-----------------|--------------------------|
| 2-Nitrophenol                     | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| 3&4-Methylphenol                  | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| 3,3'-Dichlorobenzidine            | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| 3-Nitroaniline                    | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| 4,6-Dinitro-2-methylphenol        | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| 4-Bromophenyl phenyl ether        | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| 4-Chloro-3-methylphenol           | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| 4-Chloroaniline                   | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| 4-Chlorophenyl phenyl ether       | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| 4-Nitroaniline                    | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| 4-Nitrophenol                     | ND          |      | 1.0          | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Acenaphthene                      | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Acenaphthylene                    | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Acetophenone                      | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Anthracene                        | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Atrazine                          | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Benz(a)anthracene                 | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Benzaldehyde                      | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Benzo(a)pyrene                    | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Benzo(b)fluoranthene              | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Benzo(g,h,i)perylene              | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Benzo(k)fluoranthene              | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Bis(2-chloroethoxy)methane        | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Bis(2-chloroethyl)ether           | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Bis(2-chloroisopropyl)ether       | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>0.29</b> |      | <b>0.20</b>  | <b>µg/L</b> | <b>1</b>        | <b>3/3/2014 05:12 PM</b> |
| Butyl benzyl phthalate            | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Caprolactam                       | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Carbazole                         | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Chrysene                          | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Dibenz(a,h)anthracene             | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Dibenzofuran                      | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Diethyl phthalate                 | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Dimethyl phthalate                | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Di-n-butyl phthalate              | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Di-n-octyl phthalate              | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Fluoranthene                      | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Fluorene                          | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Hexachlorobenzene                 | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |
| Hexachlorobutadiene               | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:12 PM        |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-10  
**Collection Date:** 2/26/2014 08:50 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-15  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:12 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:12 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:12 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:12 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:12 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:12 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:12 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:12 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:12 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:12 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:12 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:12 PM |
| Surr: 2,4,6-Tribromophenol | 76.5   |      | 34-129        | %REC  | 1                  | 3/3/2014 05:12 PM |
| Surr: 2-Fluorobiphenyl     | 71.6   |      | 40-125        | %REC  | 1                  | 3/3/2014 05:12 PM |
| Surr: 2-Fluorophenol       | 62.9   |      | 20-120        | %REC  | 1                  | 3/3/2014 05:12 PM |
| Surr: 4-Terphenyl-d14      | 74.7   |      | 40-135        | %REC  | 1                  | 3/3/2014 05:12 PM |
| Surr: Nitrobenzene-d5      | 66.3   |      | 41-120        | %REC  | 1                  | 3/3/2014 05:12 PM |
| Surr: Phenol-d6            | 62.8   |      | 20-120        | %REC  | 1                  | 3/3/2014 05:12 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:28 PM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:28 PM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:28 PM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:28 PM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:28 PM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:28 PM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:28 PM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:28 PM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:28 PM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:28 PM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 09:28 PM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 09:28 PM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:28 PM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 09:28 PM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 09:28 PM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:28 PM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:28 PM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:28 PM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:28 PM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 09:28 PM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:28 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-10  
**Collection Date:** 2/26/2014 08:50 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-15  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed       |
|------------------------------------|--------|------|----------------|-------|-----------------|---------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:28 PM   |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:28 PM   |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:28 PM   |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:28 PM   |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:28 PM   |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:28 PM   |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:28 PM   |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:28 PM   |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:28 PM   |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/2/2014 09:28 PM   |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:28 PM   |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/2/2014 09:28 PM   |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:28 PM   |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:28 PM   |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:28 PM   |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:28 PM   |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:28 PM   |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:28 PM   |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:28 PM   |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:28 PM   |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:28 PM   |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:28 PM   |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:28 PM   |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/2/2014 09:28 PM   |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/2/2014 09:28 PM   |
| Surr: 1,2-Dichloroethane-d4        | 107    |      | 70-125         | %REC  | 1               | 3/2/2014 09:28 PM   |
| Surr: 4-Bromofluorobenzene         | 95.6   |      | 72-125         | %REC  | 1               | 3/2/2014 09:28 PM   |
| Surr: Dibromofluoromethane         | 103    |      | 71-125         | %REC  | 1               | 3/2/2014 09:28 PM   |
| Surr: Toluene-d8                   | 94.0   |      | 75-125         | %REC  | 1               | 3/2/2014 09:28 PM   |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       |                 | <b>Analyst: JKP</b> |
| Chloride                           | 112    |      | 2.50           | mg/L  | 5               | 3/12/2014 02:16 PM  |
| Fluoride                           | 0.674  |      | 0.100          | mg/L  | 1               | 3/11/2014 09:56 AM  |
| Sulfate                            | 70.9   |      | 0.500          | mg/L  | 1               | 3/11/2014 09:56 AM  |
| Nitrate/Nitrite (as N)             | 2.43   |      | 1.00           | mg/L  | 5               | 3/10/2014 05:07 AM  |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       |                 | <b>Analyst: PPM</b> |
| Alkalinity, Bicarbonate (As CaCO3) | 208    |      | 6.00           | mg/L  | 1               | 2/28/2014 11:18 AM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 6.00           | mg/L  | 1               | 2/28/2014 11:18 AM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 6.00           | mg/L  | 1               | 2/28/2014 11:18 AM  |
| Alkalinity, Total (As CaCO3)       | 208    |      | 6.00           | mg/L  | 1               | 2/28/2014 11:18 AM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental****Date:** 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-10  
**Collection Date:** 2/26/2014 08:50 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-15  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 899    |      | 5.00              | µmhos/cm | 1               | 2/28/2014 11:18 AM  |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 7.34   | H    | 0.100             | pH Units | 1               | 2/28/2014 11:18 AM  |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 568    |      | 10.0              | mg/L     | 1               | 3/3/2014 06:00 PM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-9  
**Collection Date:** 2/26/2014 10:25 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-16  
**Matrix:** GROUNDWATER

| Analyses                       | Result  | Qual | Report Limit       | Units | Dilution Factor           | Date Analyzed                      |
|--------------------------------|---------|------|--------------------|-------|---------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |         |      |                    |       |                           |                                    |
| Mercury                        | ND      |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/5/2014<br>1  | Analyst: OFO<br>3/5/2014 05:28 PM  |
| <b>DISSOLVED METALS</b>        |         |      |                    |       |                           |                                    |
| Aluminum                       | 0.0161  |      | SW6020<br>0.0100   | mg/L  | Prep Date: 2/28/2014<br>1 | Analyst: SKS<br>2/28/2014 04:38 PM |
| Arsenic                        | 0.0224  |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:38 PM                 |
| Barium                         | 0.0737  |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:38 PM                 |
| Boron                          | 0.152   |      | 0.0200             | mg/L  | 1                         | 2/28/2014 04:38 PM                 |
| Cadmium                        | ND      |      | 0.00200            | mg/L  | 1                         | 2/28/2014 04:38 PM                 |
| Calcium                        | 24.5    |      | 0.500              | mg/L  | 1                         | 2/28/2014 04:38 PM                 |
| Chromium                       | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:38 PM                 |
| Cobalt                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:38 PM                 |
| Copper                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:38 PM                 |
| Iron                           | ND      |      | 0.200              | mg/L  | 1                         | 2/28/2014 04:38 PM                 |
| Lead                           | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:38 PM                 |
| Magnesium                      | 2.48    |      | 0.200              | mg/L  | 1                         | 2/28/2014 04:38 PM                 |
| Manganese                      | 0.00588 |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:38 PM                 |
| Molybdenum                     | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:38 PM                 |
| Nickel                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:38 PM                 |
| Potassium                      | 2.48    |      | 0.200              | mg/L  | 1                         | 2/28/2014 04:38 PM                 |
| Selenium                       | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:38 PM                 |
| Silver                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:38 PM                 |
| Sodium                         | 137     |      | 0.200              | mg/L  | 1                         | 2/28/2014 04:38 PM                 |
| Uranium                        | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:38 PM                 |
| Zinc                           | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:38 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |         |      |                    |       |                           |                                    |
| 1,1'-Biphenyl                  | ND      |      | SW8270<br>0.20     | µg/L  | Prep Date: 2/28/2014<br>1 | Analyst: LG<br>3/3/2014 05:32 PM   |
| 1-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:32 PM                  |
| 2,4,5-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:32 PM                  |
| 2,4,6-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:32 PM                  |
| 2,4-Dichlorophenol             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:32 PM                  |
| 2,4-Dimethylphenol             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:32 PM                  |
| 2,4-Dinitrophenol              | ND      |      | 1.0                | µg/L  | 1                         | 3/3/2014 05:32 PM                  |
| 2,4-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:32 PM                  |
| 2,6-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:32 PM                  |
| 2-Chloronaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:32 PM                  |
| 2-Chlorophenol                 | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:32 PM                  |
| 2-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:32 PM                  |
| 2-Methylphenol                 | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:32 PM                  |
| 2-Nitroaniline                 | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:32 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-9  
**Collection Date:** 2/26/2014 10:25 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-16  
**Matrix:** GROUNDWATER

| Analyses                          | Result      | Qual | Report Limit | Units       | Dilution Factor | Date Analyzed     |
|-----------------------------------|-------------|------|--------------|-------------|-----------------|-------------------|
| 2-Nitrophenol                     | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| 3&4-Methylphenol                  | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| 3,3'-Dichlorobenzidine            | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| 3-Nitroaniline                    | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| 4,6-Dinitro-2-methylphenol        | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| 4-Bromophenyl phenyl ether        | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| 4-Chloro-3-methylphenol           | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| 4-Chloroaniline                   | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| 4-Chlorophenyl phenyl ether       | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| 4-Nitroaniline                    | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| 4-Nitrophenol                     | ND          |      | 1.0          | µg/L        | 1               | 3/3/2014 05:32 PM |
| Acenaphthene                      | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| Acenaphthylene                    | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| Acetophenone                      | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| Anthracene                        | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| Atrazine                          | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| Benz(a)anthracene                 | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| Benzaldehyde                      | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| Benzo(a)pyrene                    | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| Benzo(b)fluoranthene              | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| Benzo(g,h,i)perylene              | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| Benzo(k)fluoranthene              | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| Bis(2-chloroethoxy)methane        | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| Bis(2-chloroethyl)ether           | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| Bis(2-chloroisopropyl)ether       | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>0.46</b> |      | <b>0.20</b>  | <b>µg/L</b> | 1               | 3/3/2014 05:32 PM |
| Butyl benzyl phthalate            | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| Caprolactam                       | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| Carbazole                         | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| Chrysene                          | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| Dibenz(a,h)anthracene             | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| Dibenzofuran                      | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| Diethyl phthalate                 | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| Dimethyl phthalate                | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| Di-n-butyl phthalate              | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| Di-n-octyl phthalate              | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| Fluoranthene                      | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| Fluorene                          | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| Hexachlorobenzene                 | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |
| Hexachlorobutadiene               | ND          |      | 0.20         | µg/L        | 1               | 3/3/2014 05:32 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-9  
**Collection Date:** 2/26/2014 10:25 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-16  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:32 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:32 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:32 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:32 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:32 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:32 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:32 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:32 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:32 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:32 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:32 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:32 PM |
| Surr: 2,4,6-Tribromophenol | 79.8   |      | 34-129        | %REC  | 1                  | 3/3/2014 05:32 PM |
| Surr: 2-Fluorobiphenyl     | 68.4   |      | 40-125        | %REC  | 1                  | 3/3/2014 05:32 PM |
| Surr: 2-Fluorophenol       | 59.7   |      | 20-120        | %REC  | 1                  | 3/3/2014 05:32 PM |
| Surr: 4-Terphenyl-d14      | 76.1   |      | 40-135        | %REC  | 1                  | 3/3/2014 05:32 PM |
| Surr: Nitrobenzene-d5      | 63.7   |      | 41-120        | %REC  | 1                  | 3/3/2014 05:32 PM |
| Surr: Phenol-d6            | 59.2   |      | 20-120        | %REC  | 1                  | 3/3/2014 05:32 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:54 PM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:54 PM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:54 PM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:54 PM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:54 PM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:54 PM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:54 PM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:54 PM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:54 PM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:54 PM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 09:54 PM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 09:54 PM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:54 PM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 09:54 PM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 09:54 PM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:54 PM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:54 PM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:54 PM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:54 PM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/2/2014 09:54 PM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/2/2014 09:54 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-9  
**Collection Date:** 2/26/2014 10:25 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-16  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed       |
|------------------------------------|--------|------|----------------|-------|-----------------|---------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:54 PM   |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:54 PM   |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:54 PM   |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:54 PM   |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:54 PM   |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:54 PM   |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:54 PM   |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:54 PM   |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:54 PM   |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/2/2014 09:54 PM   |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:54 PM   |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/2/2014 09:54 PM   |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:54 PM   |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:54 PM   |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:54 PM   |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:54 PM   |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:54 PM   |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:54 PM   |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:54 PM   |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:54 PM   |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:54 PM   |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:54 PM   |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/2/2014 09:54 PM   |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/2/2014 09:54 PM   |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/2/2014 09:54 PM   |
| Surr: 1,2-Dichloroethane-d4        | 104    |      | 70-125         | %REC  | 1               | 3/2/2014 09:54 PM   |
| Surr: 4-Bromofluorobenzene         | 94.8   |      | 72-125         | %REC  | 1               | 3/2/2014 09:54 PM   |
| Surr: Dibromofluoromethane         | 104    |      | 71-125         | %REC  | 1               | 3/2/2014 09:54 PM   |
| Surr: Toluene-d8                   | 95.0   |      | 75-125         | %REC  | 1               | 3/2/2014 09:54 PM   |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       |                 | <b>Analyst: JKP</b> |
| Chloride                           | 54.0   |      | 0.500          | mg/L  | 1               | 3/11/2014 10:25 AM  |
| Fluoride                           | 1.48   |      | 0.100          | mg/L  | 1               | 3/11/2014 10:25 AM  |
| Sulfate                            | 71.5   |      | 0.500          | mg/L  | 1               | 3/11/2014 10:25 AM  |
| Nitrate/Nitrite (as N)             | 3.17   |      | 1.00           | mg/L  | 5               | 3/10/2014 05:21 AM  |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       |                 | <b>Analyst: PPM</b> |
| Alkalinity, Bicarbonate (As CaCO3) | 271    |      | 6.00           | mg/L  | 1               | 2/28/2014 11:24 AM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 6.00           | mg/L  | 1               | 2/28/2014 11:24 AM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 6.00           | mg/L  | 1               | 2/28/2014 11:24 AM  |
| Alkalinity, Total (As CaCO3)       | 271    |      | 6.00           | mg/L  | 1               | 2/28/2014 11:24 AM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

## ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-9  
**Collection Date:** 2/26/2014 10:25 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-16  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 801    |      | 5.00              | µmhos/cm | 1               | 2/28/2014 11:24 AM  |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 7.77   | H    | 0.100             | pH Units | 1               | 2/28/2014 11:24 AM  |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 452    |      | 10.0              | mg/L     | 1               | 3/3/2014 06:00 PM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-3  
**Collection Date:** 2/26/2014 11:43 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-17  
**Matrix:** GROUNDWATER

| Analyses                       | Result  | Qual | Report Limit       | Units | Dilution Factor           | Date Analyzed                      |
|--------------------------------|---------|------|--------------------|-------|---------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |         |      |                    |       |                           |                                    |
| Mercury                        | ND      |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/5/2014<br>1  | Analyst: OFO<br>3/5/2014 05:30 PM  |
| <b>DISSOLVED METALS</b>        |         |      |                    |       |                           |                                    |
| Aluminum                       | ND      |      | SW6020<br>0.0100   | mg/L  | Prep Date: 2/28/2014<br>1 | Analyst: SKS<br>2/28/2014 04:40 PM |
| Arsenic                        | 0.0179  |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:40 PM                 |
| Barium                         | 0.0655  |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:40 PM                 |
| Boron                          | 0.164   |      | 0.0200             | mg/L  | 1                         | 2/28/2014 04:40 PM                 |
| Cadmium                        | ND      |      | 0.00200            | mg/L  | 1                         | 2/28/2014 04:40 PM                 |
| Calcium                        | 23.9    |      | 0.500              | mg/L  | 1                         | 2/28/2014 04:40 PM                 |
| Chromium                       | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:40 PM                 |
| Cobalt                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:40 PM                 |
| Copper                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:40 PM                 |
| Iron                           | ND      |      | 0.200              | mg/L  | 1                         | 2/28/2014 04:40 PM                 |
| Lead                           | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:40 PM                 |
| Magnesium                      | 2.62    |      | 0.200              | mg/L  | 1                         | 2/28/2014 04:40 PM                 |
| Manganese                      | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:40 PM                 |
| Molybdenum                     | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:40 PM                 |
| Nickel                         | 0.00560 |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:40 PM                 |
| Potassium                      | 2.06    |      | 0.200              | mg/L  | 1                         | 2/28/2014 04:40 PM                 |
| Selenium                       | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:40 PM                 |
| Silver                         | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:40 PM                 |
| Sodium                         | 122     |      | 0.200              | mg/L  | 1                         | 2/28/2014 04:40 PM                 |
| Uranium                        | ND      |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:40 PM                 |
| Zinc                           | 0.00527 |      | 0.00500            | mg/L  | 1                         | 2/28/2014 04:40 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |         |      |                    |       |                           |                                    |
| 1,1'-Biphenyl                  | ND      |      | SW8270<br>0.20     | µg/L  | Prep Date: 2/28/2014<br>1 | Analyst: LG<br>3/3/2014 05:52 PM   |
| 1-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:52 PM                  |
| 2,4,5-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:52 PM                  |
| 2,4,6-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:52 PM                  |
| 2,4-Dichlorophenol             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:52 PM                  |
| 2,4-Dimethylphenol             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:52 PM                  |
| 2,4-Dinitrophenol              | ND      |      | 1.0                | µg/L  | 1                         | 3/3/2014 05:52 PM                  |
| 2,4-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:52 PM                  |
| 2,6-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:52 PM                  |
| 2-Chloronaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:52 PM                  |
| 2-Chlorophenol                 | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:52 PM                  |
| 2-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:52 PM                  |
| 2-Methylphenol                 | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:52 PM                  |
| 2-Nitroaniline                 | ND      |      | 0.20               | µg/L  | 1                         | 3/3/2014 05:52 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-3  
**Collection Date:** 2/26/2014 11:43 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-17  
**Matrix:** GROUNDWATER

| Analyses                          | Result     | Qual | Report Limit | Units       | Dilution Factor | Date Analyzed     |
|-----------------------------------|------------|------|--------------|-------------|-----------------|-------------------|
| 2-Nitrophenol                     | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| 3&4-Methylphenol                  | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| 3,3'-Dichlorobenzidine            | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| 3-Nitroaniline                    | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| 4,6-Dinitro-2-methylphenol        | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| 4-Bromophenyl phenyl ether        | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| 4-Chloro-3-methylphenol           | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| 4-Chloroaniline                   | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| 4-Chlorophenyl phenyl ether       | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| 4-Nitroaniline                    | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| 4-Nitrophenol                     | ND         |      | 1.0          | µg/L        | 1               | 3/3/2014 05:52 PM |
| Acenaphthene                      | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| Acenaphthylene                    | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| Acetophenone                      | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| Anthracene                        | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| Atrazine                          | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| Benz(a)anthracene                 | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| Benzaldehyde                      | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| Benzo(a)pyrene                    | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| Benzo(b)fluoranthene              | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| Benzo(g,h,i)perylene              | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| Benzo(k)fluoranthene              | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| Bis(2-chloroethoxy)methane        | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| Bis(2-chloroethyl)ether           | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| Bis(2-chloroisopropyl)ether       | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>2.1</b> |      | <b>0.20</b>  | <b>µg/L</b> | 1               | 3/3/2014 05:52 PM |
| Butyl benzyl phthalate            | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| Caprolactam                       | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| Carbazole                         | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| Chrysene                          | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| Dibenz(a,h)anthracene             | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| Dibenzofuran                      | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| Diethyl phthalate                 | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| Dimethyl phthalate                | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| Di-n-butyl phthalate              | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| Di-n-octyl phthalate              | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| Fluoranthene                      | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| Fluorene                          | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| Hexachlorobenzene                 | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |
| Hexachlorobutadiene               | ND         |      | 0.20         | µg/L        | 1               | 3/3/2014 05:52 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-3  
**Collection Date:** 2/26/2014 11:43 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-17  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:52 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:52 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:52 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:52 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:52 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:52 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:52 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:52 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:52 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:52 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:52 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/3/2014 05:52 PM |
| Surr: 2,4,6-Tribromophenol | 81.8   |      | 34-129        | %REC  | 1                  | 3/3/2014 05:52 PM |
| Surr: 2-Fluorobiphenyl     | 72.1   |      | 40-125        | %REC  | 1                  | 3/3/2014 05:52 PM |
| Surr: 2-Fluorophenol       | 62.9   |      | 20-120        | %REC  | 1                  | 3/3/2014 05:52 PM |
| Surr: 4-Terphenyl-d14      | 76.3   |      | 40-135        | %REC  | 1                  | 3/3/2014 05:52 PM |
| Surr: Nitrobenzene-d5      | 64.9   |      | 41-120        | %REC  | 1                  | 3/3/2014 05:52 PM |
| Surr: Phenol-d6            | 61.0   |      | 20-120        | %REC  | 1                  | 3/3/2014 05:52 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/3/2014 01:52 PM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/3/2014 01:52 PM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/3/2014 01:52 PM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/3/2014 01:52 PM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/3/2014 01:52 PM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/3/2014 01:52 PM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/3/2014 01:52 PM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/3/2014 01:52 PM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/3/2014 01:52 PM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/3/2014 01:52 PM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/3/2014 01:52 PM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/3/2014 01:52 PM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/3/2014 01:52 PM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/3/2014 01:52 PM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/3/2014 01:52 PM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/3/2014 01:52 PM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/3/2014 01:52 PM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/3/2014 01:52 PM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/3/2014 01:52 PM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/3/2014 01:52 PM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/3/2014 01:52 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-3  
**Collection Date:** 2/26/2014 11:43 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-17  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed       |
|------------------------------------|--------|------|----------------|-------|-----------------|---------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 01:52 PM   |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 01:52 PM   |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 01:52 PM   |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 01:52 PM   |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 01:52 PM   |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 01:52 PM   |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 01:52 PM   |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 01:52 PM   |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 01:52 PM   |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/3/2014 01:52 PM   |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 01:52 PM   |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/3/2014 01:52 PM   |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 01:52 PM   |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 01:52 PM   |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 01:52 PM   |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 01:52 PM   |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 01:52 PM   |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 01:52 PM   |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 01:52 PM   |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 01:52 PM   |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 01:52 PM   |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 01:52 PM   |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 01:52 PM   |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/3/2014 01:52 PM   |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/3/2014 01:52 PM   |
| Surr: 1,2-Dichloroethane-d4        | 104    |      | 70-125         | %REC  | 1               | 3/3/2014 01:52 PM   |
| Surr: 4-Bromofluorobenzene         | 96.5   |      | 72-125         | %REC  | 1               | 3/3/2014 01:52 PM   |
| Surr: Dibromofluoromethane         | 104    |      | 71-125         | %REC  | 1               | 3/3/2014 01:52 PM   |
| Surr: Toluene-d8                   | 94.0   |      | 75-125         | %REC  | 1               | 3/3/2014 01:52 PM   |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       |                 | <b>Analyst: JKP</b> |
| Chloride                           | 36.9   |      | 0.500          | mg/L  | 1               | 3/11/2014 10:40 AM  |
| Fluoride                           | 1.84   |      | 0.100          | mg/L  | 1               | 3/11/2014 10:40 AM  |
| Sulfate                            | 79.1   |      | 0.500          | mg/L  | 1               | 3/11/2014 10:40 AM  |
| Nitrate/Nitrite (as N)             | 2.08   |      | 1.00           | mg/L  | 5               | 3/10/2014 05:36 AM  |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       |                 | <b>Analyst: PPM</b> |
| Alkalinity, Bicarbonate (As CaCO3) | 252    |      | 6.00           | mg/L  | 1               | 2/28/2014 11:30 AM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 6.00           | mg/L  | 1               | 2/28/2014 11:30 AM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 6.00           | mg/L  | 1               | 2/28/2014 11:30 AM  |
| Alkalinity, Total (As CaCO3)       | 252    |      | 6.00           | mg/L  | 1               | 2/28/2014 11:30 AM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

## ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-3  
**Collection Date:** 2/26/2014 11:43 AM

**Work Order:** 14021211  
**Lab ID:** 14021211-17  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 722    |      | 5.00              | µmhos/cm | 1               | 2/28/2014 11:30 AM  |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 7.75   | H    | 0.100             | pH Units | 1               | 2/28/2014 11:30 AM  |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 430    |      | 10.0              | mg/L     | 1               | 3/3/2014 06:00 PM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** TB-2-26-13  
**Collection Date:** 2/24/2014

**Work Order:** 14021211  
**Lab ID:** 14021211-18  
**Matrix:** WATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|-----------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       |                 | Analyst: PC       |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1               | 3/3/2014 02:17 PM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1               | 3/3/2014 02:17 PM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1               | 3/3/2014 02:17 PM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1               | 3/3/2014 02:17 PM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1               | 3/3/2014 02:17 PM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| Chlorobenzene              | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| Chloroethane               | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| Chloroform                 | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| Chloromethane              | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| cis-1,2-Dichloroethene     | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| cis-1,3-Dichloropropene    | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| Dibromochloromethane       | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| Ethylbenzene               | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| Isopropylbenzene           | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| m,p-Xylene                 | ND     |      | 0.010         | mg/L  | 1               | 3/3/2014 02:17 PM |
| Methyl tert-butyl ether    | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| Methylene chloride         | ND     |      | 0.010         | mg/L  | 1               | 3/3/2014 02:17 PM |
| Naphthalene                | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| n-Butylbenzene             | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| n-Propylbenzene            | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| o-Xylene                   | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| sec-Butylbenzene           | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |
| Styrene                    | ND     |      | 0.0050        | mg/L  | 1               | 3/3/2014 02:17 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental****Date:** 13-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** TB-2-26-13  
**Collection Date:** 2/24/2014

**Work Order:** 14021211  
**Lab ID:** 14021211-18  
**Matrix:** WATER

| Analyses                    | Result | Qual | Report<br>Limit | Units | Dilution<br>Factor | Date Analyzed     |
|-----------------------------|--------|------|-----------------|-------|--------------------|-------------------|
| Tetrachloroethene           | ND     |      | 0.0050          | mg/L  | 1                  | 3/3/2014 02:17 PM |
| Toluene                     | ND     |      | 0.0050          | mg/L  | 1                  | 3/3/2014 02:17 PM |
| trans-1,2-Dichloroethene    | ND     |      | 0.0050          | mg/L  | 1                  | 3/3/2014 02:17 PM |
| trans-1,3-Dichloropropene   | ND     |      | 0.0050          | mg/L  | 1                  | 3/3/2014 02:17 PM |
| Trichloroethene             | ND     |      | 0.0050          | mg/L  | 1                  | 3/3/2014 02:17 PM |
| Vinyl chloride              | ND     |      | 0.0020          | mg/L  | 1                  | 3/3/2014 02:17 PM |
| Xylenes, Total              | ND     |      | 0.015           | mg/L  | 1                  | 3/3/2014 02:17 PM |
| Surr: 1,2-Dichloroethane-d4 | 103    |      | 70-125          | %REC  | 1                  | 3/3/2014 02:17 PM |
| Surr: 4-Bromofluorobenzene  | 95.8   |      | 72-125          | %REC  | 1                  | 3/3/2014 02:17 PM |
| Surr: Dibromofluoromethane  | 103    |      | 71-125          | %REC  | 1                  | 3/3/2014 02:17 PM |
| Surr: Toluene-d8            | 94.1   |      | 75-125          | %REC  | 1                  | 3/3/2014 02:17 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**Work Order:** 14021211  
**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual

**DATES REPORT**

| Sample ID                    | Client Sample ID | Matrix                                           | Collection Date       | TCLP Date | Prep Date          | Analysis Date      |
|------------------------------|------------------|--------------------------------------------------|-----------------------|-----------|--------------------|--------------------|
| <b><u>Batch ID</u></b> 77075 |                  | <b><u>Test Name:</u></b> Low-Level Semivolatiles |                       |           |                    |                    |
| 14021211-01F                 | MW-28            | Groundwater                                      | 2/24/2014 3:45:00 PM  |           | 2/28/2014 08:50 AM | 2/28/2014 11:41 PM |
| 14021211-02F                 | MW-15            |                                                  | 2/24/2014 5:15:00 PM  |           | 2/28/2014 08:50 AM | 3/1/2014 12:01 AM  |
| 14021211-03F                 | Dup-1            |                                                  |                       |           | 2/28/2014 08:50 AM | 3/1/2014 12:21 AM  |
| 14021211-04F                 | MW-16            |                                                  | 2/25/2014 3:10:00 PM  |           | 2/28/2014 08:50 AM | 3/3/2014 02:12 PM  |
| 14021211-05F                 | MW-4             |                                                  | 2/25/2014 4:45:00 PM  |           | 2/28/2014 08:50 AM | 3/3/2014 02:32 PM  |
| 14021211-06F                 | MW-2             |                                                  | 2/25/2014 6:05:00 PM  |           | 2/28/2014 08:50 AM | 3/3/2014 03:12 PM  |
| 14021211-08F                 | MW-5             |                                                  | 2/25/2014 8:44:00 AM  |           | 2/28/2014 08:50 AM | 3/3/2014 03:32 PM  |
| 14021211-09F                 | MW-21            |                                                  | 2/25/2014 11:24:00 AM |           | 2/28/2014 08:50 AM | 3/3/2014 03:52 PM  |
| 14021211-10F                 | MW-22            |                                                  | 2/25/2014 1:35:00 PM  |           | 2/28/2014 08:50 AM | 3/3/2014 04:12 PM  |
| 14021211-11F                 | MW-23            |                                                  | 2/25/2014 2:58:00 PM  |           | 2/28/2014 08:50 AM | 3/3/2014 04:32 PM  |
| 14021211-12F                 | MW-20            |                                                  | 2/26/2014 4:40:00 PM  |           | 2/28/2014 08:50 AM | 3/3/2014 04:52 PM  |
| 14021211-13F                 | MW-26            |                                                  | 2/26/2014 10:55:00 AM |           | 2/28/2014 08:50 AM | 2/28/2014 05:37 PM |
| 14021211-15F                 | MW-10            |                                                  | 2/26/2014 8:50:00 AM  |           | 2/28/2014 08:50 AM | 3/3/2014 05:12 PM  |
| 14021211-16F                 | MW-9             |                                                  | 2/26/2014 10:25:00 AM |           | 2/28/2014 08:50 AM | 3/3/2014 05:32 PM  |
| 14021211-17F                 | MW-3             |                                                  | 2/26/2014 11:43:00 AM |           | 2/28/2014 08:50 AM | 3/3/2014 05:52 PM  |

**Work Order:** 14021211  
**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual

**DATES REPORT**

| Sample ID             | Client Sample ID | Matrix                             | Collection Date       | TCLP Date | Prep Date          | Analysis Date      |
|-----------------------|------------------|------------------------------------|-----------------------|-----------|--------------------|--------------------|
| <b>Batch ID</b> 77079 |                  | <b>Test Name:</b> Dissolved Metals |                       |           |                    |                    |
| 14021211-01           | MW-28            | Groundwater                        | 2/24/2014 3:45:00 PM  |           | 2/28/2014 09:00 AM | 2/28/2014 03:00 PM |
| 14021211-02           | MW-15            |                                    | 2/24/2014 5:15:00 PM  |           | 2/28/2014 09:00 AM | 2/28/2014 03:02 PM |
| 14021211-03           | Dup-1            |                                    |                       |           | 2/28/2014 09:00 AM | 2/28/2014 03:05 PM |
| 14021211-04           | MW-16            |                                    | 2/25/2014 3:10:00 PM  |           | 2/28/2014 09:00 AM | 2/28/2014 03:07 PM |
| 14021211-05           | MW-4             |                                    | 2/25/2014 4:45:00 PM  |           | 2/28/2014 09:00 AM | 2/28/2014 03:09 PM |
| 14021211-06           | MW-2             |                                    | 2/25/2014 6:05:00 PM  |           | 2/28/2014 09:00 AM | 2/28/2014 03:12 PM |
| 14021211-08           | MW-5             |                                    | 2/25/2014 8:44:00 AM  |           | 2/28/2014 09:00 AM | 2/28/2014 03:14 PM |
| 14021211-09           | MW-21            |                                    | 2/25/2014 11:24:00 AM |           | 2/28/2014 09:00 AM | 2/28/2014 03:22 PM |
|                       |                  |                                    |                       |           | 2/28/2014 09:00 AM | 3/3/2014 02:04 PM  |
| 14021211-10           | MW-22            |                                    | 2/25/2014 1:35:00 PM  |           | 2/28/2014 09:00 AM | 2/28/2014 03:24 PM |
|                       |                  |                                    |                       |           | 2/28/2014 09:00 AM | 3/3/2014 02:07 PM  |
| 14021211-11           | MW-23            |                                    | 2/25/2014 2:58:00 PM  |           | 2/28/2014 09:00 AM | 2/28/2014 03:27 PM |
|                       |                  |                                    |                       |           | 2/28/2014 09:00 AM | 3/3/2014 02:09 PM  |
|                       |                  |                                    |                       |           | 2/28/2014 09:00 AM | 3/3/2014 02:37 PM  |
| 14021211-12           | MW-20            |                                    | 2/26/2014 4:40:00 PM  |           | 2/28/2014 09:00 AM | 2/28/2014 03:29 PM |
|                       |                  |                                    |                       |           | 2/28/2014 09:00 AM | 3/3/2014 02:12 PM  |
| 14021211-13           | MW-26            |                                    | 2/26/2014 10:55:00 AM |           | 2/28/2014 09:00 AM | 2/28/2014 03:32 PM |
|                       |                  |                                    |                       |           | 2/28/2014 09:00 AM | 3/3/2014 02:19 PM  |
| 14021211-15           | MW-10            |                                    | 2/26/2014 8:50:00 AM  |           | 2/28/2014 09:00 AM | 2/28/2014 04:36 PM |
|                       |                  |                                    |                       |           | 2/28/2014 09:00 AM | 3/4/2014 02:15 PM  |
| 14021211-16           | MW-9             |                                    | 2/26/2014 10:25:00 AM |           | 2/28/2014 09:00 AM | 2/28/2014 04:38 PM |
| 14021211-17           | MW-3             |                                    | 2/26/2014 11:43:00 AM |           | 2/28/2014 09:00 AM | 2/28/2014 04:40 PM |



**Work Order:** 14021211  
**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual

## DATES REPORT

| Sample ID                                                                | Client Sample ID | Matrix      | Collection Date       | TCLP Date | Prep Date          | Analysis Date      |
|--------------------------------------------------------------------------|------------------|-------------|-----------------------|-----------|--------------------|--------------------|
| <b><u>Batch ID</u> 77092      <u>Test Name:</u> Mercury-SW7470A</b>      |                  |             |                       |           |                    |                    |
| 14021211-01                                                              | MW-28            | Groundwater | 2/24/2014 3:45:00 PM  |           | 2/28/2014 11:45 AM | 2/28/2014 05:43 PM |
| 14021211-02                                                              | MW-15            |             | 2/24/2014 5:15:00 PM  |           | 2/28/2014 11:45 AM | 2/28/2014 05:44 PM |
| 14021211-03                                                              | Dup-1            |             |                       |           | 2/28/2014 11:45 AM | 2/28/2014 05:46 PM |
| 14021211-04                                                              | MW-16            |             | 2/25/2014 3:10:00 PM  |           | 2/28/2014 11:45 AM | 2/28/2014 05:48 PM |
| 14021211-05                                                              | MW-4             |             | 2/25/2014 4:45:00 PM  |           | 2/28/2014 11:45 AM | 2/28/2014 05:50 PM |
| <b><u>Batch ID</u> 77191      <u>Test Name:</u> Mercury-SW7470A</b>      |                  |             |                       |           |                    |                    |
| 14021211-06                                                              | MW-2             | Groundwater | 2/25/2014 6:05:00 PM  |           | 3/5/2014 01:57 PM  | 3/5/2014 05:13 PM  |
| 14021211-08                                                              | MW-5             |             | 2/25/2014 8:44:00 AM  |           | 3/5/2014 01:57 PM  | 3/5/2014 05:14 PM  |
| 14021211-09                                                              | MW-21            |             | 2/25/2014 11:24:00 AM |           | 3/5/2014 01:57 PM  | 3/5/2014 05:16 PM  |
| 14021211-10                                                              | MW-22            |             | 2/25/2014 1:35:00 PM  |           | 3/5/2014 01:57 PM  | 3/5/2014 05:18 PM  |
| 14021211-11                                                              | MW-23            |             | 2/25/2014 2:58:00 PM  |           | 3/5/2014 01:57 PM  | 3/5/2014 05:20 PM  |
| 14021211-12                                                              | MW-20            |             | 2/26/2014 4:40:00 PM  |           | 3/5/2014 01:57 PM  | 3/5/2014 05:21 PM  |
| 14021211-13                                                              | MW-26            |             | 2/26/2014 10:55:00 AM |           | 3/5/2014 01:57 PM  | 3/5/2014 04:54 PM  |
| 14021211-15                                                              | MW-10            |             | 2/26/2014 8:50:00 AM  |           | 3/5/2014 01:57 PM  | 3/5/2014 05:23 PM  |
| 14021211-16                                                              | MW-9             |             | 2/26/2014 10:25:00 AM |           | 3/5/2014 01:57 PM  | 3/5/2014 05:28 PM  |
| 14021211-17                                                              | MW-3             |             | 2/26/2014 11:43:00 AM |           | 3/5/2014 01:57 PM  | 3/5/2014 05:30 PM  |
| <b><u>Batch ID</u> R162114      <u>Test Name:</u> Alkalinity-SM2320B</b> |                  |             |                       |           |                    |                    |
| 14021211-11E                                                             | MW-23            | Groundwater | 2/25/2014 2:58:00 PM  |           |                    | 2/28/2014 10:51 AM |
| 14021211-12E                                                             | MW-20            |             | 2/26/2014 4:40:00 PM  |           |                    | 2/28/2014 10:57 AM |
| 14021211-13E                                                             | MW-26            |             | 2/26/2014 10:55:00 AM |           |                    | 2/28/2014 11:13 AM |
| 14021211-15E                                                             | MW-10            |             | 2/26/2014 8:50:00 AM  |           |                    | 2/28/2014 11:18 AM |
| 14021211-16E                                                             | MW-9             |             | 2/26/2014 10:25:00 AM |           |                    | 2/28/2014 11:24 AM |
| 14021211-17E                                                             | MW-3             |             | 2/26/2014 11:43:00 AM |           |                    | 2/28/2014 11:30 AM |

**Work Order:** 14021211  
**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual

**DATES REPORT**

| Sample ID                                                                 | Client Sample ID | Matrix      | Collection Date       | TCLP Date | Prep Date | Analysis Date      |
|---------------------------------------------------------------------------|------------------|-------------|-----------------------|-----------|-----------|--------------------|
| <b><u>Batch ID R162115</u>    <u>Test Name: pH - SM4500H+ B</u></b>       |                  |             |                       |           |           |                    |
| 14021211-11E                                                              | MW-23            | Groundwater | 2/25/2014 2:58:00 PM  |           |           | 2/28/2014 10:51 AM |
| 14021211-12E                                                              | MW-20            |             | 2/26/2014 4:40:00 PM  |           |           | 2/28/2014 10:57 AM |
| 14021211-13E                                                              | MW-26            |             | 2/26/2014 10:55:00 AM |           |           | 2/28/2014 11:13 AM |
| 14021211-15E                                                              | MW-10            |             | 2/26/2014 8:50:00 AM  |           |           | 2/28/2014 11:18 AM |
| 14021211-16E                                                              | MW-9             |             | 2/26/2014 10:25:00 AM |           |           | 2/28/2014 11:24 AM |
| 14021211-17E                                                              | MW-3             |             | 2/26/2014 11:43:00 AM |           |           | 2/28/2014 11:30 AM |
| <b><u>Batch ID R162116</u>    <u>Test Name: Specific Conductivity</u></b> |                  |             |                       |           |           |                    |
| 14021211-11E                                                              | MW-23            | Groundwater | 2/25/2014 2:58:00 PM  |           |           | 2/28/2014 10:51 AM |
| 14021211-12E                                                              | MW-20            |             | 2/26/2014 4:40:00 PM  |           |           | 2/28/2014 10:57 AM |
| 14021211-13E                                                              | MW-26            |             | 2/26/2014 10:55:00 AM |           |           | 2/28/2014 11:13 AM |
| 14021211-15E                                                              | MW-10            |             | 2/26/2014 8:50:00 AM  |           |           | 2/28/2014 11:18 AM |
| 14021211-16E                                                              | MW-9             |             | 2/26/2014 10:25:00 AM |           |           | 2/28/2014 11:24 AM |
| 14021211-17E                                                              | MW-3             |             | 2/26/2014 11:43:00 AM |           |           | 2/28/2014 11:30 AM |
| <b><u>Batch ID R162123</u>    <u>Test Name: Alkalinity-SM2320B</u></b>    |                  |             |                       |           |           |                    |
| 14021211-01E                                                              | MW-28            | Groundwater | 2/24/2014 3:45:00 PM  |           |           | 2/27/2014 08:42 PM |
| 14021211-02E                                                              | MW-15            |             | 2/24/2014 5:15:00 PM  |           |           | 2/27/2014 08:53 PM |
| 14021211-03E                                                              | Dup-1            |             |                       |           |           | 2/27/2014 08:59 PM |
| 14021211-04E                                                              | MW-16            |             | 2/25/2014 3:10:00 PM  |           |           | 2/27/2014 09:05 PM |
| 14021211-05E                                                              | MW-4             |             | 2/25/2014 4:45:00 PM  |           |           | 2/27/2014 09:10 PM |
| 14021211-06E                                                              | MW-2             |             | 2/25/2014 6:05:00 PM  |           |           | 2/27/2014 09:20 PM |
| 14021211-08E                                                              | MW-5             |             | 2/25/2014 8:44:00 AM  |           |           | 2/27/2014 09:26 PM |
| 14021211-09E                                                              | MW-21            |             | 2/25/2014 11:24:00 AM |           |           | 2/27/2014 10:08 PM |
| 14021211-10E                                                              | MW-22            |             | 2/25/2014 1:35:00 PM  |           |           | 2/27/2014 10:13 PM |

**Work Order:** 14021211  
**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual

**DATES REPORT**

| Sample ID                                                                 | Client Sample ID | Matrix      | Collection Date       | TCLP Date | Prep Date | Analysis Date      |
|---------------------------------------------------------------------------|------------------|-------------|-----------------------|-----------|-----------|--------------------|
| <b><u>Batch ID</u> R162124    <u>Test Name:</u> pH - SM4500H+ B</b>       |                  |             |                       |           |           |                    |
| 14021211-01E                                                              | MW-28            | Groundwater | 2/24/2014 3:45:00 PM  |           |           | 2/27/2014 08:42 PM |
| 14021211-02E                                                              | MW-15            |             | 2/24/2014 5:15:00 PM  |           |           | 2/27/2014 08:53 PM |
| 14021211-03E                                                              | Dup-1            |             |                       |           |           | 2/27/2014 08:59 PM |
| 14021211-04E                                                              | MW-16            |             | 2/25/2014 3:10:00 PM  |           |           | 2/27/2014 09:05 PM |
| 14021211-05E                                                              | MW-4             |             | 2/25/2014 4:45:00 PM  |           |           | 2/27/2014 09:10 PM |
| 14021211-06E                                                              | MW-2             |             | 2/25/2014 6:05:00 PM  |           |           | 2/27/2014 09:20 PM |
| 14021211-08E                                                              | MW-5             |             | 2/25/2014 8:44:00 AM  |           |           | 2/27/2014 09:26 PM |
| 14021211-09E                                                              | MW-21            |             | 2/25/2014 11:24:00 AM |           |           | 2/27/2014 10:08 PM |
| 14021211-10E                                                              | MW-22            |             | 2/25/2014 1:35:00 PM  |           |           | 2/27/2014 10:13 PM |
| <b><u>Batch ID</u> R162125    <u>Test Name:</u> Specific Conductivity</b> |                  |             |                       |           |           |                    |
| 14021211-01E                                                              | MW-28            | Groundwater | 2/24/2014 3:45:00 PM  |           |           | 2/27/2014 08:42 PM |
| 14021211-02E                                                              | MW-15            |             | 2/24/2014 5:15:00 PM  |           |           | 2/27/2014 08:53 PM |
| 14021211-03E                                                              | Dup-1            |             |                       |           |           | 2/27/2014 08:59 PM |
| 14021211-04E                                                              | MW-16            |             | 2/25/2014 3:10:00 PM  |           |           | 2/27/2014 09:05 PM |
| 14021211-05E                                                              | MW-4             |             | 2/25/2014 4:45:00 PM  |           |           | 2/27/2014 09:10 PM |
| 14021211-06E                                                              | MW-2             |             | 2/25/2014 6:05:00 PM  |           |           | 2/27/2014 09:20 PM |
| 14021211-08E                                                              | MW-5             |             | 2/25/2014 8:44:00 AM  |           |           | 2/27/2014 09:26 PM |
| 14021211-09E                                                              | MW-21            |             | 2/25/2014 11:24:00 AM |           |           | 2/27/2014 10:08 PM |
| 14021211-10E                                                              | MW-22            |             | 2/25/2014 1:35:00 PM  |           |           | 2/27/2014 10:13 PM |

**Work Order:** 14021211  
**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual

**DATES REPORT**

| Sample ID                                                                  | Client Sample ID | Matrix      | Collection Date       | TCLP Date | Prep Date | Analysis Date      |
|----------------------------------------------------------------------------|------------------|-------------|-----------------------|-----------|-----------|--------------------|
| <b><u>Batch ID</u> R162170    <u>Test Name:</u> Volatiles - SW8260C</b>    |                  |             |                       |           |           |                    |
| 14021211-01<br>^                                                           | MW-28            | Groundwater | 2/24/2014 3:45:00 PM  |           |           | 3/2/2014 01:48 PM  |
| 14021211-02<br>^                                                           | MW-15            |             | 2/24/2014 5:15:00 PM  |           |           | 3/2/2014 04:43 PM  |
| 14021211-03<br>^                                                           | Dup-1            |             |                       |           |           | 3/2/2014 01:23 PM  |
| 14021211-04<br>^                                                           | MW-16            |             | 2/25/2014 3:10:00 PM  |           |           | 3/2/2014 05:09 PM  |
| 14021211-05<br>^                                                           | MW-4             |             | 2/25/2014 4:45:00 PM  |           |           | 3/2/2014 05:35 PM  |
| 14021211-06<br>^                                                           | MW-2             |             | 2/25/2014 6:05:00 PM  |           |           | 3/2/2014 06:01 PM  |
| 14021211-08<br>^                                                           | MW-5             |             | 2/25/2014 8:44:00 AM  |           |           | 3/2/2014 06:53 PM  |
| 14021211-09<br>^                                                           | MW-21            |             | 2/25/2014 11:24:00 AM |           |           | 3/2/2014 07:19 PM  |
| 14021211-10<br>^                                                           | MW-22            |             | 2/25/2014 1:35:00 PM  |           |           | 3/2/2014 07:45 PM  |
| 14021211-11<br>^                                                           | MW-23            |             | 2/25/2014 2:58:00 PM  |           |           | 3/2/2014 08:10 PM  |
| 14021211-12<br>^                                                           | MW-20            |             | 2/26/2014 4:40:00 PM  |           |           | 3/2/2014 08:36 PM  |
| 14021211-13<br>^                                                           | MW-26            |             | 2/26/2014 10:55:00 AM |           |           | 3/2/2014 12:58 PM  |
| 14021211-15<br>^                                                           | MW-10            |             | 2/26/2014 8:50:00 AM  |           |           | 3/2/2014 09:28 PM  |
| 14021211-16<br>^                                                           | MW-9             |             | 2/26/2014 10:25:00 AM |           |           | 3/2/2014 09:54 PM  |
| <b><u>Batch ID</u> R162235    <u>Test Name:</u> Total Dissolved Solids</b> |                  |             |                       |           |           |                    |
| 14021211-01E                                                               | MW-28            | Groundwater | 2/24/2014 3:45:00 PM  |           |           | 2/28/2014 11:00 AM |
| 14021211-02E                                                               | MW-15            |             | 2/24/2014 5:15:00 PM  |           |           | 2/28/2014 11:00 AM |
| 14021211-03E                                                               | Dup-1            |             |                       |           |           | 2/28/2014 11:00 AM |
| 14021211-08E                                                               | MW-5             |             | 2/25/2014 8:44:00 AM  |           |           | 2/28/2014 11:00 AM |
| 14021211-09E                                                               | MW-21            |             | 2/25/2014 11:24:00 AM |           |           | 2/28/2014 11:00 AM |
| 14021211-10E                                                               | MW-22            |             | 2/25/2014 1:35:00 PM  |           |           | 2/28/2014 11:00 AM |
| <b><u>Batch ID</u> R162237    <u>Test Name:</u> Volatiles - SW8260C</b>    |                  |             |                       |           |           |                    |
| 14021211-17<br>^                                                           | MW-3             | Groundwater | 2/26/2014 11:43:00 AM |           |           | 3/3/2014 01:52 PM  |
| 14021211-18<br>^                                                           | TB-2-26-13       | Water       | 2/24/2014             |           |           | 3/3/2014 02:17 PM  |

**Work Order:** 14021211  
**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual

**DATES REPORT**

| Sample ID                                                                      | Client Sample ID | Matrix      | Collection Date       | TCLP Date | Prep Date | Analysis Date     |
|--------------------------------------------------------------------------------|------------------|-------------|-----------------------|-----------|-----------|-------------------|
| <b><u>Batch ID</u></b> R162364 <b><u>Test Name:</u></b> Total Dissolved Solids |                  |             |                       |           |           |                   |
| 14021211-04E                                                                   | MW-16            | Groundwater | 2/25/2014 3:10:00 PM  |           |           | 3/3/2014 06:00 PM |
| 14021211-05E                                                                   | MW-4             |             | 2/25/2014 4:45:00 PM  |           |           | 3/3/2014 06:00 PM |
| 14021211-06E                                                                   | MW-2             |             | 2/25/2014 6:05:00 PM  |           |           | 3/3/2014 06:00 PM |
| 14021211-11E                                                                   | MW-23            |             | 2/25/2014 2:58:00 PM  |           |           | 3/3/2014 06:00 PM |
| 14021211-12E                                                                   | MW-20            |             | 2/26/2014 4:40:00 PM  |           |           | 3/3/2014 06:00 PM |
| 14021211-13E                                                                   | MW-26            |             | 2/26/2014 10:55:00 AM |           |           | 3/3/2014 06:00 PM |
| 14021211-15E                                                                   | MW-10            |             | 2/26/2014 8:50:00 AM  |           |           | 3/3/2014 06:00 PM |
| 14021211-16E                                                                   | MW-9             |             | 2/26/2014 10:25:00 AM |           |           | 3/3/2014 06:00 PM |
| 14021211-17E                                                                   | MW-3             |             | 2/26/2014 11:43:00 AM |           |           | 3/3/2014 06:00 PM |

**Work Order:** 14021211  
**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual

**DATES REPORT**

| Sample ID                                                           | Client Sample ID | Matrix      | Collection Date       | TCLP Date | Prep Date | Analysis Date      |
|---------------------------------------------------------------------|------------------|-------------|-----------------------|-----------|-----------|--------------------|
| <b>Batch ID</b> R162575 <b>Test Name:</b> Anions - EPA 300.0 (1993) |                  |             |                       |           |           |                    |
| 14021211-01                                                         | MW-28            | Groundwater | 2/24/2014 3:45:00 PM  |           |           | 3/10/2014 12:45 AM |
| 14021211-02                                                         | MW-15            |             | 2/24/2014 5:15:00 PM  |           |           | 3/10/2014 12:59 AM |
| 14021211-03                                                         | Dup-1            |             |                       |           |           | 3/10/2014 01:14 AM |
| 14021211-04                                                         | MW-16            |             | 2/25/2014 3:10:00 PM  |           |           | 3/10/2014 01:28 AM |
| 14021211-05                                                         | MW-4             |             | 2/25/2014 4:45:00 PM  |           |           | 3/10/2014 02:12 AM |
| 14021211-06                                                         | MW-2             |             | 2/25/2014 6:05:00 PM  |           |           | 3/10/2014 02:27 AM |
| 14021211-08                                                         | MW-5             |             | 2/25/2014 8:44:00 AM  |           |           | 3/10/2014 02:41 AM |
| 14021211-09                                                         | MW-21            |             | 2/25/2014 11:24:00 AM |           |           | 3/10/2014 02:56 AM |
| 14021211-10                                                         | MW-22            |             | 2/25/2014 1:35:00 PM  |           |           | 3/10/2014 03:10 AM |
| 14021211-11                                                         | MW-23            |             | 2/25/2014 2:58:00 PM  |           |           | 3/10/2014 03:25 AM |
| 14021211-12                                                         | MW-20            |             | 2/26/2014 4:40:00 PM  |           |           | 3/10/2014 03:39 AM |
| 14021211-13                                                         | MW-26            |             | 2/26/2014 10:55:00 AM |           |           | 3/10/2014 03:54 AM |
| 14021211-15                                                         | MW-10            |             | 2/26/2014 8:50:00 AM  |           |           | 3/10/2014 05:07 AM |
| 14021211-16                                                         | MW-9             |             | 2/26/2014 10:25:00 AM |           |           | 3/10/2014 05:21 AM |
| 14021211-17                                                         | MW-3             |             | 2/26/2014 11:43:00 AM |           |           | 3/10/2014 05:36 AM |

**Work Order:** 14021211  
**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual

**DATES REPORT**

| Sample ID                                                                     | Client Sample ID | Matrix      | Collection Date       | TCLP Date | Prep Date | Analysis Date      |
|-------------------------------------------------------------------------------|------------------|-------------|-----------------------|-----------|-----------|--------------------|
| <b><u>Batch ID</u> R162751    <u>Test Name:</u> Anions - EPA 300.0 (1993)</b> |                  |             |                       |           |           |                    |
| 14021211-01E                                                                  | MW-28            | Groundwater | 2/24/2014 3:45:00 PM  |           |           | 3/11/2014 10:58 AM |
| 14021211-02E                                                                  | MW-15            |             | 2/24/2014 5:15:00 PM  |           |           | 3/11/2014 06:18 AM |
| 14021211-03E                                                                  | Dup-1            |             |                       |           |           | 3/11/2014 06:32 AM |
| 14021211-04E                                                                  | MW-16            |             | 2/25/2014 3:10:00 PM  |           |           | 3/11/2014 06:47 AM |
| 14021211-05E                                                                  | MW-4             |             | 2/25/2014 4:45:00 PM  |           |           | 3/11/2014 07:01 AM |
| 14021211-06E                                                                  | MW-2             |             | 2/25/2014 6:05:00 PM  |           |           | 3/11/2014 07:16 AM |
| 14021211-08E                                                                  | MW-5             |             | 2/25/2014 8:44:00 AM  |           |           | 3/11/2014 07:31 AM |
| 14021211-09E                                                                  | MW-21            |             | 2/25/2014 11:24:00 AM |           |           | 3/11/2014 07:45 AM |
| 14021211-10E                                                                  | MW-22            |             | 2/25/2014 1:35:00 PM  |           |           | 3/11/2014 08:00 AM |
| 14021211-11E                                                                  | MW-23            |             | 2/25/2014 2:58:00 PM  |           |           | 3/11/2014 08:43 AM |
| 14021211-12E                                                                  | MW-20            |             | 2/26/2014 4:40:00 PM  |           |           | 3/11/2014 10:11 AM |
| 14021211-13E                                                                  | MW-26            |             | 2/26/2014 10:55:00 AM |           |           | 3/11/2014 09:12 AM |
| 14021211-15E                                                                  | MW-10            |             | 2/26/2014 8:50:00 AM  |           |           | 3/11/2014 09:56 AM |
| 14021211-16E                                                                  | MW-9             |             | 2/26/2014 10:25:00 AM |           |           | 3/11/2014 10:25 AM |
| 14021211-17E                                                                  | MW-3             |             | 2/26/2014 11:43:00 AM |           |           | 3/11/2014 10:40 AM |

**Work Order:** 14021211  
**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual

**DATES REPORT**

| Sample ID                                                                                | Client Sample ID | Matrix      | Collection Date       | TCLP Date | Prep Date | Analysis Date      |
|------------------------------------------------------------------------------------------|------------------|-------------|-----------------------|-----------|-----------|--------------------|
| <b><u>Batch ID</u></b> R162753 <b><u>Test Name:</u></b> <u>Anions - EPA 300.0 (1993)</u> |                  |             |                       |           |           |                    |
| 14021211-02E                                                                             | MW-15            | Groundwater | 2/24/2014 5:15:00 PM  |           |           | 3/12/2014 11:16 AM |
| 14021211-03E                                                                             | Dup-1            |             |                       |           |           | 3/12/2014 11:30 AM |
| 14021211-06E                                                                             | MW-2             |             | 2/25/2014 6:05:00 PM  |           |           | 3/12/2014 11:45 AM |
| 14021211-09E                                                                             | MW-21            |             | 2/25/2014 11:24:00 AM |           |           | 3/12/2014 12:34 PM |
| 14021211-10E                                                                             | MW-22            |             | 2/25/2014 1:35:00 PM  |           |           | 3/12/2014 12:48 PM |
| 14021211-11E                                                                             | MW-23            |             | 2/25/2014 2:58:00 PM  |           |           | 3/12/2014 01:03 PM |
| 14021211-12E                                                                             | MW-20            |             | 2/26/2014 4:40:00 PM  |           |           | 3/12/2014 01:17 PM |
| 14021211-13E                                                                             | MW-26            |             | 2/26/2014 10:55:00 AM |           |           | 3/12/2014 01:32 PM |
| 14021211-15E                                                                             | MW-10            |             | 2/26/2014 8:50:00 AM  |           |           | 3/12/2014 02:16 PM |



**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

**QC BATCH REPORT**

Batch ID: **77079** Instrument ID **ICPMS05** Method: **SW6020** **(Dissolve)**

**MBLK** Sample ID: **MBLKW2-022814-77079** Units: **mg/L** Analysis Date: **2/28/2014 02:46 PM**

Client ID: Run ID: **ICPMS05\_140228A** SeqNo: **3549489** Prep Date: **2/28/2014** DF: **1**

| Analyte    | Result | PQL     | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|------------|--------|---------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Aluminum   | ND     | 0.0100  |         |               |      |               |               |      |           |      |
| Arsenic    | ND     | 0.00500 |         |               |      |               |               |      |           |      |
| Barium     | ND     | 0.00500 |         |               |      |               |               |      |           |      |
| Boron      | ND     | 0.0500  |         |               |      |               |               |      |           |      |
| Cadmium    | ND     | 0.00200 |         |               |      |               |               |      |           |      |
| Calcium    | ND     | 0.500   |         |               |      |               |               |      |           |      |
| Chromium   | ND     | 0.00500 |         |               |      |               |               |      |           |      |
| Cobalt     | ND     | 0.00500 |         |               |      |               |               |      |           |      |
| Copper     | ND     | 0.00500 |         |               |      |               |               |      |           |      |
| Iron       | ND     | 0.200   |         |               |      |               |               |      |           |      |
| Lead       | ND     | 0.00500 |         |               |      |               |               |      |           |      |
| Magnesium  | ND     | 0.200   |         |               |      |               |               |      |           |      |
| Manganese  | ND     | 0.00500 |         |               |      |               |               |      |           |      |
| Molybdenum | ND     | 0.00500 |         |               |      |               |               |      |           |      |
| Nickel     | ND     | 0.00500 |         |               |      |               |               |      |           |      |
| Potassium  | ND     | 0.200   |         |               |      |               |               |      |           |      |
| Selenium   | ND     | 0.00500 |         |               |      |               |               |      |           |      |
| Silver     | ND     | 0.00500 |         |               |      |               |               |      |           |      |
| Sodium     | ND     | 0.200   |         |               |      |               |               |      |           |      |
| Uranium    | ND     | 0.00500 |         |               |      |               |               |      |           |      |
| Zinc       | ND     | 0.00500 |         |               |      |               |               |      |           |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **77079** Instrument ID **ICPMS05** Method: **SW6020** **(Dissolve)**

**LCS** Sample ID: **MLCSW2-022814-77079** Units: **mg/L** Analysis Date: **2/28/2014 02:48 PM**  
 Client ID: Run ID: **ICPMS05\_140228A** SeqNo: **3549490** Prep Date: **2/28/2014** DF: **1**

| Analyte    | Result  | PQL     | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|------------|---------|---------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Aluminum   | 0.09852 | 0.0100  | 0.1     | 0             | 98.5 | 80-120        |               |      |           |      |
| Arsenic    | 0.0458  | 0.00500 | 0.05    | 0             | 91.6 | 80-120        |               |      |           |      |
| Barium     | 0.04734 | 0.00500 | 0.05    | 0             | 94.7 | 80-120        |               |      |           |      |
| Boron      | 0.4264  | 0.0500  | 0.5     | 0             | 85.3 | 80-120        |               |      |           |      |
| Cadmium    | 0.04638 | 0.00200 | 0.05    | 0             | 92.8 | 80-120        |               |      |           |      |
| Calcium    | 4.907   | 0.500   | 5       | 0             | 98.1 | 80-120        |               |      |           |      |
| Chromium   | 0.04714 | 0.00500 | 0.05    | 0             | 94.3 | 80-120        |               |      |           |      |
| Cobalt     | 0.0446  | 0.00500 | 0.05    | 0             | 89.2 | 80-120        |               |      |           |      |
| Copper     | 0.04765 | 0.00500 | 0.05    | 0             | 95.3 | 80-120        |               |      |           |      |
| Iron       | 4.644   | 0.200   | 5       | 0             | 92.9 | 80-120        |               |      |           |      |
| Lead       | 0.04418 | 0.00500 | 0.05    | 0             | 88.4 | 80-120        |               |      |           |      |
| Magnesium  | 4.698   | 0.200   | 5       | 0             | 94   | 80-120        |               |      |           |      |
| Manganese  | 0.04683 | 0.00500 | 0.05    | 0             | 93.7 | 80-120        |               |      |           |      |
| Molybdenum | 0.0467  | 0.00500 | 0.05    | 0             | 93.4 | 80-120        |               |      |           |      |
| Nickel     | 0.04821 | 0.00500 | 0.05    | 0             | 96.4 | 80-120        |               |      |           |      |
| Potassium  | 4.717   | 0.200   | 5       | 0             | 94.3 | 80-120        |               |      |           |      |
| Selenium   | 0.04762 | 0.00500 | 0.05    | 0             | 95.2 | 80-120        |               |      |           |      |
| Silver     | 0.04712 | 0.00500 | 0.05    | 0             | 94.2 | 80-120        |               |      |           |      |
| Sodium     | 4.601   | 0.200   | 5       | 0             | 92   | 80-120        |               |      |           |      |
| Uranium    | 0.08557 | 0.00500 | 0.1     | 0             | 85.6 | 80-120        |               |      |           |      |
| Zinc       | 0.04735 | 0.00500 | 0.05    | 0             | 94.7 | 80-120        |               |      |           |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **77079** Instrument ID **ICPMS05** Method: **SW6020** **(Dissolve)**

| MS                      |         | Sample ID: <b>14021211-13DMS</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>2/28/2014 03:37 PM</b> |           |              |
|-------------------------|---------|----------------------------------|---------|---------------|------|-----------------------|---------------|------------------------------------------|-----------|--------------|
| Client ID: <b>MW-26</b> |         | Run ID: <b>ICPMS05_140228A</b>   |         |               |      | SeqNo: <b>3549507</b> |               | Prep Date: <b>2/28/2014</b>              |           | DF: <b>1</b> |
| Analyte                 | Result  | PQL                              | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                     | RPD Limit | Qual         |
| Aluminum                | 0.1221  | 0.0100                           | 0.1     | 0.02362       | 98.5 | 75-125                |               |                                          |           |              |
| Arsenic                 | 0.04887 | 0.00500                          | 0.05    | 0.001861      | 94   | 75-125                |               |                                          |           |              |
| Barium                  | 0.1211  | 0.00500                          | 0.05    | 0.0739        | 94.4 | 75-125                |               |                                          |           |              |
| Boron                   | 0.7559  | 0.0500                           | 0.5     | 0.1976        | 112  | 75-125                |               |                                          |           |              |
| Cadmium                 | 0.04615 | 0.00200                          | 0.05    | 0             | 92.3 | 75-125                |               |                                          |           |              |
| Calcium                 | 174.5   | 0.500                            | 5       | 173.7         | 17.5 | 75-125                |               |                                          |           | SO           |
| Chromium                | 0.04935 | 0.00500                          | 0.05    | 0.003015      | 92.7 | 75-125                |               |                                          |           |              |
| Cobalt                  | 0.04355 | 0.00500                          | 0.05    | 0             | 87.1 | 75-125                |               |                                          |           |              |
| Copper                  | 0.04604 | 0.00500                          | 0.05    | 0             | 92.1 | 75-125                |               |                                          |           |              |
| Iron                    | 4.611   | 0.200                            | 5       | 0             | 92.2 | 75-125                |               |                                          |           |              |
| Lead                    | 0.04493 | 0.00500                          | 0.05    | 0             | 89.9 | 75-125                |               |                                          |           |              |
| Magnesium               | 25.26   | 0.200                            | 5       | 21.19         | 81.6 | 75-125                |               |                                          |           | O            |
| Manganese               | 0.0564  | 0.00500                          | 0.05    | 0.00979       | 93.2 | 75-125                |               |                                          |           |              |
| Molybdenum              | 0.04948 | 0.00500                          | 0.05    | 0.001786      | 95.4 | 75-125                |               |                                          |           |              |
| Nickel                  | 0.05753 | 0.00500                          | 0.05    | 0.01282       | 89.4 | 75-125                |               |                                          |           |              |
| Potassium               | 7.005   | 0.200                            | 5       | 2.737         | 85.4 | 75-125                |               |                                          |           |              |
| Selenium                | 0.05004 | 0.00500                          | 0.05    | 0             | 100  | 75-125                |               |                                          |           |              |
| Silver                  | 0.04681 | 0.00500                          | 0.05    | 0             | 93.6 | 75-125                |               |                                          |           |              |
| Sodium                  | 81.28   | 0.200                            | 5       | 78.21         | 61.3 | 75-125                |               |                                          |           | SO           |
| Zinc                    | 0.05077 | 0.00500                          | 0.05    | 0.004523      | 92.5 | 75-125                |               |                                          |           |              |

| MS                      |        | Sample ID: <b>14021211-13DMS</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/3/2014 02:24 PM</b> |           |              |
|-------------------------|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|-----------------------------------------|-----------|--------------|
| Client ID: <b>MW-26</b> |        | Run ID: <b>ICPMS05_140303A</b>   |         |               |      | SeqNo: <b>3550710</b> |               | Prep Date: <b>2/28/2014</b>             |           | DF: <b>1</b> |
| Analyte                 | Result | PQL                              | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                    | RPD Limit | Qual         |
| Uranium                 | 0.1009 | 0.00500                          | 0.1     | 0.00583       | 95.1 | 75-125                |               |                                         |           |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **77079** Instrument ID **ICPMS05** Method: **SW6020** (Dissolve)

| MSD                     |         | Sample ID: <b>14021211-13DMSD</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>2/28/2014 03:39 PM</b> |           |              |
|-------------------------|---------|-----------------------------------|---------|---------------|------|-----------------------|---------------|------------------------------------------|-----------|--------------|
| Client ID: <b>MW-26</b> |         | Run ID: <b>ICPMS05_140228A</b>    |         |               |      | SeqNo: <b>3549508</b> |               | Prep Date: <b>2/28/2014</b>              |           | DF: <b>1</b> |
| Analyte                 | Result  | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                     | RPD Limit | Qual         |
| Aluminum                | 0.1191  | 0.0100                            | 0.1     | 0.02362       | 95.5 | 75-125                | 0.1221        | 2.49                                     | 25        |              |
| Arsenic                 | 0.04952 | 0.00500                           | 0.05    | 0.001861      | 95.3 | 75-125                | 0.04887       | 1.31                                     | 25        |              |
| Barium                  | 0.1214  | 0.00500                           | 0.05    | 0.0739        | 94.9 | 75-125                | 0.1211        | 0.201                                    | 25        |              |
| Boron                   | 0.7573  | 0.0500                            | 0.5     | 0.1976        | 112  | 75-125                | 0.7559        | 0.184                                    | 25        |              |
| Cadmium                 | 0.04839 | 0.00200                           | 0.05    | 0             | 96.8 | 75-125                | 0.04615       | 4.73                                     | 25        |              |
| Calcium                 | 175.9   | 0.500                             | 5       | 173.7         | 45.4 | 75-125                | 174.5         | 0.796                                    | 25        | SO           |
| Chromium                | 0.04954 | 0.00500                           | 0.05    | 0.003015      | 93   | 75-125                | 0.04935       | 0.378                                    | 25        |              |
| Cobalt                  | 0.0436  | 0.00500                           | 0.05    | 0             | 87.2 | 75-125                | 0.04355       | 0.131                                    | 25        |              |
| Copper                  | 0.04519 | 0.00500                           | 0.05    | 0             | 90.4 | 75-125                | 0.04604       | 1.85                                     | 25        |              |
| Iron                    | 4.716   | 0.200                             | 5       | 0             | 94.3 | 75-125                | 4.611         | 2.25                                     | 25        |              |
| Lead                    | 0.04474 | 0.00500                           | 0.05    | 0             | 89.5 | 75-125                | 0.04493       | 0.424                                    | 25        |              |
| Magnesium               | 25.2    | 0.200                             | 5       | 21.19         | 80.3 | 75-125                | 25.26         | 0.259                                    | 25        | O            |
| Manganese               | 0.05572 | 0.00500                           | 0.05    | 0.00979       | 91.9 | 75-125                | 0.0564        | 1.22                                     | 25        |              |
| Molybdenum              | 0.05085 | 0.00500                           | 0.05    | 0.001786      | 98.1 | 75-125                | 0.04948       | 2.73                                     | 25        |              |
| Nickel                  | 0.05804 | 0.00500                           | 0.05    | 0.01282       | 90.4 | 75-125                | 0.05753       | 0.884                                    | 25        |              |
| Potassium               | 7.043   | 0.200                             | 5       | 2.737         | 86.1 | 75-125                | 7.005         | 0.538                                    | 25        |              |
| Selenium                | 0.04932 | 0.00500                           | 0.05    | 0             | 98.6 | 75-125                | 0.05004       | 1.46                                     | 25        |              |
| Silver                  | 0.04733 | 0.00500                           | 0.05    | 0             | 94.7 | 75-125                | 0.04681       | 1.09                                     | 25        |              |
| Sodium                  | 81.22   | 0.200                             | 5       | 78.21         | 60.2 | 75-125                | 81.28         | 0.0688                                   | 25        | SO           |
| Zinc                    | 0.05155 | 0.00500                           | 0.05    | 0.004523      | 94.1 | 75-125                | 0.05077       | 1.54                                     | 25        |              |

| MSD                     |        | Sample ID: <b>14021211-13DMSD</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/3/2014 02:27 PM</b> |           |              |
|-------------------------|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|-----------------------------------------|-----------|--------------|
| Client ID: <b>MW-26</b> |        | Run ID: <b>ICPMS05_140303A</b>    |         |               |      | SeqNo: <b>3550711</b> |               | Prep Date: <b>2/28/2014</b>             |           | DF: <b>1</b> |
| Analyte                 | Result | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                    | RPD Limit | Qual         |
| Uranium                 | 0.1032 | 0.00500                           | 0.1     | 0.00583       | 97.4 | 75-125                | 0.1009        | 2.23                                    | 25        |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company  
 Work Order: 14021211  
 Project: Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: 77079 Instrument ID ICPMS05 Method: SW6020 (Dissolve)

| DUP              |          | Sample ID: 14021211-13DDUP |         | Units: mg/L    |      | Analysis Date: 2/28/2014 03:34 PM |               |       |           |      |
|------------------|----------|----------------------------|---------|----------------|------|-----------------------------------|---------------|-------|-----------|------|
| Client ID: MW-26 |          | Run ID: ICPMS05_140228A    |         | SeqNo: 3549506 |      | Prep Date: 2/28/2014              |               | DF: 1 |           |      |
| Analyte          | Result   | PQL                        | SPK Val | SPK Ref Value  | %REC | Control Limit                     | RPD Ref Value | %RPD  | RPD Limit | Qual |
| Aluminum         | 0.0207   | 0.0100                     |         |                |      |                                   | 0.02362       | 13.1  | 25        |      |
| Arsenic          | ND       | 0.00500                    |         |                |      |                                   | 0.001861      | 0     | 25        |      |
| Barium           | 0.0697   | 0.00500                    |         |                |      |                                   | 0.0739        | 5.86  | 25        |      |
| Boron            | 0.1923   | 0.0500                     |         |                |      |                                   | 0.1976        | 2.71  | 25        |      |
| Cadmium          | ND       | 0.00200                    |         |                |      |                                   | 0.000009      | 0     | 25        |      |
| Calcium          | 169.9    | 0.500                      |         |                |      |                                   | 173.7         | 2.21  | 25        |      |
| Chromium         | ND       | 0.00500                    |         |                |      |                                   | 0.003015      | 0     | 25        |      |
| Cobalt           | ND       | 0.00500                    |         |                |      |                                   | 0.000788      | 0     | 25        |      |
| Copper           | ND       | 0.00500                    |         |                |      |                                   | 0.000191      | 0     | 25        |      |
| Iron             | ND       | 0.200                      |         |                |      |                                   | 0.07426       | 0     | 25        |      |
| Lead             | ND       | 0.00500                    |         |                |      |                                   | 0.000031      | 0     | 25        |      |
| Magnesium        | 20.69    | 0.200                      |         |                |      |                                   | 21.19         | 2.34  | 25        |      |
| Manganese        | 0.009779 | 0.00500                    |         |                |      |                                   | 0.00979       | 0.112 | 25        |      |
| Molybdenum       | ND       | 0.00500                    |         |                |      |                                   | 0.001786      | 0     | 25        |      |
| Nickel           | 0.01229  | 0.00500                    |         |                |      |                                   | 0.01282       | 4.19  | 25        |      |
| Potassium        | 2.682    | 0.200                      |         |                |      |                                   | 2.737         | 2.02  | 25        |      |
| Selenium         | ND       | 0.00500                    |         |                |      |                                   | 0.000048      | 0     | 25        |      |
| Silver           | ND       | 0.00500                    |         |                |      |                                   | 0.000001      | 0     | 25        |      |
| Sodium           | 75.45    | 0.200                      |         |                |      |                                   | 78.21         | 3.59  | 25        |      |
| Zinc             | ND       | 0.00500                    |         |                |      |                                   | 0.004523      | 0     | 25        |      |

| DUP              |          | Sample ID: 14021211-13DDUP |         | Units: mg/L    |      | Analysis Date: 3/3/2014 02:22 PM |               |       |           |      |
|------------------|----------|----------------------------|---------|----------------|------|----------------------------------|---------------|-------|-----------|------|
| Client ID: MW-26 |          | Run ID: ICPMS05_140303A    |         | SeqNo: 3550709 |      | Prep Date: 2/28/2014             |               | DF: 1 |           |      |
| Analyte          | Result   | PQL                        | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit | Qual |
| Uranium          | 0.005219 | 0.00500                    |         |                |      |                                  | 0.00583       | 11.1  | 25        |      |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14021211-01D | 14021211-02D | 14021211-03D | 14021211-04D |
| 14021211-05D | 14021211-06D | 14021211-08D | 14021211-09D |
| 14021211-10D | 14021211-11D | 14021211-12D | 14021211-13D |
| 14021211-15D | 14021211-16D | 14021211-17D |              |

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **77092** Instrument ID **HG03** Method: **SW7470**

|             |                                       |          |         |               |                       |               |                                          |      |              |      |
|-------------|---------------------------------------|----------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| <b>MBLK</b> | Sample ID: <b>GBLKW5-022814-77092</b> |          |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>2/28/2014 04:57 PM</b> |      |              |      |
| Client ID:  | Run ID: <b>HG03_140227A</b>           |          |         |               | SeqNo: <b>3549081</b> |               | Prep Date: <b>2/28/2014</b>              |      | DF: <b>1</b> |      |
| Analyte     | Result                                | PQL      | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Mercury     | ND                                    | 0.000200 |         |               |                       |               |                                          |      |              |      |

|            |                                       |          |         |               |                       |               |                                          |      |              |      |
|------------|---------------------------------------|----------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| <b>LCS</b> | Sample ID: <b>GLCSW5-022814-77092</b> |          |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>2/28/2014 04:59 PM</b> |      |              |      |
| Client ID: | Run ID: <b>HG03_140227A</b>           |          |         |               | SeqNo: <b>3549082</b> |               | Prep Date: <b>2/28/2014</b>              |      | DF: <b>1</b> |      |
| Analyte    | Result                                | PQL      | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Mercury    | 0.00529                               | 0.000200 | 0.005   | 0             | 106                   | 80-124        |                                          |      |              |      |

|            |                                  |          |         |               |                       |               |                                          |      |              |      |
|------------|----------------------------------|----------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| <b>MS</b>  | Sample ID: <b>14021139-05CMS</b> |          |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>2/28/2014 05:04 PM</b> |      |              |      |
| Client ID: | Run ID: <b>HG03_140227A</b>      |          |         |               | SeqNo: <b>3549085</b> |               | Prep Date: <b>2/28/2014</b>              |      | DF: <b>1</b> |      |
| Analyte    | Result                           | PQL      | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Mercury    | 0.00534                          | 0.000200 | 0.005   | 0.000144      | 104                   | 80-124        |                                          |      |              |      |

|            |                                   |          |         |               |                       |               |                                          |      |              |      |
|------------|-----------------------------------|----------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| <b>MSD</b> | Sample ID: <b>14021139-05CMSD</b> |          |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>2/28/2014 05:05 PM</b> |      |              |      |
| Client ID: | Run ID: <b>HG03_140227A</b>       |          |         |               | SeqNo: <b>3549086</b> |               | Prep Date: <b>2/28/2014</b>              |      | DF: <b>1</b> |      |
| Analyte    | Result                            | PQL      | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Mercury    | 0.00545                           | 0.000200 | 0.005   | 0.000144      | 106                   | 80-124        | 0.00534                                  | 2.04 | 20           |      |

|            |                                   |          |         |               |                       |               |                                          |      |              |      |
|------------|-----------------------------------|----------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| <b>DUP</b> | Sample ID: <b>14021139-05CDUP</b> |          |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>2/28/2014 05:02 PM</b> |      |              |      |
| Client ID: | Run ID: <b>HG03_140227A</b>       |          |         |               | SeqNo: <b>3549084</b> |               | Prep Date: <b>2/28/2014</b>              |      | DF: <b>1</b> |      |
| Analyte    | Result                            | PQL      | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Mercury    | ND                                | 0.000200 |         |               |                       |               | 0.000144                                 | 0    | 20           |      |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14021211-01C | 14021211-02C | 14021211-03C | 14021211-04C |
| 14021211-05C |              |              |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **77191** Instrument ID **HG03** Method: **SW7470**

|             |                                       |          |         |               |                       |               |                                         |      |              |      |
|-------------|---------------------------------------|----------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>MBLK</b> | Sample ID: <b>GBLKW2-030514-77191</b> |          |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/5/2014 04:51 PM</b> |      |              |      |
| Client ID:  | Run ID: <b>HG03_140305A</b>           |          |         |               | SeqNo: <b>3554304</b> |               | Prep Date: <b>3/5/2014</b>              |      | DF: <b>1</b> |      |
| Analyte     | Result                                | PQL      | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Mercury     | ND                                    | 0.000200 |         |               |                       |               |                                         |      |              |      |

|            |                                       |          |         |               |                       |               |                                         |      |              |      |
|------------|---------------------------------------|----------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>LCS</b> | Sample ID: <b>GLCSW2-030514-77191</b> |          |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/5/2014 04:52 PM</b> |      |              |      |
| Client ID: | Run ID: <b>HG03_140305A</b>           |          |         |               | SeqNo: <b>3554305</b> |               | Prep Date: <b>3/5/2014</b>              |      | DF: <b>1</b> |      |
| Analyte    | Result                                | PQL      | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Mercury    | 0.0054                                | 0.000200 | 0.005   | 0             | 108                   | 80-124        |                                         |      |              |      |

|                         |                                  |          |         |               |                       |               |                                         |      |              |      |
|-------------------------|----------------------------------|----------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>MS</b>               | Sample ID: <b>14021211-13CMS</b> |          |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/5/2014 04:57 PM</b> |      |              |      |
| Client ID: <b>MW-26</b> | Run ID: <b>HG03_140305A</b>      |          |         |               | SeqNo: <b>3554308</b> |               | Prep Date: <b>3/5/2014</b>              |      | DF: <b>1</b> |      |
| Analyte                 | Result                           | PQL      | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Mercury                 | 0.00547                          | 0.000200 | 0.005   | -0.000049     | 110                   | 80-124        |                                         |      |              |      |

|                         |                                   |          |         |               |                       |               |                                         |      |              |      |
|-------------------------|-----------------------------------|----------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>MSD</b>              | Sample ID: <b>14021211-13CMSD</b> |          |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/5/2014 04:59 PM</b> |      |              |      |
| Client ID: <b>MW-26</b> | Run ID: <b>HG03_140305A</b>       |          |         |               | SeqNo: <b>3554309</b> |               | Prep Date: <b>3/5/2014</b>              |      | DF: <b>1</b> |      |
| Analyte                 | Result                            | PQL      | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Mercury                 | 0.00554                           | 0.000200 | 0.005   | -0.000049     | 112                   | 80-124        | 0.00547                                 | 1.27 | 20           |      |

|                         |                                   |          |         |               |                       |               |                                         |      |              |      |
|-------------------------|-----------------------------------|----------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>DUP</b>              | Sample ID: <b>14021211-13CDUP</b> |          |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/5/2014 04:56 PM</b> |      |              |      |
| Client ID: <b>MW-26</b> | Run ID: <b>HG03_140305A</b>       |          |         |               | SeqNo: <b>3554307</b> |               | Prep Date: <b>3/5/2014</b>              |      | DF: <b>1</b> |      |
| Analyte                 | Result                            | PQL      | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Mercury                 | ND                                | 0.000200 |         |               |                       |               | -0.000049                               | 0    | 20           |      |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14021211-06C | 14021211-08C | 14021211-09C | 14021211-10C |
| 14021211-11C | 14021211-12C | 14021211-13C | 14021211-15C |
| 14021211-16C | 14021211-17C |              |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **77075** Instrument ID **SV-4** Method: **SW8270**

**MBLK** Sample ID: **SBLKW1-140228-77075** Units: **µg/L** Analysis Date: **2/28/2014 03:55 PM**  
 Client ID: Run ID: **SV-4\_140228C** SeqNo: **3553584** Prep Date: **2/28/2014** DF: **1**

| Analyte                     | Result | PQL  | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|-----------------------------|--------|------|---------|---------------|------|---------------|---------------|------|-----------|------|
| 1,1'-Biphenyl               | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 1-Methylnaphthalene         | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2,4,5-Trichlorophenol       | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2,4,6-Trichlorophenol       | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2,4-Dichlorophenol          | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2,4-Dimethylphenol          | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2,4-Dinitrophenol           | ND     | 1.0  |         |               |      |               |               |      |           |      |
| 2,4-Dinitrotoluene          | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2,6-Dinitrotoluene          | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2-Chloronaphthalene         | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2-Chlorophenol              | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2-Methylnaphthalene         | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2-Methylphenol              | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2-Nitroaniline              | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2-Nitrophenol               | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 3&4-Methylphenol            | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 3,3'-Dichlorobenzidine      | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 3-Nitroaniline              | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 4,6-Dinitro-2-methylphenol  | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 4-Bromophenyl phenyl ether  | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 4-Chloro-3-methylphenol     | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 4-Chloroaniline             | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 4-Chlorophenyl phenyl ether | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 4-Nitroaniline              | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 4-Nitrophenol               | ND     | 1.0  |         |               |      |               |               |      |           |      |
| Acenaphthene                | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Acenaphthylene              | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Acetophenone                | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Anthracene                  | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Atrazine                    | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Benz(a)anthracene           | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Benzaldehyde                | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Benzo(a)pyrene              | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Benzo(b)fluoranthene        | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Benzo(g,h,i)perylene        | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Benzo(k)fluoranthene        | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Bis(2-chloroethoxy)methane  | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Bis(2-chloroethyl)ether     | ND     | 0.20 |         |               |      |               |               |      |           |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

| Batch ID: <b>77075</b>            |       | Instrument ID <b>SV-4</b> |   | Method: <b>SW8270</b> |      |        |   |  |
|-----------------------------------|-------|---------------------------|---|-----------------------|------|--------|---|--|
| Bis(2-chloroisopropyl)ether       | ND    | 0.20                      |   |                       |      |        |   |  |
| Bis(2-ethylhexyl)phthalate        | ND    | 0.20                      |   |                       |      |        |   |  |
| Butyl benzyl phthalate            | ND    | 0.20                      |   |                       |      |        |   |  |
| Caprolactam                       | ND    | 0.20                      |   |                       |      |        |   |  |
| Carbazole                         | ND    | 0.20                      |   |                       |      |        |   |  |
| Chrysene                          | ND    | 0.20                      |   |                       |      |        |   |  |
| Dibenz(a,h)anthracene             | ND    | 0.20                      |   |                       |      |        |   |  |
| Dibenzofuran                      | ND    | 0.20                      |   |                       |      |        |   |  |
| Diethyl phthalate                 | ND    | 0.20                      |   |                       |      |        |   |  |
| Dimethyl phthalate                | ND    | 0.20                      |   |                       |      |        |   |  |
| Di-n-butyl phthalate              | ND    | 0.20                      |   |                       |      |        |   |  |
| Di-n-octyl phthalate              | ND    | 0.20                      |   |                       |      |        |   |  |
| Fluoranthene                      | ND    | 0.20                      |   |                       |      |        |   |  |
| Fluorene                          | ND    | 0.20                      |   |                       |      |        |   |  |
| Hexachlorobenzene                 | ND    | 0.20                      |   |                       |      |        |   |  |
| Hexachlorobutadiene               | ND    | 0.20                      |   |                       |      |        |   |  |
| Hexachlorocyclopentadiene         | ND    | 0.20                      |   |                       |      |        |   |  |
| Hexachloroethane                  | ND    | 0.20                      |   |                       |      |        |   |  |
| Indeno(1,2,3-cd)pyrene            | ND    | 0.20                      |   |                       |      |        |   |  |
| Isophorone                        | ND    | 0.20                      |   |                       |      |        |   |  |
| Naphthalene                       | ND    | 0.20                      |   |                       |      |        |   |  |
| Nitrobenzene                      | ND    | 0.20                      |   |                       |      |        |   |  |
| N-Nitrosodi-n-propylamine         | ND    | 0.20                      |   |                       |      |        |   |  |
| N-Nitrosodiphenylamine            | ND    | 0.20                      |   |                       |      |        |   |  |
| Pentachlorophenol                 | ND    | 0.20                      |   |                       |      |        |   |  |
| Phenanthrene                      | ND    | 0.20                      |   |                       |      |        |   |  |
| Phenol                            | ND    | 0.20                      |   |                       |      |        |   |  |
| Pyrene                            | ND    | 0.20                      |   |                       |      |        |   |  |
| <i>Surr: 2,4,6-Tribromophenol</i> | 2.518 | 0.20                      | 5 | 0                     | 50.4 | 34-129 | 0 |  |
| <i>Surr: 2-Fluorobiphenyl</i>     | 3.773 | 0.20                      | 5 | 0                     | 75.5 | 40-125 | 0 |  |
| <i>Surr: 2-Fluorophenol</i>       | 3.552 | 0.20                      | 5 | 0                     | 71   | 20-120 | 0 |  |
| <i>Surr: 4-Terphenyl-d14</i>      | 3.799 | 0.20                      | 5 | 0                     | 76   | 40-135 | 0 |  |
| <i>Surr: Nitrobenzene-d5</i>      | 3.523 | 0.20                      | 5 | 0                     | 70.5 | 41-120 | 0 |  |
| <i>Surr: Phenol-d6</i>            | 3.276 | 0.20                      | 5 | 0                     | 65.5 | 20-120 | 0 |  |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **77075** Instrument ID **SV-4** Method: **SW8270**

| LCS                         |        |                      |         | Sample ID: SLCSW1-140228-77075 |                | Units: µg/L   |                      | Analysis Date: 2/28/2014 04:15 PM |           |      |
|-----------------------------|--------|----------------------|---------|--------------------------------|----------------|---------------|----------------------|-----------------------------------|-----------|------|
| Client ID:                  |        | Run ID: SV-4_140228C |         |                                | SeqNo: 3553585 |               | Prep Date: 2/28/2014 |                                   | DF: 1     |      |
| Analyte                     | Result | PQL                  | SPK Val | SPK Ref Value                  | %REC           | Control Limit | RPD Ref Value        | %RPD                              | RPD Limit | Qual |
| 1,1'-Biphenyl               | 4.026  | 0.20                 | 5       | 0                              | 80.5           | 45-125        |                      |                                   |           |      |
| 1-Methylnaphthalene         | 3.604  | 0.20                 | 5       | 0                              | 72.1           | 45-120        |                      |                                   |           |      |
| 2,4,5-Trichlorophenol       | 3.527  | 0.20                 | 5       | 0                              | 70.5           | 46-120        |                      |                                   |           |      |
| 2,4,6-Trichlorophenol       | 3.514  | 0.20                 | 5       | 0                              | 70.3           | 42-120        |                      |                                   |           |      |
| 2,4-Dichlorophenol          | 3.478  | 0.20                 | 5       | 0                              | 69.6           | 49-120        |                      |                                   |           |      |
| 2,4-Dimethylphenol          | 3.496  | 0.20                 | 5       | 0                              | 69.9           | 35-120        |                      |                                   |           |      |
| 2,4-Dinitrophenol           | 2.354  | 1.0                  | 5       | 0                              | 47.1           | 15-120        |                      |                                   |           |      |
| 2,4-Dinitrotoluene          | 3.626  | 0.20                 | 5       | 0                              | 72.5           | 50-122        |                      |                                   |           |      |
| 2,6-Dinitrotoluene          | 3.704  | 0.20                 | 5       | 0                              | 74.1           | 50-120        |                      |                                   |           |      |
| 2-Chloronaphthalene         | 3.407  | 0.20                 | 5       | 0                              | 68.1           | 50-120        |                      |                                   |           |      |
| 2-Chlorophenol              | 3.511  | 0.20                 | 5       | 0                              | 70.2           | 40-120        |                      |                                   |           |      |
| 2-Methylnaphthalene         | 3.728  | 0.20                 | 5       | 0                              | 74.6           | 50-120        |                      |                                   |           |      |
| 2-Methylphenol              | 3.221  | 0.20                 | 5       | 0                              | 64.4           | 45-120        |                      |                                   |           |      |
| 2-Nitroaniline              | 4.017  | 0.20                 | 5       | 0                              | 80.3           | 28-139        |                      |                                   |           |      |
| 2-Nitrophenol               | 3.411  | 0.20                 | 5       | 0                              | 68.2           | 40-120        |                      |                                   |           |      |
| 3&4-Methylphenol            | 3.438  | 0.20                 | 5       | 0                              | 68.8           | 35-120        |                      |                                   |           |      |
| 3,3'-Dichlorobenzidine      | 4.461  | 0.20                 | 5       | 0                              | 89.2           | 15-120        |                      |                                   |           |      |
| 3-Nitroaniline              | 3.897  | 0.20                 | 5       | 0                              | 77.9           | 30-120        |                      |                                   |           |      |
| 4,6-Dinitro-2-methylphenol  | 3.782  | 0.20                 | 5       | 0                              | 75.6           | 25-121        |                      |                                   |           |      |
| 4-Bromophenyl phenyl ether  | 4.073  | 0.20                 | 5       | 0                              | 81.5           | 45-120        |                      |                                   |           |      |
| 4-Chloro-3-methylphenol     | 3.58   | 0.20                 | 5       | 0                              | 71.6           | 47-120        |                      |                                   |           |      |
| 4-Chloroaniline             | 3.488  | 0.20                 | 5       | 0                              | 69.8           | 20-120        |                      |                                   |           |      |
| 4-Chlorophenyl phenyl ether | 3.762  | 0.20                 | 5       | 0                              | 75.2           | 50-120        |                      |                                   |           |      |
| 4-Nitroaniline              | 3.17   | 0.20                 | 5       | 0                              | 63.4           | 30-133        |                      |                                   |           |      |
| 4-Nitrophenol               | 3.737  | 1.0                  | 5       | 0                              | 74.7           | 30-130        |                      |                                   |           |      |
| Acenaphthene                | 3.556  | 0.20                 | 5       | 0                              | 71.1           | 45-120        |                      |                                   |           |      |
| Acenaphthylene              | 3.74   | 0.20                 | 5       | 0                              | 74.8           | 47-120        |                      |                                   |           |      |
| Acetophenone                | 3.375  | 0.20                 | 5       | 0                              | 67.5           | 40-120        |                      |                                   |           |      |
| Anthracene                  | 3.78   | 0.20                 | 5       | 0                              | 75.6           | 45-120        |                      |                                   |           |      |
| Atrazine                    | 4.057  | 0.20                 | 5       | 0                              | 81.1           | 40-130        |                      |                                   |           |      |
| Benz(a)anthracene           | 3.608  | 0.20                 | 5       | 0                              | 72.2           | 40-120        |                      |                                   |           |      |
| Benzaldehyde                | 1.062  | 0.20                 | 5       | 0                              | 21.2           | 15-120        |                      |                                   |           |      |
| Benzo(a)pyrene              | 3.861  | 0.20                 | 5       | 0                              | 77.2           | 45-120        |                      |                                   |           |      |
| Benzo(b)fluoranthene        | 3.934  | 0.20                 | 5       | 0                              | 78.7           | 50-120        |                      |                                   |           |      |
| Benzo(g,h,i)perylene        | 3.614  | 0.20                 | 5       | 0                              | 72.3           | 42-127        |                      |                                   |           |      |
| Benzo(k)fluoranthene        | 3.861  | 0.20                 | 5       | 0                              | 77.2           | 45-127        |                      |                                   |           |      |
| Bis(2-chloroethoxy)methane  | 3.493  | 0.20                 | 5       | 0                              | 69.9           | 45-120        |                      |                                   |           |      |
| Bis(2-chloroethyl)ether     | 3.403  | 0.20                 | 5       | 0                              | 68.1           | 37-121        |                      |                                   |           |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

| Batch ID: <b>77075</b>            |       | Instrument ID <b>SV-4</b> |   | Method: <b>SW8270</b> |      |        |   |
|-----------------------------------|-------|---------------------------|---|-----------------------|------|--------|---|
| Bis(2-chloroisopropyl)ether       | 3.582 | 0.20                      | 5 | 0                     | 71.6 | 40-120 |   |
| Bis(2-ethylhexyl)phthalate        | 3.76  | 0.20                      | 5 | 0                     | 75.2 | 40-139 |   |
| Butyl benzyl phthalate            | 3.786 | 0.20                      | 5 | 0                     | 75.7 | 47-123 |   |
| Caprolactam                       | 4.073 | 0.20                      | 5 | 0                     | 81.5 | 35-134 |   |
| Carbazole                         | 3.543 | 0.20                      | 5 | 0                     | 70.9 | 42-128 |   |
| Chrysene                          | 3.715 | 0.20                      | 5 | 0                     | 74.3 | 43-120 |   |
| Dibenz(a,h)anthracene             | 3.88  | 0.20                      | 5 | 0                     | 77.6 | 45-125 |   |
| Dibenzofuran                      | 3.704 | 0.20                      | 5 | 0                     | 74.1 | 50-120 |   |
| Diethyl phthalate                 | 3.521 | 0.20                      | 5 | 0                     | 70.4 | 41-120 |   |
| Dimethyl phthalate                | 3.704 | 0.20                      | 5 | 0                     | 74.1 | 40-122 |   |
| Di-n-butyl phthalate              | 3.986 | 0.20                      | 5 | 0                     | 79.7 | 45-123 |   |
| Di-n-octyl phthalate              | 3.899 | 0.20                      | 5 | 0                     | 78   | 45-129 |   |
| Fluoranthene                      | 3.838 | 0.20                      | 5 | 0                     | 76.8 | 45-125 |   |
| Fluorene                          | 3.763 | 0.20                      | 5 | 0                     | 75.3 | 49-120 |   |
| Hexachlorobenzene                 | 3.816 | 0.20                      | 5 | 0                     | 76.3 | 48-120 |   |
| Hexachlorobutadiene               | 3.645 | 0.20                      | 5 | 0                     | 72.9 | 40-120 |   |
| Hexachlorocyclopentadiene         | 2.85  | 0.20                      | 5 | 0                     | 57   | 34-136 |   |
| Hexachloroethane                  | 3.483 | 0.20                      | 5 | 0                     | 69.7 | 40-120 |   |
| Indeno(1,2,3-cd)pyrene            | 3.527 | 0.20                      | 5 | 0                     | 70.5 | 41-128 |   |
| Isophorone                        | 3.462 | 0.20                      | 5 | 0                     | 69.2 | 40-121 |   |
| Naphthalene                       | 3.721 | 0.20                      | 5 | 0                     | 74.4 | 45-120 |   |
| Nitrobenzene                      | 3.472 | 0.20                      | 5 | 0                     | 69.4 | 44-120 |   |
| N-Nitrosodi-n-propylamine         | 3.33  | 0.20                      | 5 | 0                     | 66.6 | 40-120 |   |
| N-Nitrosodiphenylamine            | 4.07  | 0.20                      | 5 | 0                     | 81.4 | 40-125 |   |
| Pentachlorophenol                 | 2.023 | 0.20                      | 5 | 0                     | 40.5 | 19-121 |   |
| Phenanthrene                      | 3.682 | 0.20                      | 5 | 0                     | 73.6 | 45-121 |   |
| Phenol                            | 3.333 | 0.20                      | 5 | 0                     | 66.7 | 20-124 |   |
| Pyrene                            | 3.795 | 0.20                      | 5 | 0                     | 75.9 | 40-130 |   |
| <i>Surr: 2,4,6-Tribromophenol</i> | 3.631 | 0.20                      | 5 | 0                     | 72.6 | 34-129 | 0 |
| <i>Surr: 2-Fluorobiphenyl</i>     | 3.713 | 0.20                      | 5 | 0                     | 74.3 | 40-125 | 0 |
| <i>Surr: 2-Fluorophenol</i>       | 3.513 | 0.20                      | 5 | 0                     | 70.3 | 20-120 | 0 |
| <i>Surr: 4-Terphenyl-d14</i>      | 3.827 | 0.20                      | 5 | 0                     | 76.5 | 40-135 | 0 |
| <i>Surr: Nitrobenzene-d5</i>      | 3.414 | 0.20                      | 5 | 0                     | 68.3 | 41-120 | 0 |
| <i>Surr: Phenol-d6</i>            | 3.447 | 0.20                      | 5 | 0                     | 68.9 | 20-120 | 0 |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **77075** Instrument ID **SV-4** Method: **SW8270**

| LCSD                        |        |                      |         | Sample ID: SLCSDW1-140228-77075 |                | Units: µg/L   |                      | Analysis Date: 2/28/2014 04:36 PM |           |      |
|-----------------------------|--------|----------------------|---------|---------------------------------|----------------|---------------|----------------------|-----------------------------------|-----------|------|
| Client ID:                  |        | Run ID: SV-4_140228C |         |                                 | SeqNo: 3553586 |               | Prep Date: 2/28/2014 |                                   | DF: 1     |      |
| Analyte                     | Result | PQL                  | SPK Val | SPK Ref Value                   | %REC           | Control Limit | RPD Ref Value        | %RPD                              | RPD Limit | Qual |
| 1,1'-Biphenyl               | 4.069  | 0.20                 | 5       | 0                               | 81.4           | 45-125        | 4.026                | 1.06                              | 20        |      |
| 1-Methylnaphthalene         | 3.684  | 0.20                 | 5       | 0                               | 73.7           | 45-120        | 3.604                | 2.2                               | 20        |      |
| 2,4,5-Trichlorophenol       | 3.636  | 0.20                 | 5       | 0                               | 72.7           | 46-120        | 3.527                | 3.05                              | 20        |      |
| 2,4,6-Trichlorophenol       | 3.798  | 0.20                 | 5       | 0                               | 76             | 42-120        | 3.514                | 7.76                              | 20        |      |
| 2,4-Dichlorophenol          | 3.672  | 0.20                 | 5       | 0                               | 73.4           | 49-120        | 3.478                | 5.41                              | 20        |      |
| 2,4-Dimethylphenol          | 3.573  | 0.20                 | 5       | 0                               | 71.5           | 35-120        | 3.496                | 2.18                              | 20        |      |
| 2,4-Dinitrophenol           | 3.106  | 1.0                  | 5       | 0                               | 62.1           | 15-120        | 2.354                | 27.5                              | 50        |      |
| 2,4-Dinitrotoluene          | 3.846  | 0.20                 | 5       | 0                               | 76.9           | 50-122        | 3.626                | 5.89                              | 20        |      |
| 2,6-Dinitrotoluene          | 3.95   | 0.20                 | 5       | 0                               | 79             | 50-120        | 3.704                | 6.41                              | 20        |      |
| 2-Chloronaphthalene         | 3.646  | 0.20                 | 5       | 0                               | 72.9           | 50-120        | 3.407                | 6.77                              | 20        |      |
| 2-Chlorophenol              | 3.576  | 0.20                 | 5       | 0                               | 71.5           | 40-120        | 3.511                | 1.84                              | 20        |      |
| 2-Methylnaphthalene         | 3.792  | 0.20                 | 5       | 0                               | 75.8           | 50-120        | 3.728                | 1.71                              | 20        |      |
| 2-Methylphenol              | 3.474  | 0.20                 | 5       | 0                               | 69.5           | 45-120        | 3.221                | 7.59                              | 20        |      |
| 2-Nitroaniline              | 4.324  | 0.20                 | 5       | 0                               | 86.5           | 28-139        | 4.017                | 7.36                              | 20        |      |
| 2-Nitrophenol               | 3.625  | 0.20                 | 5       | 0                               | 72.5           | 40-120        | 3.411                | 6.08                              | 20        |      |
| 3&4-Methylphenol            | 3.559  | 0.20                 | 5       | 0                               | 71.2           | 35-120        | 3.438                | 3.45                              | 20        |      |
| 3,3'-Dichlorobenzidine      | 5.093  | 0.20                 | 5       | 0                               | 102            | 15-120        | 4.461                | 13.2                              | 20        |      |
| 3-Nitroaniline              | 4.426  | 0.20                 | 5       | 0                               | 88.5           | 30-120        | 3.897                | 12.7                              | 20        |      |
| 4,6-Dinitro-2-methylphenol  | 4.254  | 0.20                 | 5       | 0                               | 85.1           | 25-121        | 3.782                | 11.8                              | 30        |      |
| 4-Bromophenyl phenyl ether  | 4.07   | 0.20                 | 5       | 0                               | 81.4           | 45-120        | 4.073                | 0.0805                            | 20        |      |
| 4-Chloro-3-methylphenol     | 3.842  | 0.20                 | 5       | 0                               | 76.8           | 47-120        | 3.58                 | 7.05                              | 20        |      |
| 4-Chloroaniline             | 3.757  | 0.20                 | 5       | 0                               | 75.1           | 20-120        | 3.488                | 7.41                              | 20        |      |
| 4-Chlorophenyl phenyl ether | 3.873  | 0.20                 | 5       | 0                               | 77.5           | 50-120        | 3.762                | 2.92                              | 20        |      |
| 4-Nitroaniline              | 3.942  | 0.20                 | 5       | 0                               | 78.8           | 30-133        | 3.17                 | 21.7                              | 20        | R    |
| 4-Nitrophenol               | 4.257  | 1.0                  | 5       | 0                               | 85.1           | 30-130        | 3.737                | 13                                | 20        |      |
| Acenaphthene                | 3.752  | 0.20                 | 5       | 0                               | 75             | 45-120        | 3.556                | 5.39                              | 20        |      |
| Acenaphthylene              | 3.788  | 0.20                 | 5       | 0                               | 75.8           | 47-120        | 3.74                 | 1.25                              | 20        |      |
| Acetophenone                | 3.526  | 0.20                 | 5       | 0                               | 70.5           | 40-120        | 3.375                | 4.39                              | 20        |      |
| Anthracene                  | 3.802  | 0.20                 | 5       | 0                               | 76             | 45-120        | 3.78                 | 0.585                             | 20        |      |
| Atrazine                    | 4.147  | 0.20                 | 5       | 0                               | 82.9           | 40-130        | 4.057                | 2.19                              | 20        |      |
| Benz(a)anthracene           | 3.712  | 0.20                 | 5       | 0                               | 74.2           | 40-120        | 3.608                | 2.84                              | 20        |      |
| Benzaldehyde                | 1.162  | 0.20                 | 5       | 0                               | 23.2           | 15-120        | 1.062                | 8.97                              | 30        |      |
| Benzo(a)pyrene              | 3.83   | 0.20                 | 5       | 0                               | 76.6           | 45-120        | 3.861                | 0.82                              | 20        |      |
| Benzo(b)fluoranthene        | 3.87   | 0.20                 | 5       | 0                               | 77.4           | 50-120        | 3.934                | 1.64                              | 20        |      |
| Benzo(g,h,i)perylene        | 3.699  | 0.20                 | 5       | 0                               | 74             | 42-127        | 3.614                | 2.33                              | 20        |      |
| Benzo(k)fluoranthene        | 3.969  | 0.20                 | 5       | 0                               | 79.4           | 45-127        | 3.861                | 2.74                              | 20        |      |
| Bis(2-chloroethoxy)methane  | 3.59   | 0.20                 | 5       | 0                               | 71.8           | 45-120        | 3.493                | 2.72                              | 20        |      |
| Bis(2-chloroethyl)ether     | 3.377  | 0.20                 | 5       | 0                               | 67.5           | 37-121        | 3.403                | 0.788                             | 20        |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

| Batch ID: <b>77075</b>            |       | Instrument ID <b>SV-4</b> |   | Method: <b>SW8270</b> |      |        |       |       |    |   |
|-----------------------------------|-------|---------------------------|---|-----------------------|------|--------|-------|-------|----|---|
| Bis(2-chloroisopropyl)ether       | 3.657 | 0.20                      | 5 | 0                     | 73.1 | 40-120 | 3.582 | 2.06  | 20 |   |
| Bis(2-ethylhexyl)phthalate        | 3.933 | 0.20                      | 5 | 0                     | 78.7 | 40-139 | 3.76  | 4.5   | 20 |   |
| Butyl benzyl phthalate            | 3.991 | 0.20                      | 5 | 0                     | 79.8 | 47-123 | 3.786 | 5.28  | 20 |   |
| Caprolactam                       | 4.436 | 0.20                      | 5 | 0                     | 88.7 | 35-134 | 4.073 | 8.53  | 20 |   |
| Carbazole                         | 3.954 | 0.20                      | 5 | 0                     | 79.1 | 42-128 | 3.543 | 10.9  | 20 |   |
| Chrysene                          | 3.858 | 0.20                      | 5 | 0                     | 77.2 | 43-120 | 3.715 | 3.79  | 20 |   |
| Dibenz(a,h)anthracene             | 3.96  | 0.20                      | 5 | 0                     | 79.2 | 45-125 | 3.88  | 2.02  | 20 |   |
| Dibenzofuran                      | 3.827 | 0.20                      | 5 | 0                     | 76.5 | 50-120 | 3.704 | 3.28  | 20 |   |
| Diethyl phthalate                 | 3.706 | 0.20                      | 5 | 0                     | 74.1 | 41-120 | 3.521 | 5.14  | 20 |   |
| Dimethyl phthalate                | 3.814 | 0.20                      | 5 | 0                     | 76.3 | 40-122 | 3.704 | 2.92  | 20 |   |
| Di-n-butyl phthalate              | 3.959 | 0.20                      | 5 | 0                     | 79.2 | 45-123 | 3.986 | 0.68  | 20 |   |
| Di-n-octyl phthalate              | 3.87  | 0.20                      | 5 | 0                     | 77.4 | 45-129 | 3.899 | 0.728 | 20 |   |
| Fluoranthene                      | 3.9   | 0.20                      | 5 | 0                     | 78   | 45-125 | 3.838 | 1.61  | 20 |   |
| Fluorene                          | 3.815 | 0.20                      | 5 | 0                     | 76.3 | 49-120 | 3.763 | 1.37  | 20 |   |
| Hexachlorobenzene                 | 3.966 | 0.20                      | 5 | 0                     | 79.3 | 48-120 | 3.816 | 3.85  | 20 |   |
| Hexachlorobutadiene               | 3.844 | 0.20                      | 5 | 0                     | 76.9 | 40-120 | 3.645 | 5.31  | 20 |   |
| Hexachlorocyclopentadiene         | 3.23  | 0.20                      | 5 | 0                     | 64.6 | 34-136 | 2.85  | 12.5  | 20 |   |
| Hexachloroethane                  | 3.588 | 0.20                      | 5 | 0                     | 71.8 | 40-120 | 3.483 | 3     | 20 |   |
| Indeno(1,2,3-cd)pyrene            | 3.855 | 0.20                      | 5 | 0                     | 77.1 | 41-128 | 3.527 | 8.9   | 20 |   |
| Isophorone                        | 3.512 | 0.20                      | 5 | 0                     | 70.2 | 40-121 | 3.462 | 1.43  | 20 |   |
| Naphthalene                       | 3.68  | 0.20                      | 5 | 0                     | 73.6 | 45-120 | 3.721 | 1.11  | 20 |   |
| Nitrobenzene                      | 3.536 | 0.20                      | 5 | 0                     | 70.7 | 44-120 | 3.472 | 1.84  | 20 |   |
| N-Nitrosodi-n-propylamine         | 3.416 | 0.20                      | 5 | 0                     | 68.3 | 40-120 | 3.33  | 2.55  | 20 |   |
| N-Nitrosodiphenylamine            | 4.166 | 0.20                      | 5 | 0                     | 83.3 | 40-125 | 4.07  | 2.34  | 20 |   |
| Pentachlorophenol                 | 2.733 | 0.20                      | 5 | 0                     | 54.7 | 19-121 | 2.023 | 29.9  | 20 | R |
| Phenanthrene                      | 3.776 | 0.20                      | 5 | 0                     | 75.5 | 45-121 | 3.682 | 2.53  | 20 |   |
| Phenol                            | 3.431 | 0.20                      | 5 | 0                     | 68.6 | 20-124 | 3.333 | 2.89  | 20 |   |
| Pyrene                            | 3.88  | 0.20                      | 5 | 0                     | 77.6 | 40-130 | 3.795 | 2.24  | 20 |   |
| <i>Surr: 2,4,6-Tribromophenol</i> | 4.154 | 0.20                      | 5 | 0                     | 83.1 | 34-129 | 3.631 | 13.4  | 0  |   |
| <i>Surr: 2-Fluorobiphenyl</i>     | 3.794 | 0.20                      | 5 | 0                     | 75.9 | 40-125 | 3.713 | 2.15  | 0  |   |
| <i>Surr: 2-Fluorophenol</i>       | 3.67  | 0.20                      | 5 | 0                     | 73.4 | 20-120 | 3.513 | 4.35  | 0  |   |
| <i>Surr: 4-Terphenyl-d14</i>      | 3.906 | 0.20                      | 5 | 0                     | 78.1 | 40-135 | 3.827 | 2.04  | 0  |   |
| <i>Surr: Nitrobenzene-d5</i>      | 3.609 | 0.20                      | 5 | 0                     | 72.2 | 41-120 | 3.414 | 5.54  | 0  |   |
| <i>Surr: Phenol-d6</i>            | 3.571 | 0.20                      | 5 | 0                     | 71.4 | 20-120 | 3.447 | 3.53  | 0  |   |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **77075** Instrument ID **SV-4** Method: **SW8270**

| MS                          |        |                      |         | Sample ID: 14021211-13FMS |                | Units: µg/L   |                      | Analysis Date: 2/28/2014 05:57 PM |           |      |
|-----------------------------|--------|----------------------|---------|---------------------------|----------------|---------------|----------------------|-----------------------------------|-----------|------|
| Client ID: MW-26            |        | Run ID: SV-4_140228C |         |                           | SeqNo: 3553600 |               | Prep Date: 2/28/2014 |                                   | DF: 1     |      |
| Analyte                     | Result | PQL                  | SPK Val | SPK Ref Value             | %REC           | Control Limit | RPD Ref Value        | %RPD                              | RPD Limit | Qual |
| 1,1'-Biphenyl               | 4.183  | 0.20                 | 5       | 0                         | 83.7           | 45-125        |                      |                                   |           |      |
| 1-Methylnaphthalene         | 3.766  | 0.20                 | 5       | 0                         | 75.3           | 45-120        |                      |                                   |           |      |
| 2,4,5-Trichlorophenol       | 3.689  | 0.20                 | 5       | 0                         | 73.8           | 46-120        |                      |                                   |           |      |
| 2,4,6-Trichlorophenol       | 3.93   | 0.20                 | 5       | 0                         | 78.6           | 42-120        |                      |                                   |           |      |
| 2,4-Dichlorophenol          | 3.584  | 0.20                 | 5       | 0                         | 71.7           | 49-120        |                      |                                   |           |      |
| 2,4-Dimethylphenol          | 3.599  | 0.20                 | 5       | 0                         | 72             | 35-120        |                      |                                   |           |      |
| 2,4-Dinitrophenol           | 3.658  | 1.0                  | 5       | 0                         | 73.2           | 15-120        |                      |                                   |           |      |
| 2,4-Dinitrotoluene          | 3.869  | 0.20                 | 5       | 0                         | 77.4           | 50-122        |                      |                                   |           |      |
| 2,6-Dinitrotoluene          | 6.597  | 0.20                 | 5       | 0                         | 132            | 50-120        |                      |                                   |           | S    |
| 2-Chloronaphthalene         | 3.613  | 0.20                 | 5       | 0                         | 72.3           | 50-120        |                      |                                   |           |      |
| 2-Chlorophenol              | 3.609  | 0.20                 | 5       | 0                         | 72.2           | 40-120        |                      |                                   |           |      |
| 2-Methylnaphthalene         | 3.826  | 0.20                 | 5       | 0                         | 76.5           | 50-120        |                      |                                   |           |      |
| 2-Methylphenol              | 3.515  | 0.20                 | 5       | 0                         | 70.3           | 45-120        |                      |                                   |           |      |
| 2-Nitroaniline              | 4.341  | 0.20                 | 5       | 0                         | 86.8           | 28-139        |                      |                                   |           |      |
| 2-Nitrophenol               | 3.756  | 0.20                 | 5       | 0                         | 75.1           | 40-120        |                      |                                   |           |      |
| 3&4-Methylphenol            | 3.59   | 0.20                 | 5       | 0                         | 71.8           | 35-120        |                      |                                   |           |      |
| 3,3'-Dichlorobenzidine      | 2.231  | 0.20                 | 5       | 0                         | 44.6           | 15-120        |                      |                                   |           |      |
| 3-Nitroaniline              | 4.496  | 0.20                 | 5       | 0                         | 89.9           | 30-120        |                      |                                   |           |      |
| 4,6-Dinitro-2-methylphenol  | 4.626  | 0.20                 | 5       | 0                         | 92.5           | 25-121        |                      |                                   |           |      |
| 4-Bromophenyl phenyl ether  | 3.934  | 0.20                 | 5       | 0                         | 78.7           | 45-120        |                      |                                   |           |      |
| 4-Chloro-3-methylphenol     | 4.053  | 0.20                 | 5       | 0                         | 81.1           | 47-120        |                      |                                   |           |      |
| 4-Chloroaniline             | 3.452  | 0.20                 | 5       | 0                         | 69             | 20-120        |                      |                                   |           |      |
| 4-Chlorophenyl phenyl ether | 3.877  | 0.20                 | 5       | 0                         | 77.5           | 50-120        |                      |                                   |           |      |
| 4-Nitroaniline              | 3.734  | 0.20                 | 5       | 0                         | 74.7           | 30-133        |                      |                                   |           |      |
| 4-Nitrophenol               | 4.658  | 1.0                  | 5       | 0                         | 93.2           | 30-130        |                      |                                   |           |      |
| Acenaphthene                | 3.753  | 0.20                 | 5       | 0                         | 75.1           | 45-120        |                      |                                   |           |      |
| Acenaphthylene              | 4.007  | 0.20                 | 5       | 0                         | 80.1           | 47-120        |                      |                                   |           |      |
| Acetophenone                | 3.517  | 0.20                 | 5       | 0                         | 70.3           | 40-120        |                      |                                   |           |      |
| Anthracene                  | 4      | 0.20                 | 5       | 0                         | 80             | 45-120        |                      |                                   |           |      |
| Atrazine                    | 4.234  | 0.20                 | 5       | 0                         | 84.7           | 40-130        |                      |                                   |           |      |
| Benz(a)anthracene           | 4.183  | 0.20                 | 5       | 0                         | 83.7           | 40-120        |                      |                                   |           |      |
| Benzaldehyde                | 1.196  | 0.20                 | 5       | 0                         | 23.9           | 15-120        |                      |                                   |           |      |
| Benzo(a)pyrene              | 4.038  | 0.20                 | 5       | 0                         | 80.8           | 45-120        |                      |                                   |           |      |
| Benzo(b)fluoranthene        | 4.09   | 0.20                 | 5       | 0                         | 81.8           | 50-120        |                      |                                   |           |      |
| Benzo(g,h,i)perylene        | 4.043  | 0.20                 | 5       | 0                         | 80.9           | 42-127        |                      |                                   |           |      |
| Benzo(k)fluoranthene        | 4.244  | 0.20                 | 5       | 0                         | 84.9           | 45-127        |                      |                                   |           |      |
| Bis(2-chloroethoxy)methane  | 3.498  | 0.20                 | 5       | 0                         | 70             | 45-120        |                      |                                   |           |      |
| Bis(2-chloroethyl)ether     | 3.601  | 0.20                 | 5       | 0                         | 72             | 37-121        |                      |                                   |           |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

| Batch ID: <b>77075</b>            |       | Instrument ID <b>SV-4</b> |   | Method: <b>SW8270</b> |      |        |   |
|-----------------------------------|-------|---------------------------|---|-----------------------|------|--------|---|
| Bis(2-chloroisopropyl)ether       | 3.777 | 0.20                      | 5 | 0                     | 75.5 | 40-120 |   |
| Bis(2-ethylhexyl)phthalate        | 4.41  | 0.20                      | 5 | 0.05586               | 87.1 | 40-139 |   |
| Butyl benzyl phthalate            | 4.439 | 0.20                      | 5 | 0                     | 88.8 | 47-123 |   |
| Caprolactam                       | 4.624 | 0.20                      | 5 | 0                     | 92.5 | 35-134 |   |
| Carbazole                         | 4.687 | 0.20                      | 5 | 0                     | 93.7 | 42-128 |   |
| Chrysene                          | 4.145 | 0.20                      | 5 | 0                     | 82.9 | 43-120 |   |
| Dibenz(a,h)anthracene             | 4.258 | 0.20                      | 5 | 0                     | 85.2 | 45-125 |   |
| Dibenzofuran                      | 3.917 | 0.20                      | 5 | 0                     | 78.3 | 50-120 |   |
| Diethyl phthalate                 | 3.965 | 0.20                      | 5 | 0                     | 79.3 | 41-120 |   |
| Dimethyl phthalate                | 4.093 | 0.20                      | 5 | 0                     | 81.9 | 40-122 |   |
| Di-n-butyl phthalate              | 4.438 | 0.20                      | 5 | 0                     | 88.8 | 45-123 |   |
| Di-n-octyl phthalate              | 4.161 | 0.20                      | 5 | 0                     | 83.2 | 45-129 |   |
| Fluoranthene                      | 4.109 | 0.20                      | 5 | 0                     | 82.2 | 45-125 |   |
| Fluorene                          | 3.931 | 0.20                      | 5 | 0                     | 78.6 | 49-120 |   |
| Hexachlorobenzene                 | 3.828 | 0.20                      | 5 | 0                     | 76.6 | 48-120 |   |
| Hexachlorobutadiene               | 3.66  | 0.20                      | 5 | 0                     | 73.2 | 40-120 |   |
| Hexachlorocyclopentadiene         | 3.246 | 0.20                      | 5 | 0                     | 64.9 | 34-136 |   |
| Hexachloroethane                  | 3.558 | 0.20                      | 5 | 0                     | 71.2 | 40-120 |   |
| Indeno(1,2,3-cd)pyrene            | 3.926 | 0.20                      | 5 | 0                     | 78.5 | 41-128 |   |
| Isophorone                        | 3.543 | 0.20                      | 5 | 0                     | 70.9 | 40-121 |   |
| Naphthalene                       | 3.762 | 0.20                      | 5 | 0                     | 75.2 | 45-120 |   |
| Nitrobenzene                      | 3.528 | 0.20                      | 5 | 0                     | 70.6 | 44-120 |   |
| N-Nitrosodi-n-propylamine         | 3.468 | 0.20                      | 5 | 0                     | 69.4 | 40-120 |   |
| N-Nitrosodiphenylamine            | 4.02  | 0.20                      | 5 | 0                     | 80.4 | 40-125 |   |
| Pentachlorophenol                 | 4.218 | 0.20                      | 5 | 0                     | 84.4 | 19-121 |   |
| Phenanthrene                      | 3.87  | 0.20                      | 5 | 0                     | 77.4 | 45-121 |   |
| Phenol                            | 3.468 | 0.20                      | 5 | 0                     | 69.4 | 20-124 |   |
| Pyrene                            | 4.262 | 0.20                      | 5 | 0                     | 85.2 | 40-130 |   |
| <i>Surr: 2,4,6-Tribromophenol</i> | 4.533 | 0.20                      | 5 | 0                     | 90.7 | 34-129 | 0 |
| <i>Surr: 2-Fluorobiphenyl</i>     | 3.906 | 0.20                      | 5 | 0                     | 78.1 | 40-125 | 0 |
| <i>Surr: 2-Fluorophenol</i>       | 3.685 | 0.20                      | 5 | 0                     | 73.7 | 20-120 | 0 |
| <i>Surr: 4-Terphenyl-d14</i>      | 4.433 | 0.20                      | 5 | 0                     | 88.7 | 40-135 | 0 |
| <i>Surr: Nitrobenzene-d5</i>      | 3.576 | 0.20                      | 5 | 0                     | 71.5 | 41-120 | 0 |
| <i>Surr: Phenol-d6</i>            | 3.633 | 0.20                      | 5 | 0                     | 72.7 | 20-120 | 0 |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **77075** Instrument ID **SV-4** Method: **SW8270**

| MSD                         |        | Sample ID: <b>14021211-13FMSD</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>2/28/2014 06:17 PM</b> |           |              |
|-----------------------------|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|------------------------------------------|-----------|--------------|
| Client ID: <b>MW-26</b>     |        | Run ID: <b>SV-4_140228C</b>       |         |               |      | SeqNo: <b>3553601</b> |               | Prep Date: <b>2/28/2014</b>              |           | DF: <b>1</b> |
| Analyte                     | Result | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                     | RPD Limit | Qual         |
| 1,1'-Biphenyl               | 4.128  | 0.20                              | 5       | 0             | 82.6 | 45-125                | 4.183         | 1.33                                     | 20        |              |
| 1-Methylnaphthalene         | 3.564  | 0.20                              | 5       | 0             | 71.3 | 45-120                | 3.766         | 5.52                                     | 20        |              |
| 2,4,5-Trichlorophenol       | 3.822  | 0.20                              | 5       | 0             | 76.4 | 46-120                | 3.689         | 3.52                                     | 20        |              |
| 2,4,6-Trichlorophenol       | 3.745  | 0.20                              | 5       | 0             | 74.9 | 42-120                | 3.93          | 4.82                                     | 20        |              |
| 2,4-Dichlorophenol          | 3.377  | 0.20                              | 5       | 0             | 67.5 | 49-120                | 3.584         | 5.96                                     | 20        |              |
| 2,4-Dimethylphenol          | 3.427  | 0.20                              | 5       | 0             | 68.5 | 35-120                | 3.599         | 4.9                                      | 20        |              |
| 2,4-Dinitrophenol           | 2.77   | 1.0                               | 5       | 0             | 55.4 | 15-120                | 3.658         | 27.6                                     | 50        |              |
| 2,4-Dinitrotoluene          | 3.983  | 0.20                              | 5       | 0             | 79.7 | 50-122                | 3.869         | 2.9                                      | 20        |              |
| 2,6-Dinitrotoluene          | 6.425  | 0.20                              | 5       | 0             | 129  | 50-120                | 6.597         | 2.63                                     | 20        | S            |
| 2-Chloronaphthalene         | 3.39   | 0.20                              | 5       | 0             | 67.8 | 50-120                | 3.613         | 6.37                                     | 20        |              |
| 2-Chlorophenol              | 3.442  | 0.20                              | 5       | 0             | 68.8 | 40-120                | 3.609         | 4.74                                     | 20        |              |
| 2-Methylnaphthalene         | 3.65   | 0.20                              | 5       | 0             | 73   | 50-120                | 3.826         | 4.7                                      | 20        |              |
| 2-Methylphenol              | 3.354  | 0.20                              | 5       | 0             | 67.1 | 45-120                | 3.515         | 4.69                                     | 20        |              |
| 2-Nitroaniline              | 4.178  | 0.20                              | 5       | 0             | 83.6 | 28-139                | 4.341         | 3.82                                     | 20        |              |
| 2-Nitrophenol               | 3.288  | 0.20                              | 5       | 0             | 65.8 | 40-120                | 3.756         | 13.3                                     | 20        |              |
| 3&4-Methylphenol            | 3.378  | 0.20                              | 5       | 0             | 67.6 | 35-120                | 3.59          | 6.06                                     | 20        |              |
| 3,3'-Dichlorobenzidine      | 4.206  | 0.20                              | 5       | 0             | 84.1 | 15-120                | 2.231         | 61.4                                     | 20        | R            |
| 3-Nitroaniline              | 4.47   | 0.20                              | 5       | 0             | 89.4 | 30-120                | 4.496         | 0.581                                    | 20        |              |
| 4,6-Dinitro-2-methylphenol  | 3.926  | 0.20                              | 5       | 0             | 78.5 | 25-121                | 4.626         | 16.4                                     | 20        |              |
| 4-Bromophenyl phenyl ether  | 3.907  | 0.20                              | 5       | 0             | 78.1 | 45-120                | 3.934         | 0.707                                    | 20        |              |
| 4-Chloro-3-methylphenol     | 4.035  | 0.20                              | 5       | 0             | 80.7 | 47-120                | 4.053         | 0.453                                    | 20        |              |
| 4-Chloroaniline             | 3.392  | 0.20                              | 5       | 0             | 67.8 | 20-120                | 3.452         | 1.75                                     | 20        |              |
| 4-Chlorophenyl phenyl ether | 3.79   | 0.20                              | 5       | 0             | 75.8 | 50-120                | 3.877         | 2.28                                     | 20        |              |
| 4-Nitroaniline              | 4.084  | 0.20                              | 5       | 0             | 81.7 | 30-133                | 3.734         | 8.93                                     | 20        |              |
| 4-Nitrophenol               | 4.058  | 1.0                               | 5       | 0             | 81.2 | 30-130                | 4.658         | 13.8                                     | 20        |              |
| Acenaphthene                | 3.531  | 0.20                              | 5       | 0             | 70.6 | 45-120                | 3.753         | 6.08                                     | 20        |              |
| Acenaphthylene              | 3.804  | 0.20                              | 5       | 0             | 76.1 | 47-120                | 4.007         | 5.21                                     | 20        |              |
| Acetophenone                | 3.312  | 0.20                              | 5       | 0             | 66.2 | 40-120                | 3.517         | 6                                        | 20        |              |
| Anthracene                  | 4.133  | 0.20                              | 5       | 0             | 82.7 | 45-120                | 4             | 3.26                                     | 20        |              |
| Atrazine                    | 4.475  | 0.20                              | 5       | 0             | 89.5 | 40-130                | 4.234         | 5.52                                     | 20        |              |
| Benz(a)anthracene           | 4.141  | 0.20                              | 5       | 0             | 82.8 | 40-120                | 4.183         | 0.998                                    | 20        |              |
| Benzaldehyde                | 1.183  | 0.20                              | 5       | 0             | 23.7 | 15-120                | 1.196         | 1.02                                     | 30        |              |
| Benzo(a)pyrene              | 4.109  | 0.20                              | 5       | 0             | 82.2 | 45-120                | 4.038         | 1.76                                     | 20        |              |
| Benzo(b)fluoranthene        | 4.401  | 0.20                              | 5       | 0             | 88   | 50-120                | 4.09          | 7.32                                     | 20        |              |
| Benzo(g,h,i)perylene        | 3.968  | 0.20                              | 5       | 0             | 79.4 | 42-127                | 4.043         | 1.88                                     | 20        |              |
| Benzo(k)fluoranthene        | 4.373  | 0.20                              | 5       | 0             | 87.5 | 45-127                | 4.244         | 3                                        | 20        |              |
| Bis(2-chloroethoxy)methane  | 3.301  | 0.20                              | 5       | 0             | 66   | 45-120                | 3.498         | 5.8                                      | 20        |              |
| Bis(2-chloroethyl)ether     | 3.399  | 0.20                              | 5       | 0             | 68   | 37-121                | 3.601         | 5.78                                     | 20        |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

| Batch ID: <b>77075</b>            |       | Instrument ID <b>SV-4</b> |   | Method: <b>SW8270</b> |      |        |       |       |    |
|-----------------------------------|-------|---------------------------|---|-----------------------|------|--------|-------|-------|----|
| Bis(2-chloroisopropyl)ether       | 3.44  | 0.20                      | 5 | 0                     | 68.8 | 40-120 | 3.777 | 9.35  | 20 |
| Bis(2-ethylhexyl)phthalate        | 4.345 | 0.20                      | 5 | 0.05586               | 85.8 | 40-139 | 4.41  | 1.49  | 20 |
| Butyl benzyl phthalate            | 4.313 | 0.20                      | 5 | 0                     | 86.3 | 47-123 | 4.439 | 2.86  | 20 |
| Caprolactam                       | 4.444 | 0.20                      | 5 | 0                     | 88.9 | 35-134 | 4.624 | 3.98  | 20 |
| Carbazole                         | 4.804 | 0.20                      | 5 | 0                     | 96.1 | 42-128 | 4.687 | 2.47  | 20 |
| Chrysene                          | 3.967 | 0.20                      | 5 | 0                     | 79.3 | 43-120 | 4.145 | 4.4   | 20 |
| Dibenz(a,h)anthracene             | 4.206 | 0.20                      | 5 | 0                     | 84.1 | 45-125 | 4.258 | 1.24  | 20 |
| Dibenzofuran                      | 3.77  | 0.20                      | 5 | 0                     | 75.4 | 50-120 | 3.917 | 3.84  | 20 |
| Diethyl phthalate                 | 4.011 | 0.20                      | 5 | 0                     | 80.2 | 41-120 | 3.965 | 1.14  | 20 |
| Dimethyl phthalate                | 3.97  | 0.20                      | 5 | 0                     | 79.4 | 40-122 | 4.093 | 3.05  | 20 |
| Di-n-butyl phthalate              | 4.617 | 0.20                      | 5 | 0                     | 92.3 | 45-123 | 4.438 | 3.95  | 20 |
| Di-n-octyl phthalate              | 4.458 | 0.20                      | 5 | 0                     | 89.2 | 45-129 | 4.161 | 6.9   | 20 |
| Fluoranthene                      | 4.263 | 0.20                      | 5 | 0                     | 85.3 | 45-125 | 4.109 | 3.68  | 20 |
| Fluorene                          | 3.809 | 0.20                      | 5 | 0                     | 76.2 | 49-120 | 3.931 | 3.16  | 20 |
| Hexachlorobenzene                 | 3.863 | 0.20                      | 5 | 0                     | 77.3 | 48-120 | 3.828 | 0.923 | 20 |
| Hexachlorobutadiene               | 3.59  | 0.20                      | 5 | 0                     | 71.8 | 40-120 | 3.66  | 1.94  | 20 |
| Hexachlorocyclopentadiene         | 2.778 | 0.20                      | 5 | 0                     | 55.6 | 34-136 | 3.246 | 15.5  | 20 |
| Hexachloroethane                  | 3.32  | 0.20                      | 5 | 0                     | 66.4 | 40-120 | 3.558 | 6.92  | 20 |
| Indeno(1,2,3-cd)pyrene            | 4.105 | 0.20                      | 5 | 0                     | 82.1 | 41-128 | 3.926 | 4.44  | 20 |
| Isophorone                        | 3.352 | 0.20                      | 5 | 0                     | 67   | 40-121 | 3.543 | 5.54  | 20 |
| Naphthalene                       | 3.608 | 0.20                      | 5 | 0                     | 72.2 | 45-120 | 3.762 | 4.17  | 20 |
| Nitrobenzene                      | 3.29  | 0.20                      | 5 | 0                     | 65.8 | 44-120 | 3.528 | 6.98  | 20 |
| N-Nitrosodi-n-propylamine         | 3.308 | 0.20                      | 5 | 0                     | 66.2 | 40-120 | 3.468 | 4.72  | 20 |
| N-Nitrosodiphenylamine            | 4.127 | 0.20                      | 5 | 0                     | 82.5 | 40-125 | 4.02  | 2.63  | 20 |
| Pentachlorophenol                 | 3.515 | 0.20                      | 5 | 0                     | 70.3 | 19-121 | 4.218 | 18.2  | 20 |
| Phenanthrene                      | 4.006 | 0.20                      | 5 | 0                     | 80.1 | 45-121 | 3.87  | 3.46  | 20 |
| Phenol                            | 3.157 | 0.20                      | 5 | 0                     | 63.1 | 20-124 | 3.468 | 9.39  | 20 |
| Pyrene                            | 4.239 | 0.20                      | 5 | 0                     | 84.8 | 40-130 | 4.262 | 0.535 | 20 |
| <i>Surr: 2,4,6-Tribromophenol</i> | 4.428 | 0.20                      | 5 | 0                     | 88.6 | 34-129 | 4.533 | 2.36  | 0  |
| <i>Surr: 2-Fluorobiphenyl</i>     | 3.877 | 0.20                      | 5 | 0                     | 77.5 | 40-125 | 3.906 | 0.758 | 0  |
| <i>Surr: 2-Fluorophenol</i>       | 3.193 | 0.20                      | 5 | 0                     | 63.9 | 20-120 | 3.685 | 14.3  | 0  |
| <i>Surr: 4-Terphenyl-d14</i>      | 4.372 | 0.20                      | 5 | 0                     | 87.4 | 40-135 | 4.433 | 1.39  | 0  |
| <i>Surr: Nitrobenzene-d5</i>      | 3.297 | 0.20                      | 5 | 0                     | 65.9 | 41-120 | 3.576 | 8.11  | 0  |
| <i>Surr: Phenol-d6</i>            | 3.58  | 0.20                      | 5 | 0                     | 71.6 | 20-120 | 3.633 | 1.47  | 0  |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14021211-01F | 14021211-02F | 14021211-03F | 14021211-04F |
| 14021211-05F | 14021211-06F | 14021211-08F | 14021211-09F |
| 14021211-10F | 14021211-11F | 14021211-12F | 14021211-13F |
| 14021211-15F | 14021211-16F | 14021211-17F |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162170** Instrument ID **VOA6** Method: **SW8260**

**MBLK** Sample ID: **VBLKW-140302-R162170** Units: **µg/L** Analysis Date: **3/2/2014 12:35 PM**

Client ID: Run ID: **VOA6\_140302A** SeqNo: **3550391** Prep Date: DF: **1**

| Analyte                   | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---------------------------|--------|-----|---------|---------------|------|---------------|---------------|------|-----------|------|
| 1,1,1-Trichloroethane     | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,1,2,2-Tetrachloroethane | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,1,2-Trichloroethane     | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,1-Dichloroethane        | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,1-Dichloroethene        | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,2,4-Trimethylbenzene    | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,2-Dibromoethane         | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,2-Dichloroethane        | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,2-Dichloropropane       | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,3,5-Trimethylbenzene    | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 2-Butanone                | ND     | 10  |         |               |      |               |               |      |           |      |
| 2-Hexanone                | ND     | 10  |         |               |      |               |               |      |           |      |
| 4-Isopropyltoluene        | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 4-Methyl-2-pentanone      | ND     | 10  |         |               |      |               |               |      |           |      |
| Acetone                   | ND     | 10  |         |               |      |               |               |      |           |      |
| Benzene                   | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Bromodichloromethane      | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Bromoform                 | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Bromomethane              | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Carbon disulfide          | ND     | 10  |         |               |      |               |               |      |           |      |
| Carbon tetrachloride      | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Chlorobenzene             | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Chloroethane              | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Chloroform                | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Chloromethane             | ND     | 5.0 |         |               |      |               |               |      |           |      |
| cis-1,2-Dichloroethene    | ND     | 5.0 |         |               |      |               |               |      |           |      |
| cis-1,3-Dichloropropene   | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Dibromochloromethane      | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Ethylbenzene              | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Isopropylbenzene          | ND     | 5.0 |         |               |      |               |               |      |           |      |
| m,p-Xylene                | ND     | 10  |         |               |      |               |               |      |           |      |
| Methyl tert-butyl ether   | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Methylene chloride        | ND     | 10  |         |               |      |               |               |      |           |      |
| Naphthalene               | ND     | 5.0 |         |               |      |               |               |      |           |      |
| n-Butylbenzene            | ND     | 5.0 |         |               |      |               |               |      |           |      |
| n-Propylbenzene           | ND     | 5.0 |         |               |      |               |               |      |           |      |
| o-Xylene                  | ND     | 5.0 |         |               |      |               |               |      |           |      |
| sec-Butylbenzene          | ND     | 5.0 |         |               |      |               |               |      |           |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company  
Work Order: 14021211  
Project: Navajo Lea Refinery Semi-Annual

QC BATCH REPORT

| Batch ID: <b>R162170</b>           |       | Instrument ID <b>VOA6</b> |    | Method: <b>SW8260</b> |      |        |   |  |
|------------------------------------|-------|---------------------------|----|-----------------------|------|--------|---|--|
| Styrene                            | ND    | 5.0                       |    |                       |      |        |   |  |
| Tetrachloroethene                  | ND    | 5.0                       |    |                       |      |        |   |  |
| Toluene                            | ND    | 5.0                       |    |                       |      |        |   |  |
| trans-1,2-Dichloroethene           | ND    | 5.0                       |    |                       |      |        |   |  |
| trans-1,3-Dichloropropene          | ND    | 5.0                       |    |                       |      |        |   |  |
| Trichloroethene                    | ND    | 5.0                       |    |                       |      |        |   |  |
| Vinyl chloride                     | ND    | 2.0                       |    |                       |      |        |   |  |
| Xylenes, Total                     | ND    | 15                        |    |                       |      |        |   |  |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 53    | 5.0                       | 50 | 0                     | 106  | 70-125 | 0 |  |
| <i>Surr: 4-Bromofluorobenzene</i>  | 48.19 | 5.0                       | 50 | 0                     | 96.4 | 72-125 | 0 |  |
| <i>Surr: Dibromofluoromethane</i>  | 51.34 | 5.0                       | 50 | 0                     | 103  | 71-125 | 0 |  |
| <i>Surr: Toluene-d8</i>            | 47.19 | 5.0                       | 50 | 0                     | 94.4 | 75-125 | 0 |  |

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162170** Instrument ID **VOA6** Method: **SW8260**

| LCS                       |        |                      |         | Sample ID: VLCSW-140302-R162170 |                | Units: µg/L   |               | Analysis Date: 3/2/2014 11:22 AM |           |      |
|---------------------------|--------|----------------------|---------|---------------------------------|----------------|---------------|---------------|----------------------------------|-----------|------|
| Client ID:                |        | Run ID: VOA6_140302A |         |                                 | SeqNo: 3550390 |               | Prep Date:    |                                  | DF: 1     |      |
| Analyte                   | Result | PQL                  | SPK Val | SPK Ref Value                   | %REC           | Control Limit | RPD Ref Value | %RPD                             | RPD Limit | Qual |
| 1,1,1-Trichloroethane     | 52.88  | 5.0                  | 50      | 0                               | 106            | 80-120        |               |                                  |           |      |
| 1,1,2,2-Tetrachloroethane | 44.02  | 5.0                  | 50      | 0                               | 88             | 72-120        |               |                                  |           |      |
| 1,1,2-Trichloroethane     | 46.99  | 5.0                  | 50      | 0                               | 94             | 80-120        |               |                                  |           |      |
| 1,1-Dichloroethane        | 49.53  | 5.0                  | 50      | 0                               | 99.1           | 76-120        |               |                                  |           |      |
| 1,1-Dichloroethene        | 47.3   | 5.0                  | 50      | 0                               | 94.6           | 73-124        |               |                                  |           |      |
| 1,2,4-Trimethylbenzene    | 44.69  | 5.0                  | 50      | 0                               | 89.4           | 68-123        |               |                                  |           |      |
| 1,2-Dibromoethane         | 49.29  | 5.0                  | 50      | 0                               | 98.6           | 80-120        |               |                                  |           |      |
| 1,2-Dichloroethane        | 48.01  | 5.0                  | 50      | 0                               | 96             | 78-120        |               |                                  |           |      |
| 1,2-Dichloropropane       | 50.56  | 5.0                  | 50      | 0                               | 101            | 80-120        |               |                                  |           |      |
| 1,3,5-Trimethylbenzene    | 43.51  | 5.0                  | 50      | 0                               | 87             | 80-120        |               |                                  |           |      |
| 2-Butanone                | 101.5  | 10                   | 100     | 0                               | 102            | 58-132        |               |                                  |           |      |
| 2-Hexanone                | 89.3   | 10                   | 100     | 0                               | 89.3           | 61-130        |               |                                  |           |      |
| 4-Isopropyltoluene        | 42.79  | 5.0                  | 50      | 0                               | 85.6           | 79-120        |               |                                  |           |      |
| 4-Methyl-2-pentanone      | 88.49  | 10                   | 100     | 0                               | 88.5           | 65-127        |               |                                  |           |      |
| Acetone                   | 89.08  | 10                   | 100     | 0                               | 89.1           | 59-137        |               |                                  |           |      |
| Benzene                   | 50.27  | 5.0                  | 50      | 0                               | 101            | 73-121        |               |                                  |           |      |
| Bromodichloromethane      | 50.53  | 5.0                  | 50      | 0                               | 101            | 75-125        |               |                                  |           |      |
| Bromoform                 | 44.34  | 5.0                  | 50      | 0                               | 88.7           | 70-130        |               |                                  |           |      |
| Bromomethane              | 50.38  | 5.0                  | 50      | 0                               | 101            | 60-145        |               |                                  |           |      |
| Carbon disulfide          | 95.94  | 10                   | 100     | 0                               | 95.9           | 68-141        |               |                                  |           |      |
| Carbon tetrachloride      | 49.83  | 5.0                  | 50      | 0                               | 99.7           | 75-125        |               |                                  |           |      |
| Chlorobenzene             | 47.16  | 5.0                  | 50      | 0                               | 94.3           | 80-120        |               |                                  |           |      |
| Chloroethane              | 51.23  | 5.0                  | 50      | 0                               | 102            | 70-130        |               |                                  |           |      |
| Chloroform                | 51.48  | 5.0                  | 50      | 0                               | 103            | 70-130        |               |                                  |           |      |
| Chloromethane             | 47.1   | 5.0                  | 50      | 0                               | 94.2           | 67-123        |               |                                  |           |      |
| cis-1,2-Dichloroethene    | 53.43  | 5.0                  | 50      | 0                               | 107            | 78-120        |               |                                  |           |      |
| cis-1,3-Dichloropropene   | 52.97  | 5.0                  | 50      | 0                               | 106            | 80-120        |               |                                  |           |      |
| Dibromochloromethane      | 47.97  | 5.0                  | 50      | 0                               | 95.9           | 80-120        |               |                                  |           |      |
| Ethylbenzene              | 46.9   | 5.0                  | 50      | 0                               | 93.8           | 80-120        |               |                                  |           |      |
| Isopropylbenzene          | 47.45  | 5.0                  | 50      | 0                               | 94.9           | 75-130        |               |                                  |           |      |
| m,p-Xylene                | 94.28  | 10                   | 100     | 0                               | 94.3           | 78-121        |               |                                  |           |      |
| Methyl tert-butyl ether   | 48.98  | 5.0                  | 50      | 0                               | 98             | 73-121        |               |                                  |           |      |
| Methylene chloride        | 51.94  | 10                   | 50      | 0                               | 104            | 65-133        |               |                                  |           |      |
| Naphthalene               | 42.77  | 5.0                  | 50      | 0                               | 85.5           | 65-135        |               |                                  |           |      |
| n-Butylbenzene            | 42.89  | 5.0                  | 50      | 0                               | 85.8           | 77-120        |               |                                  |           |      |
| n-Propylbenzene           | 42.61  | 5.0                  | 50      | 0                               | 85.2           | 78-120        |               |                                  |           |      |
| o-Xylene                  | 47.66  | 5.0                  | 50      | 0                               | 95.3           | 80-120        |               |                                  |           |      |
| sec-Butylbenzene          | 41.58  | 5.0                  | 50      | 0                               | 83.2           | 78-120        |               |                                  |           |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

| Batch ID: <b>R162170</b>           |       | Instrument ID <b>VOA6</b> |     | Method: <b>SW8260</b> |      |        |   |
|------------------------------------|-------|---------------------------|-----|-----------------------|------|--------|---|
| Styrene                            | 49.66 | 5.0                       | 50  | 0                     | 99.3 | 80-120 |   |
| Tetrachloroethene                  | 45.49 | 5.0                       | 50  | 0                     | 91   | 79-120 |   |
| Toluene                            | 46.35 | 5.0                       | 50  | 0                     | 92.7 | 80-120 |   |
| trans-1,2-Dichloroethene           | 51.54 | 5.0                       | 50  | 0                     | 103  | 78-120 |   |
| trans-1,3-Dichloropropene          | 54.93 | 5.0                       | 50  | 0                     | 110  | 80-120 |   |
| Trichloroethene                    | 49.3  | 5.0                       | 50  | 0                     | 98.6 | 80-120 |   |
| Vinyl chloride                     | 55.29 | 2.0                       | 50  | 0                     | 111  | 70-127 |   |
| Xylenes, Total                     | 141.9 | 15                        | 150 | 0                     | 94.6 | 80-120 |   |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 50.62 | 5.0                       | 50  | 0                     | 101  | 70-125 | 0 |
| <i>Surr: 4-Bromofluorobenzene</i>  | 51.73 | 5.0                       | 50  | 0                     | 103  | 72-125 | 0 |
| <i>Surr: Dibromofluoromethane</i>  | 52.44 | 5.0                       | 50  | 0                     | 105  | 71-125 | 0 |
| <i>Surr: Toluene-d8</i>            | 47.25 | 5.0                       | 50  | 0                     | 94.5 | 75-125 | 0 |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162170** Instrument ID **VOA6** Method: **SW8260**

| MS                        |        | Sample ID: <b>14021211-13AMS</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>3/2/2014 02:12 PM</b> |           |              |
|---------------------------|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|-----------------------------------------|-----------|--------------|
| Client ID: <b>MW-26</b>   |        | Run ID: <b>VOA6_140302A</b>      |         |               |      | SeqNo: <b>3550395</b> |               | Prep Date:                              |           | DF: <b>1</b> |
| Analyte                   | Result | PQL                              | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                    | RPD Limit | Qual         |
| 1,1,1-Trichloroethane     | 48.49  | 5.0                              | 50      | 0             | 97   | 80-120                |               |                                         |           |              |
| 1,1,2,2-Tetrachloroethane | 43.5   | 5.0                              | 50      | 0             | 87   | 72-120                |               |                                         |           |              |
| 1,1,2-Trichloroethane     | 48.27  | 5.0                              | 50      | 0.9995        | 94.5 | 80-120                |               |                                         |           |              |
| 1,1-Dichloroethane        | 49.31  | 5.0                              | 50      | 0             | 98.6 | 76-120                |               |                                         |           |              |
| 1,1-Dichloroethene        | 44.28  | 5.0                              | 50      | 0             | 88.6 | 73-124                |               |                                         |           |              |
| 1,2,4-Trimethylbenzene    | 41.33  | 5.0                              | 50      | 0             | 82.7 | 68-123                |               |                                         |           |              |
| 1,2-Dibromoethane         | 49.49  | 5.0                              | 50      | 0             | 99   | 80-120                |               |                                         |           |              |
| 1,2-Dichloroethane        | 49.99  | 5.0                              | 50      | 0             | 100  | 78-120                |               |                                         |           |              |
| 1,2-Dichloropropane       | 51.59  | 5.0                              | 50      | 0             | 103  | 80-120                |               |                                         |           |              |
| 1,3,5-Trimethylbenzene    | 40.4   | 5.0                              | 50      | 0             | 80.8 | 80-120                |               |                                         |           |              |
| 2-Butanone                | 107.2  | 10                               | 100     | 0             | 107  | 58-132                |               |                                         |           |              |
| 2-Hexanone                | 98.13  | 10                               | 100     | 0             | 98.1 | 61-130                |               |                                         |           |              |
| 4-Isopropyltoluene        | 39.65  | 5.0                              | 50      | 0             | 79.3 | 79-120                |               |                                         |           |              |
| 4-Methyl-2-pentanone      | 96.33  | 10                               | 100     | 0             | 96.3 | 65-127                |               |                                         |           |              |
| Acetone                   | 90.17  | 10                               | 100     | 0             | 90.2 | 59-137                |               |                                         |           |              |
| Benzene                   | 48.58  | 5.0                              | 50      | 0             | 97.2 | 73-121                |               |                                         |           |              |
| Bromodichloromethane      | 51.22  | 5.0                              | 50      | 0             | 102  | 75-125                |               |                                         |           |              |
| Bromoform                 | 43.35  | 5.0                              | 50      | 0             | 86.7 | 70-130                |               |                                         |           |              |
| Bromomethane              | 49.58  | 5.0                              | 50      | 0             | 99.2 | 60-145                |               |                                         |           |              |
| Carbon disulfide          | 87.17  | 10                               | 100     | 0             | 87.2 | 68-141                |               |                                         |           |              |
| Carbon tetrachloride      | 43.7   | 5.0                              | 50      | 0             | 87.4 | 75-125                |               |                                         |           |              |
| Chlorobenzene             | 45.45  | 5.0                              | 50      | 0             | 90.9 | 80-120                |               |                                         |           |              |
| Chloroethane              | 49.23  | 5.0                              | 50      | 0             | 98.5 | 70-130                |               |                                         |           |              |
| Chloroform                | 52.55  | 5.0                              | 50      | 0             | 105  | 70-130                |               |                                         |           |              |
| Chloromethane             | 39.25  | 5.0                              | 50      | 0             | 78.5 | 67-123                |               |                                         |           |              |
| cis-1,2-Dichloroethene    | 54.16  | 5.0                              | 50      | 0             | 108  | 78-120                |               |                                         |           |              |
| cis-1,3-Dichloropropene   | 52.36  | 5.0                              | 50      | 0             | 105  | 80-120                |               |                                         |           |              |
| Dibromochloromethane      | 47.51  | 5.0                              | 50      | 0             | 95   | 80-120                |               |                                         |           |              |
| Ethylbenzene              | 44.31  | 5.0                              | 50      | 0             | 88.6 | 80-120                |               |                                         |           |              |
| Isopropylbenzene          | 43.86  | 5.0                              | 50      | 0             | 87.7 | 75-130                |               |                                         |           |              |
| m,p-Xylene                | 89.96  | 10                               | 100     | 0             | 90   | 78-121                |               |                                         |           |              |
| Methyl tert-butyl ether   | 54.4   | 5.0                              | 50      | 0             | 109  | 73-121                |               |                                         |           |              |
| Methylene chloride        | 51.68  | 10                               | 50      | 0             | 103  | 65-133                |               |                                         |           |              |
| Naphthalene               | 39.7   | 5.0                              | 50      | 0             | 79.4 | 65-135                |               |                                         |           |              |
| n-Butylbenzene            | 40.71  | 5.0                              | 50      | 0             | 81.4 | 77-120                |               |                                         |           |              |
| n-Propylbenzene           | 39.01  | 5.0                              | 50      | 0             | 78   | 78-120                |               |                                         |           |              |
| o-Xylene                  | 45.5   | 5.0                              | 50      | 0             | 91   | 80-120                |               |                                         |           |              |
| sec-Butylbenzene          | 38.5   | 5.0                              | 50      | 0             | 77   | 78-120                |               |                                         |           | S            |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

| Batch ID: <b>R162170</b>           |       | Instrument ID <b>VOA6</b> |     | Method: <b>SW8260</b> |      |        |   |
|------------------------------------|-------|---------------------------|-----|-----------------------|------|--------|---|
| Styrene                            | 48.22 | 5.0                       | 50  | 0                     | 96.4 | 80-120 |   |
| Tetrachloroethene                  | 41.34 | 5.0                       | 50  | 0                     | 82.7 | 79-120 |   |
| Toluene                            | 43.55 | 5.0                       | 50  | 0                     | 87.1 | 80-120 |   |
| trans-1,2-Dichloroethene           | 49.45 | 5.0                       | 50  | 0                     | 98.9 | 78-120 |   |
| trans-1,3-Dichloropropene          | 56.21 | 5.0                       | 50  | 0                     | 112  | 80-120 |   |
| Trichloroethene                    | 47.1  | 5.0                       | 50  | 0                     | 94.2 | 80-120 |   |
| Vinyl chloride                     | 43.89 | 2.0                       | 50  | 0                     | 87.8 | 70-127 |   |
| Xylenes, Total                     | 135.5 | 15                        | 150 | 0                     | 90.3 | 80-120 |   |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 51.48 | 5.0                       | 50  | 0                     | 103  | 70-125 | 0 |
| <i>Surr: 4-Bromofluorobenzene</i>  | 51.54 | 5.0                       | 50  | 0                     | 103  | 72-125 | 0 |
| <i>Surr: Dibromofluoromethane</i>  | 51.73 | 5.0                       | 50  | 0                     | 103  | 71-125 | 0 |
| <i>Surr: Toluene-d8</i>            | 46.96 | 5.0                       | 50  | 0                     | 93.9 | 75-125 | 0 |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162170** Instrument ID **VOA6** Method: **SW8260**

| MSD                       |        | Sample ID: <b>14021211-13AMSD</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>3/2/2014 02:34 PM</b> |           |              |
|---------------------------|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|-----------------------------------------|-----------|--------------|
| Client ID: <b>MW-26</b>   |        | Run ID: <b>VOA6_140302A</b>       |         |               |      | SeqNo: <b>3550396</b> |               | Prep Date:                              |           | DF: <b>1</b> |
| Analyte                   | Result | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                    | RPD Limit | Qual         |
| 1,1,1-Trichloroethane     | 53.12  | 5.0                               | 50      | 0             | 106  | 80-120                | 48.49         | 9.12                                    | 20        |              |
| 1,1,2,2-Tetrachloroethane | 45.07  | 5.0                               | 50      | 0             | 90.1 | 72-120                | 43.5          | 3.53                                    | 20        |              |
| 1,1,2-Trichloroethane     | 49.98  | 5.0                               | 50      | 0.9995        | 98   | 80-120                | 48.27         | 3.47                                    | 20        |              |
| 1,1-Dichloroethane        | 49.5   | 5.0                               | 50      | 0             | 99   | 76-120                | 49.31         | 0.381                                   | 20        |              |
| 1,1-Dichloroethene        | 46.73  | 5.0                               | 50      | 0             | 93.5 | 73-124                | 44.28         | 5.4                                     | 20        |              |
| 1,2,4-Trimethylbenzene    | 44.51  | 5.0                               | 50      | 0             | 89   | 68-123                | 41.33         | 7.4                                     | 20        |              |
| 1,2-Dibromoethane         | 50.24  | 5.0                               | 50      | 0             | 100  | 80-120                | 49.49         | 1.5                                     | 20        |              |
| 1,2-Dichloroethane        | 48.79  | 5.0                               | 50      | 0             | 97.6 | 78-120                | 49.99         | 2.43                                    | 20        |              |
| 1,2-Dichloropropane       | 51.06  | 5.0                               | 50      | 0             | 102  | 80-120                | 51.59         | 1.02                                    | 20        |              |
| 1,3,5-Trimethylbenzene    | 43.86  | 5.0                               | 50      | 0             | 87.7 | 80-120                | 40.4          | 8.22                                    | 20        |              |
| 2-Butanone                | 105.8  | 10                                | 100     | 0             | 106  | 58-132                | 107.2         | 1.27                                    | 20        |              |
| 2-Hexanone                | 99.16  | 10                                | 100     | 0             | 99.2 | 61-130                | 98.13         | 1.04                                    | 20        |              |
| 4-Isopropyltoluene        | 42.93  | 5.0                               | 50      | 0             | 85.9 | 79-120                | 39.65         | 7.94                                    | 20        |              |
| 4-Methyl-2-pentanone      | 98.26  | 10                                | 100     | 0             | 98.3 | 65-127                | 96.33         | 1.98                                    | 20        |              |
| Acetone                   | 90.84  | 10                                | 100     | 0             | 90.8 | 59-137                | 90.17         | 0.745                                   | 20        |              |
| Benzene                   | 49.13  | 5.0                               | 50      | 0             | 98.3 | 73-121                | 48.58         | 1.11                                    | 20        |              |
| Bromodichloromethane      | 50.43  | 5.0                               | 50      | 0             | 101  | 75-125                | 51.22         | 1.56                                    | 20        |              |
| Bromoform                 | 44.59  | 5.0                               | 50      | 0             | 89.2 | 70-130                | 43.35         | 2.82                                    | 20        |              |
| Bromomethane              | 50.36  | 5.0                               | 50      | 0             | 101  | 60-145                | 49.58         | 1.56                                    | 20        |              |
| Carbon disulfide          | 93.02  | 10                                | 100     | 0             | 93   | 68-141                | 87.17         | 6.49                                    | 20        |              |
| Carbon tetrachloride      | 49.01  | 5.0                               | 50      | 0             | 98   | 75-125                | 43.7          | 11.5                                    | 20        |              |
| Chlorobenzene             | 47.64  | 5.0                               | 50      | 0             | 95.3 | 80-120                | 45.45         | 4.72                                    | 20        |              |
| Chloroethane              | 49.55  | 5.0                               | 50      | 0             | 99.1 | 76-121                | 49.23         | 0.648                                   | 20        |              |
| Chloroform                | 52.58  | 5.0                               | 50      | 0             | 105  | 70-130                | 52.55         | 0.0449                                  | 20        |              |
| Chloromethane             | 41.53  | 5.0                               | 50      | 0             | 83.1 | 67-123                | 39.25         | 5.65                                    | 20        |              |
| cis-1,2-Dichloroethene    | 54.42  | 5.0                               | 50      | 0             | 109  | 78-120                | 54.16         | 0.475                                   | 20        |              |
| cis-1,3-Dichloropropene   | 51.99  | 5.0                               | 50      | 0             | 104  | 80-120                | 52.36         | 0.71                                    | 20        |              |
| Dibromochloromethane      | 48.48  | 5.0                               | 50      | 0             | 97   | 80-120                | 47.51         | 2.01                                    | 20        |              |
| Ethylbenzene              | 47.24  | 5.0                               | 50      | 0             | 94.5 | 80-120                | 44.31         | 6.4                                     | 20        |              |
| Isopropylbenzene          | 47.89  | 5.0                               | 50      | 0             | 95.8 | 75-130                | 43.86         | 8.77                                    | 20        |              |
| m,p-Xylene                | 96.45  | 10                                | 100     | 0             | 96.5 | 78-121                | 89.96         | 6.96                                    | 20        |              |
| Methyl tert-butyl ether   | 52.01  | 5.0                               | 50      | 0             | 104  | 73-121                | 54.4          | 4.48                                    | 20        |              |
| Methylene chloride        | 52.25  | 10                                | 50      | 0             | 104  | 65-133                | 51.68         | 1.08                                    | 20        |              |
| Naphthalene               | 44.56  | 5.0                               | 50      | 0             | 89.1 | 65-135                | 39.7          | 11.5                                    | 20        |              |
| n-Butylbenzene            | 44.11  | 5.0                               | 50      | 0             | 88.2 | 77-120                | 40.71         | 8.01                                    | 20        |              |
| n-Propylbenzene           | 42.82  | 5.0                               | 50      | 0             | 85.6 | 78-120                | 39.01         | 9.3                                     | 20        |              |
| o-Xylene                  | 48.17  | 5.0                               | 50      | 0             | 96.3 | 80-120                | 45.5          | 5.71                                    | 20        |              |
| sec-Butylbenzene          | 41.93  | 5.0                               | 50      | 0             | 83.9 | 78-120                | 38.5          | 8.53                                    | 20        |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

| Batch ID: R162170           |       | Instrument ID VOA6 |     | Method: SW8260 |      |        |       |      |    |
|-----------------------------|-------|--------------------|-----|----------------|------|--------|-------|------|----|
| Styrene                     | 50.58 | 5.0                | 50  | 0              | 101  | 80-120 | 48.22 | 4.77 | 20 |
| Tetrachloroethene           | 46.23 | 5.0                | 50  | 0              | 92.5 | 79-120 | 41.34 | 11.2 | 20 |
| Toluene                     | 46.16 | 5.0                | 50  | 0              | 92.3 | 80-120 | 43.55 | 5.82 | 20 |
| trans-1,2-Dichloroethene    | 52.1  | 5.0                | 50  | 0              | 104  | 78-120 | 49.45 | 5.23 | 20 |
| trans-1,3-Dichloropropene   | 55.35 | 5.0                | 50  | 0              | 111  | 80-120 | 56.21 | 1.54 | 20 |
| Trichloroethene             | 49.28 | 5.0                | 50  | 0              | 98.6 | 80-120 | 47.1  | 4.53 | 20 |
| Vinyl chloride              | 46.47 | 2.0                | 50  | 0              | 92.9 | 70-127 | 43.89 | 5.7  | 20 |
| Xylenes, Total              | 144.6 | 15                 | 150 | 0              | 96.4 | 78-121 | 135.5 | 6.54 | 20 |
| Surr: 1,2-Dichloroethane-d4 | 50.89 | 5.0                | 50  | 0              | 102  | 70-125 | 51.48 | 1.15 | 20 |
| Surr: 4-Bromofluorobenzene  | 51.44 | 5.0                | 50  | 0              | 103  | 72-125 | 51.54 | 0.21 | 20 |
| Surr: Dibromofluoromethane  | 52.72 | 5.0                | 50  | 0              | 105  | 71-125 | 51.73 | 1.9  | 20 |
| Surr: Toluene-d8            | 47.02 | 5.0                | 50  | 0              | 94   | 75-125 | 46.96 | 0.13 | 20 |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14021211-01A | 14021211-02A | 14021211-03A | 14021211-04A |
| 14021211-05A | 14021211-06A | 14021211-08A | 14021211-09A |
| 14021211-10A | 14021211-11A | 14021211-12A | 14021211-13A |
| 14021211-15A | 14021211-16A |              |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162237** Instrument ID **VOA6** Method: **SW8260**

**MBLK** Sample ID: **VBLKW-140303-R162237** Units: **µg/L** Analysis Date: **3/3/2014 01:00 PM**  
 Client ID: Run ID: **VOA6\_140303A** SeqNo: **3550801** Prep Date: DF: **1**

| Analyte                   | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---------------------------|--------|-----|---------|---------------|------|---------------|---------------|------|-----------|------|
| 1,1,1-Trichloroethane     | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,1,2,2-Tetrachloroethane | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,1,2-Trichloroethane     | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,1-Dichloroethane        | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,1-Dichloroethene        | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,2,4-Trimethylbenzene    | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,2-Dibromoethane         | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,2-Dichloroethane        | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,2-Dichloropropane       | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,3,5-Trimethylbenzene    | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 2-Butanone                | ND     | 10  |         |               |      |               |               |      |           |      |
| 2-Hexanone                | ND     | 10  |         |               |      |               |               |      |           |      |
| 4-Isopropyltoluene        | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 4-Methyl-2-pentanone      | ND     | 10  |         |               |      |               |               |      |           |      |
| Acetone                   | ND     | 10  |         |               |      |               |               |      |           |      |
| Benzene                   | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Bromodichloromethane      | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Bromoform                 | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Bromomethane              | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Carbon disulfide          | ND     | 10  |         |               |      |               |               |      |           |      |
| Carbon tetrachloride      | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Chlorobenzene             | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Chloroethane              | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Chloroform                | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Chloromethane             | ND     | 5.0 |         |               |      |               |               |      |           |      |
| cis-1,2-Dichloroethene    | ND     | 5.0 |         |               |      |               |               |      |           |      |
| cis-1,3-Dichloropropene   | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Dibromochloromethane      | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Ethylbenzene              | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Isopropylbenzene          | ND     | 5.0 |         |               |      |               |               |      |           |      |
| m,p-Xylene                | ND     | 10  |         |               |      |               |               |      |           |      |
| Methyl tert-butyl ether   | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Methylene chloride        | ND     | 10  |         |               |      |               |               |      |           |      |
| Naphthalene               | ND     | 5.0 |         |               |      |               |               |      |           |      |
| n-Butylbenzene            | ND     | 5.0 |         |               |      |               |               |      |           |      |
| n-Propylbenzene           | ND     | 5.0 |         |               |      |               |               |      |           |      |
| o-Xylene                  | ND     | 5.0 |         |               |      |               |               |      |           |      |
| sec-Butylbenzene          | ND     | 5.0 |         |               |      |               |               |      |           |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company  
Work Order: 14021211  
Project: Navajo Lea Refinery Semi-Annual

QC BATCH REPORT

|                             |       |                           |    |                       |      |        |   |  |
|-----------------------------|-------|---------------------------|----|-----------------------|------|--------|---|--|
| Batch ID: <b>R162237</b>    |       | Instrument ID <b>VOA6</b> |    | Method: <b>SW8260</b> |      |        |   |  |
| Styrene                     | ND    | 5.0                       |    |                       |      |        |   |  |
| Tetrachloroethene           | ND    | 5.0                       |    |                       |      |        |   |  |
| Toluene                     | ND    | 5.0                       |    |                       |      |        |   |  |
| trans-1,2-Dichloroethene    | ND    | 5.0                       |    |                       |      |        |   |  |
| trans-1,3-Dichloropropene   | ND    | 5.0                       |    |                       |      |        |   |  |
| Trichloroethene             | ND    | 5.0                       |    |                       |      |        |   |  |
| Vinyl chloride              | ND    | 2.0                       |    |                       |      |        |   |  |
| Xylenes, Total              | ND    | 15                        |    |                       |      |        |   |  |
| Surr: 1,2-Dichloroethane-d4 | 51.65 | 5.0                       | 50 | 0                     | 103  | 70-125 | 0 |  |
| Surr: 4-Bromofluorobenzene  | 48.48 | 5.0                       | 50 | 0                     | 97   | 72-125 | 0 |  |
| Surr: Dibromofluoromethane  | 51.17 | 5.0                       | 50 | 0                     | 102  | 71-125 | 0 |  |
| Surr: Toluene-d8            | 47.28 | 5.0                       | 50 | 0                     | 94.6 | 75-125 | 0 |  |

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162237** Instrument ID **VOA6** Method: **SW8260**

| LCS                       |        |                      |         | Sample ID: VLCSW-140303-R162237 |                | Units: µg/L   |               | Analysis Date: 3/3/2014 11:43 AM |           |      |
|---------------------------|--------|----------------------|---------|---------------------------------|----------------|---------------|---------------|----------------------------------|-----------|------|
| Client ID:                |        | Run ID: VOA6_140303A |         |                                 | SeqNo: 3550800 |               | Prep Date:    |                                  | DF: 1     |      |
| Analyte                   | Result | PQL                  | SPK Val | SPK Ref Value                   | %REC           | Control Limit | RPD Ref Value | %RPD                             | RPD Limit | Qual |
| 1,1,1-Trichloroethane     | 54.06  | 5.0                  | 50      | 0                               | 108            | 80-120        |               |                                  |           |      |
| 1,1,2,2-Tetrachloroethane | 45.67  | 5.0                  | 50      | 0                               | 91.3           | 72-120        |               |                                  |           |      |
| 1,1,2-Trichloroethane     | 48.13  | 5.0                  | 50      | 0                               | 96.3           | 80-120        |               |                                  |           |      |
| 1,1-Dichloroethane        | 49.87  | 5.0                  | 50      | 0                               | 99.7           | 76-120        |               |                                  |           |      |
| 1,1-Dichloroethene        | 48.34  | 5.0                  | 50      | 0                               | 96.7           | 73-124        |               |                                  |           |      |
| 1,2,4-Trimethylbenzene    | 45.86  | 5.0                  | 50      | 0                               | 91.7           | 68-123        |               |                                  |           |      |
| 1,2-Dibromoethane         | 50.53  | 5.0                  | 50      | 0                               | 101            | 80-120        |               |                                  |           |      |
| 1,2-Dichloroethane        | 49.88  | 5.0                  | 50      | 0                               | 99.8           | 78-120        |               |                                  |           |      |
| 1,2-Dichloropropane       | 52.4   | 5.0                  | 50      | 0                               | 105            | 80-120        |               |                                  |           |      |
| 1,3,5-Trimethylbenzene    | 45.39  | 5.0                  | 50      | 0                               | 90.8           | 80-120        |               |                                  |           |      |
| 2-Butanone                | 105.2  | 10                   | 100     | 0                               | 105            | 58-132        |               |                                  |           |      |
| 2-Hexanone                | 93.13  | 10                   | 100     | 0                               | 93.1           | 61-130        |               |                                  |           |      |
| 4-Isopropyltoluene        | 44.58  | 5.0                  | 50      | 0                               | 89.2           | 79-120        |               |                                  |           |      |
| 4-Methyl-2-pentanone      | 92.63  | 10                   | 100     | 0                               | 92.6           | 65-127        |               |                                  |           |      |
| Acetone                   | 94.74  | 10                   | 100     | 0                               | 94.7           | 59-137        |               |                                  |           |      |
| Benzene                   | 50.93  | 5.0                  | 50      | 0                               | 102            | 73-121        |               |                                  |           |      |
| Bromodichloromethane      | 50.92  | 5.0                  | 50      | 0                               | 102            | 75-125        |               |                                  |           |      |
| Bromoform                 | 46.78  | 5.0                  | 50      | 0                               | 93.6           | 70-130        |               |                                  |           |      |
| Bromomethane              | 51.85  | 5.0                  | 50      | 0                               | 104            | 60-145        |               |                                  |           |      |
| Carbon disulfide          | 96.55  | 10                   | 100     | 0                               | 96.5           | 68-141        |               |                                  |           |      |
| Carbon tetrachloride      | 51.19  | 5.0                  | 50      | 0                               | 102            | 75-125        |               |                                  |           |      |
| Chlorobenzene             | 48.92  | 5.0                  | 50      | 0                               | 97.8           | 80-120        |               |                                  |           |      |
| Chloroethane              | 47.05  | 5.0                  | 50      | 0                               | 94.1           | 70-130        |               |                                  |           |      |
| Chloroform                | 52.26  | 5.0                  | 50      | 0                               | 105            | 70-130        |               |                                  |           |      |
| Chloromethane             | 46.02  | 5.0                  | 50      | 0                               | 92             | 67-123        |               |                                  |           |      |
| cis-1,2-Dichloroethene    | 54.52  | 5.0                  | 50      | 0                               | 109            | 78-120        |               |                                  |           |      |
| cis-1,3-Dichloropropene   | 54.15  | 5.0                  | 50      | 0                               | 108            | 80-120        |               |                                  |           |      |
| Dibromochloromethane      | 49.56  | 5.0                  | 50      | 0                               | 99.1           | 80-120        |               |                                  |           |      |
| Ethylbenzene              | 48.74  | 5.0                  | 50      | 0                               | 97.5           | 80-120        |               |                                  |           |      |
| Isopropylbenzene          | 49.19  | 5.0                  | 50      | 0                               | 98.4           | 75-130        |               |                                  |           |      |
| m,p-Xylene                | 99.62  | 10                   | 100     | 0                               | 99.6           | 78-121        |               |                                  |           |      |
| Methyl tert-butyl ether   | 50.77  | 5.0                  | 50      | 0                               | 102            | 73-121        |               |                                  |           |      |
| Methylene chloride        | 52.6   | 10                   | 50      | 0                               | 105            | 65-133        |               |                                  |           |      |
| Naphthalene               | 44.87  | 5.0                  | 50      | 0                               | 89.7           | 65-135        |               |                                  |           |      |
| n-Butylbenzene            | 44.93  | 5.0                  | 50      | 0                               | 89.9           | 77-120        |               |                                  |           |      |
| n-Propylbenzene           | 44.39  | 5.0                  | 50      | 0                               | 88.8           | 78-120        |               |                                  |           |      |
| o-Xylene                  | 49.64  | 5.0                  | 50      | 0                               | 99.3           | 80-120        |               |                                  |           |      |
| sec-Butylbenzene          | 43.34  | 5.0                  | 50      | 0                               | 86.7           | 78-120        |               |                                  |           |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

| Batch ID: <b>R162237</b>           |       | Instrument ID <b>VOA6</b> |     | Method: <b>SW8260</b> |      |        |   |
|------------------------------------|-------|---------------------------|-----|-----------------------|------|--------|---|
| Styrene                            | 52.04 | 5.0                       | 50  | 0                     | 104  | 80-120 |   |
| Tetrachloroethene                  | 48.01 | 5.0                       | 50  | 0                     | 96   | 79-120 |   |
| Toluene                            | 47.73 | 5.0                       | 50  | 0                     | 95.5 | 80-120 |   |
| trans-1,2-Dichloroethene           | 53.15 | 5.0                       | 50  | 0                     | 106  | 78-120 |   |
| trans-1,3-Dichloropropene          | 56.74 | 5.0                       | 50  | 0                     | 113  | 80-120 |   |
| Trichloroethene                    | 52    | 5.0                       | 50  | 0                     | 104  | 80-120 |   |
| Vinyl chloride                     | 51.44 | 2.0                       | 50  | 0                     | 103  | 70-127 |   |
| Xylenes, Total                     | 149.3 | 15                        | 150 | 0                     | 99.5 | 80-120 |   |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 48.71 | 5.0                       | 50  | 0                     | 97.4 | 70-125 | 0 |
| <i>Surr: 4-Bromofluorobenzene</i>  | 51.28 | 5.0                       | 50  | 0                     | 103  | 72-125 | 0 |
| <i>Surr: Dibromofluoromethane</i>  | 51.5  | 5.0                       | 50  | 0                     | 103  | 71-125 | 0 |
| <i>Surr: Toluene-d8</i>            | 46.91 | 5.0                       | 50  | 0                     | 93.8 | 75-125 | 0 |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162237** Instrument ID **VOA6** Method: **SW8260**

| MS                        |        |                      |         | Sample ID: 14021211-17AMS |               | Units: µg/L   |               | Analysis Date: 3/3/2014 03:16 PM |           |      |
|---------------------------|--------|----------------------|---------|---------------------------|---------------|---------------|---------------|----------------------------------|-----------|------|
| Client ID: MW-3           |        | Run ID: VOA6_140303A |         |                           | SeqNo:3550804 |               | Prep Date:    |                                  | DF: 1     |      |
| Analyte                   | Result | PQL                  | SPK Val | SPK Ref Value             | %REC          | Control Limit | RPD Ref Value | %RPD                             | RPD Limit | Qual |
| 1,1,1-Trichloroethane     | 43.3   | 5.0                  | 50      | 0                         | 86.6          | 80-120        |               |                                  |           |      |
| 1,1,2,2-Tetrachloroethane | 40.45  | 5.0                  | 50      | 0                         | 80.9          | 72-120        |               |                                  |           |      |
| 1,1,2-Trichloroethane     | 44.49  | 5.0                  | 50      | 0                         | 89            | 80-120        |               |                                  |           |      |
| 1,1-Dichloroethane        | 43.71  | 5.0                  | 50      | 0                         | 87.4          | 76-120        |               |                                  |           |      |
| 1,1-Dichloroethene        | 38.71  | 5.0                  | 50      | 0                         | 77.4          | 73-124        |               |                                  |           |      |
| 1,2,4-Trimethylbenzene    | 37.63  | 5.0                  | 50      | 0                         | 75.3          | 68-123        |               |                                  |           |      |
| 1,2-Dibromoethane         | 47.04  | 5.0                  | 50      | 0                         | 94.1          | 80-120        |               |                                  |           |      |
| 1,2-Dichloroethane        | 45.66  | 5.0                  | 50      | 0                         | 91.3          | 78-120        |               |                                  |           |      |
| 1,2-Dichloropropane       | 47.38  | 5.0                  | 50      | 0                         | 94.8          | 80-120        |               |                                  |           |      |
| 1,3,5-Trimethylbenzene    | 36.19  | 5.0                  | 50      | 0                         | 72.4          | 80-120        |               |                                  |           | S    |
| 2-Butanone                | 96.7   | 10                   | 100     | 0                         | 96.7          | 58-132        |               |                                  |           |      |
| 2-Hexanone                | 91.16  | 10                   | 100     | 0                         | 91.2          | 61-130        |               |                                  |           |      |
| 4-Isopropyltoluene        | 34.55  | 5.0                  | 50      | 0                         | 69.1          | 79-120        |               |                                  |           | S    |
| 4-Methyl-2-pentanone      | 90.38  | 10                   | 100     | 0                         | 90.4          | 65-127        |               |                                  |           |      |
| Acetone                   | 90.89  | 10                   | 100     | 0                         | 90.9          | 59-137        |               |                                  |           |      |
| Benzene                   | 44.45  | 5.0                  | 50      | 0                         | 88.9          | 73-121        |               |                                  |           |      |
| Bromodichloromethane      | 46.73  | 5.0                  | 50      | 0                         | 93.5          | 75-125        |               |                                  |           |      |
| Bromoform                 | 39.84  | 5.0                  | 50      | 0                         | 79.7          | 70-130        |               |                                  |           |      |
| Bromomethane              | 30.46  | 5.0                  | 50      | 0                         | 60.9          | 60-145        |               |                                  |           |      |
| Carbon disulfide          | 82.7   | 10                   | 100     | 0                         | 82.7          | 68-141        |               |                                  |           |      |
| Carbon tetrachloride      | 36.27  | 5.0                  | 50      | 0                         | 72.5          | 75-125        |               |                                  |           | S    |
| Chlorobenzene             | 43.25  | 5.0                  | 50      | 0                         | 86.5          | 80-120        |               |                                  |           |      |
| Chloroethane              | 86.23  | 5.0                  | 50      | 0                         | 172           | 70-130        |               |                                  |           | S    |
| Chloroform                | 45.2   | 5.0                  | 50      | 0                         | 90.4          | 70-130        |               |                                  |           |      |
| Chloromethane             | 33.56  | 5.0                  | 50      | 0                         | 67.1          | 67-123        |               |                                  |           |      |
| cis-1,2-Dichloroethene    | 48.34  | 5.0                  | 50      | 0                         | 96.7          | 78-120        |               |                                  |           |      |
| cis-1,3-Dichloropropene   | 47.3   | 5.0                  | 50      | 0                         | 94.6          | 80-120        |               |                                  |           |      |
| Dibromochloromethane      | 44.3   | 5.0                  | 50      | 0                         | 88.6          | 80-120        |               |                                  |           |      |
| Ethylbenzene              | 41.01  | 5.0                  | 50      | 0                         | 82            | 80-120        |               |                                  |           |      |
| Isopropylbenzene          | 39.66  | 5.0                  | 50      | 0                         | 79.3          | 75-130        |               |                                  |           |      |
| m,p-Xylene                | 83.45  | 10                   | 100     | 0                         | 83.5          | 78-121        |               |                                  |           |      |
| Methyl tert-butyl ether   | 50.08  | 5.0                  | 50      | 0                         | 100           | 73-121        |               |                                  |           |      |
| Methylene chloride        | 48.23  | 10                   | 50      | 0                         | 96.5          | 65-133        |               |                                  |           |      |
| Naphthalene               | 39.55  | 5.0                  | 50      | 0                         | 79.1          | 65-135        |               |                                  |           |      |
| n-Butylbenzene            | 34.74  | 5.0                  | 50      | 0                         | 69.5          | 77-120        |               |                                  |           | S    |
| n-Propylbenzene           | 35.42  | 5.0                  | 50      | 0                         | 70.8          | 78-120        |               |                                  |           | S    |
| o-Xylene                  | 42.41  | 5.0                  | 50      | 0                         | 84.8          | 80-120        |               |                                  |           |      |
| sec-Butylbenzene          | 33.09  | 5.0                  | 50      | 0                         | 66.2          | 78-120        |               |                                  |           | S    |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

| Batch ID: <b>R162237</b>           |       | Instrument ID <b>VOA6</b> |     | Method: <b>SW8260</b> |      |        |   |
|------------------------------------|-------|---------------------------|-----|-----------------------|------|--------|---|
| Styrene                            | 44.46 | 5.0                       | 50  | 0                     | 88.9 | 80-120 |   |
| Tetrachloroethene                  | 39.81 | 5.0                       | 50  | 0                     | 79.6 | 79-120 |   |
| Toluene                            | 41.22 | 5.0                       | 50  | 0                     | 82.4 | 80-120 |   |
| trans-1,2-Dichloroethene           | 45.55 | 5.0                       | 50  | 0                     | 91.1 | 78-120 |   |
| trans-1,3-Dichloropropene          | 49.86 | 5.0                       | 50  | 0                     | 99.7 | 80-120 |   |
| Trichloroethene                    | 43.58 | 5.0                       | 50  | 0                     | 87.2 | 80-120 |   |
| Vinyl chloride                     | 38.71 | 2.0                       | 50  | 0                     | 77.4 | 70-127 |   |
| Xylenes, Total                     | 125.9 | 15                        | 150 | 0                     | 83.9 | 80-120 |   |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 48.62 | 5.0                       | 50  | 0                     | 97.2 | 70-125 | 0 |
| <i>Surr: 4-Bromofluorobenzene</i>  | 51.52 | 5.0                       | 50  | 0                     | 103  | 72-125 | 0 |
| <i>Surr: Dibromofluoromethane</i>  | 48.91 | 5.0                       | 50  | 0                     | 97.8 | 71-125 | 0 |
| <i>Surr: Toluene-d8</i>            | 47.29 | 5.0                       | 50  | 0                     | 94.6 | 75-125 | 0 |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162237** Instrument ID **VOA6** Method: **SW8260**

| MSD                       |        | Sample ID: <b>14021211-17AMSD</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>3/3/2014 03:39 PM</b> |           |              |
|---------------------------|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|-----------------------------------------|-----------|--------------|
| Client ID: <b>MW-3</b>    |        | Run ID: <b>VOA6_140303A</b>       |         |               |      | SeqNo: <b>3550805</b> |               | Prep Date:                              |           | DF: <b>1</b> |
| Analyte                   | Result | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                    | RPD Limit | Qual         |
| 1,1,1-Trichloroethane     | 47.3   | 5.0                               | 50      | 0             | 94.6 | 80-120                | 43.3          | 8.81                                    | 20        |              |
| 1,1,2,2-Tetrachloroethane | 42.38  | 5.0                               | 50      | 0             | 84.8 | 72-120                | 40.45         | 4.67                                    | 20        |              |
| 1,1,2-Trichloroethane     | 45.61  | 5.0                               | 50      | 0             | 91.2 | 80-120                | 44.49         | 2.48                                    | 20        |              |
| 1,1-Dichloroethane        | 45.6   | 5.0                               | 50      | 0             | 91.2 | 76-120                | 43.71         | 4.24                                    | 20        |              |
| 1,1-Dichloroethene        | 42.22  | 5.0                               | 50      | 0             | 84.4 | 73-124                | 38.71         | 8.67                                    | 20        |              |
| 1,2,4-Trimethylbenzene    | 39.7   | 5.0                               | 50      | 0             | 79.4 | 68-123                | 37.63         | 5.35                                    | 20        |              |
| 1,2-Dibromoethane         | 47.65  | 5.0                               | 50      | 0             | 95.3 | 80-120                | 47.04         | 1.29                                    | 20        |              |
| 1,2-Dichloroethane        | 47.74  | 5.0                               | 50      | 0             | 95.5 | 78-120                | 45.66         | 4.45                                    | 20        |              |
| 1,2-Dichloropropane       | 48.53  | 5.0                               | 50      | 0             | 97.1 | 80-120                | 47.38         | 2.39                                    | 20        |              |
| 1,3,5-Trimethylbenzene    | 39.15  | 5.0                               | 50      | 0             | 78.3 | 80-120                | 36.19         | 7.84                                    | 20        | S            |
| 2-Butanone                | 102.8  | 10                                | 100     | 0             | 103  | 58-132                | 96.7          | 6.15                                    | 20        |              |
| 2-Hexanone                | 95.09  | 10                                | 100     | 0             | 95.1 | 61-130                | 91.16         | 4.22                                    | 20        |              |
| 4-Isopropyltoluene        | 39.27  | 5.0                               | 50      | 0             | 78.5 | 79-120                | 34.55         | 12.8                                    | 20        | S            |
| 4-Methyl-2-pentanone      | 93.27  | 10                                | 100     | 0             | 93.3 | 65-127                | 90.38         | 3.14                                    | 20        |              |
| Acetone                   | 87.42  | 10                                | 100     | 0             | 87.4 | 59-137                | 90.89         | 3.89                                    | 20        |              |
| Benzene                   | 46.02  | 5.0                               | 50      | 0             | 92   | 73-121                | 44.45         | 3.47                                    | 20        |              |
| Bromodichloromethane      | 48.11  | 5.0                               | 50      | 0             | 96.2 | 75-125                | 46.73         | 2.91                                    | 20        |              |
| Bromoform                 | 42.55  | 5.0                               | 50      | 0             | 85.1 | 70-130                | 39.84         | 6.56                                    | 20        |              |
| Bromomethane              | 33.42  | 5.0                               | 50      | 0             | 66.8 | 60-145                | 30.46         | 9.27                                    | 20        |              |
| Carbon disulfide          | 84.85  | 10                                | 100     | 0             | 84.9 | 68-141                | 82.7          | 2.57                                    | 20        |              |
| Carbon tetrachloride      | 43.9   | 5.0                               | 50      | 0             | 87.8 | 75-125                | 36.27         | 19                                      | 20        |              |
| Chlorobenzene             | 44.23  | 5.0                               | 50      | 0             | 88.5 | 80-120                | 43.25         | 2.24                                    | 20        |              |
| Chloroethane              | 65.62  | 5.0                               | 50      | 0             | 131  | 76-121                | 86.23         | 27.1                                    | 20        | SR           |
| Chloroform                | 46.74  | 5.0                               | 50      | 0             | 93.5 | 70-130                | 45.2          | 3.36                                    | 20        |              |
| Chloromethane             | 33.32  | 5.0                               | 50      | 0             | 66.6 | 67-123                | 33.56         | 0.726                                   | 20        | S            |
| cis-1,2-Dichloroethene    | 49.74  | 5.0                               | 50      | 0             | 99.5 | 78-120                | 48.34         | 2.86                                    | 20        |              |
| cis-1,3-Dichloropropene   | 49.36  | 5.0                               | 50      | 0             | 98.7 | 80-120                | 47.3          | 4.27                                    | 20        |              |
| Dibromochloromethane      | 46.16  | 5.0                               | 50      | 0             | 92.3 | 80-120                | 44.3          | 4.12                                    | 20        |              |
| Ethylbenzene              | 43.41  | 5.0                               | 50      | 0             | 86.8 | 80-120                | 41.01         | 5.69                                    | 20        |              |
| Isopropylbenzene          | 43.21  | 5.0                               | 50      | 0             | 86.4 | 75-130                | 39.66         | 8.58                                    | 20        |              |
| m,p-Xylene                | 88.09  | 10                                | 100     | 0             | 88.1 | 78-121                | 83.45         | 5.41                                    | 20        |              |
| Methyl tert-butyl ether   | 50.39  | 5.0                               | 50      | 0             | 101  | 73-121                | 50.08         | 0.605                                   | 20        |              |
| Methylene chloride        | 48.96  | 10                                | 50      | 0             | 97.9 | 65-133                | 48.23         | 1.51                                    | 20        |              |
| Naphthalene               | 43.87  | 5.0                               | 50      | 0             | 87.7 | 65-135                | 39.55         | 10.4                                    | 20        |              |
| n-Butylbenzene            | 39.34  | 5.0                               | 50      | 0             | 78.7 | 77-120                | 34.74         | 12.4                                    | 20        |              |
| n-Propylbenzene           | 38.08  | 5.0                               | 50      | 0             | 76.2 | 78-120                | 35.42         | 7.22                                    | 20        | S            |
| o-Xylene                  | 44.73  | 5.0                               | 50      | 0             | 89.5 | 80-120                | 42.41         | 5.31                                    | 20        |              |
| sec-Butylbenzene          | 37.87  | 5.0                               | 50      | 0             | 75.7 | 78-120                | 33.09         | 13.5                                    | 20        | S            |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

| Batch ID: <b>R162237</b>           |       | Instrument ID <b>VOA6</b> |     |   | Method: <b>SW8260</b> |        |       |        |    |
|------------------------------------|-------|---------------------------|-----|---|-----------------------|--------|-------|--------|----|
| Styrene                            | 44.45 | 5.0                       | 50  | 0 | 88.9                  | 80-120 | 44.46 | 0.0284 | 20 |
| Tetrachloroethene                  | 43.15 | 5.0                       | 50  | 0 | 86.3                  | 79-120 | 39.81 | 8.06   | 20 |
| Toluene                            | 43.04 | 5.0                       | 50  | 0 | 86.1                  | 80-120 | 41.22 | 4.32   | 20 |
| trans-1,2-Dichloroethene           | 47.39 | 5.0                       | 50  | 0 | 94.8                  | 78-120 | 45.55 | 3.96   | 20 |
| trans-1,3-Dichloropropene          | 51.7  | 5.0                       | 50  | 0 | 103                   | 80-120 | 49.86 | 3.64   | 20 |
| Trichloroethene                    | 46.02 | 5.0                       | 50  | 0 | 92                    | 80-120 | 43.58 | 5.44   | 20 |
| Vinyl chloride                     | 41.04 | 2.0                       | 50  | 0 | 82.1                  | 70-127 | 38.71 | 5.84   | 20 |
| Xylenes, Total                     | 132.8 | 15                        | 150 | 0 | 88.5                  | 78-121 | 125.9 | 5.38   | 20 |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 48.78 | 5.0                       | 50  | 0 | 97.6                  | 70-125 | 48.62 | 0.325  | 20 |
| <i>Surr: 4-Bromofluorobenzene</i>  | 51.21 | 5.0                       | 50  | 0 | 102                   | 72-125 | 51.52 | 0.613  | 20 |
| <i>Surr: Dibromofluoromethane</i>  | 50.79 | 5.0                       | 50  | 0 | 102                   | 71-125 | 48.91 | 3.77   | 20 |
| <i>Surr: Toluene-d8</i>            | 46.88 | 5.0                       | 50  | 0 | 93.8                  | 75-125 | 47.29 | 0.861  | 20 |

The following samples were analyzed in this batch:

|              |              |
|--------------|--------------|
| 14021211-17A | 14021211-18A |
|--------------|--------------|

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162114** Instrument ID **ManTech01** Method: **SM2320B (Dissolve)**

| <b>MBLK</b>                        | Sample ID: <b>WBLKW1-R162114</b> | Units: <b>mg/L</b> |         |                       | Analysis Date: <b>2/28/2014 10:30 AM</b> |               |               |              |           |      |
|------------------------------------|----------------------------------|--------------------|---------|-----------------------|------------------------------------------|---------------|---------------|--------------|-----------|------|
| Client ID:                         | Run ID: <b>MANTECH01_140228A</b> |                    |         | SeqNo: <b>3547898</b> |                                          | Prep Date:    |               | DF: <b>1</b> |           |      |
| Analyte                            | Result                           | PQL                | SPK Val | SPK Ref Value         | %REC                                     | Control Limit | RPD Ref Value | %RPD         | RPD Limit | Qual |
| Alkalinity, Bicarbonate (As CaCO3) | ND                               | 6.00               |         |                       |                                          |               |               |              |           |      |
| Alkalinity, Carbonate (As CaCO3)   | ND                               | 6.00               |         |                       |                                          |               |               |              |           |      |
| Alkalinity, Hydroxide (As CaCO3)   | ND                               | 6.00               |         |                       |                                          |               |               |              |           |      |
| Alkalinity, Total (As CaCO3)       | ND                               | 6.00               |         |                       |                                          |               |               |              |           |      |

| <b>MBLK</b>                        | Sample ID: <b>WBLKW1-140228-R162114</b> | Units: <b>mg/L</b> |         |                       | Analysis Date: <b>2/28/2014 10:36 AM</b> |               |               |              |           |      |
|------------------------------------|-----------------------------------------|--------------------|---------|-----------------------|------------------------------------------|---------------|---------------|--------------|-----------|------|
| Client ID:                         | Run ID: <b>MANTECH01_140228A</b>        |                    |         | SeqNo: <b>3547900</b> |                                          | Prep Date:    |               | DF: <b>1</b> |           |      |
| Analyte                            | Result                                  | PQL                | SPK Val | SPK Ref Value         | %REC                                     | Control Limit | RPD Ref Value | %RPD         | RPD Limit | Qual |
| Alkalinity, Bicarbonate (As CaCO3) | ND                                      | 6.00               |         |                       |                                          |               |               |              |           |      |
| Alkalinity, Carbonate (As CaCO3)   | ND                                      | 6.00               |         |                       |                                          |               |               |              |           |      |
| Alkalinity, Hydroxide (As CaCO3)   | ND                                      | 6.00               |         |                       |                                          |               |               |              |           |      |
| Alkalinity, Total (As CaCO3)       | ND                                      | 6.00               |         |                       |                                          |               |               |              |           |      |

| <b>LCS</b>                   | Sample ID: <b>WLCSW1-140228-R162114</b> | Units: <b>mg/L</b> |         |                       | Analysis Date: <b>2/28/2014 10:42 AM</b> |               |               |              |           |      |
|------------------------------|-----------------------------------------|--------------------|---------|-----------------------|------------------------------------------|---------------|---------------|--------------|-----------|------|
| Client ID:                   | Run ID: <b>MANTECH01_140228A</b>        |                    |         | SeqNo: <b>3547902</b> |                                          | Prep Date:    |               | DF: <b>1</b> |           |      |
| Analyte                      | Result                                  | PQL                | SPK Val | SPK Ref Value         | %REC                                     | Control Limit | RPD Ref Value | %RPD         | RPD Limit | Qual |
| Alkalinity, Total (As CaCO3) | 1045                                    | 6.00               | 1000    |                       | 0                                        | 104           | 80-120        |              |           |      |

| <b>LCSD</b>                  | Sample ID: <b>LCSDW1-R162114</b> | Units: <b>mg/L</b> |         |                       | Analysis Date: <b>2/28/2014 01:07 PM</b> |               |               |              |           |      |
|------------------------------|----------------------------------|--------------------|---------|-----------------------|------------------------------------------|---------------|---------------|--------------|-----------|------|
| Client ID:                   | Run ID: <b>MANTECH01_140228A</b> |                    |         | SeqNo: <b>3547934</b> |                                          | Prep Date:    |               | DF: <b>1</b> |           |      |
| Analyte                      | Result                           | PQL                | SPK Val | SPK Ref Value         | %REC                                     | Control Limit | RPD Ref Value | %RPD         | RPD Limit | Qual |
| Alkalinity, Total (As CaCO3) | 1071                             | 6.00               | 1000    |                       | 0                                        | 107           | 80-120        | 0            | 0         | 20   |

| <b>DUP</b>                         | Sample ID: <b>14021211-12EDUP</b> | Units: <b>mg/L</b> |         |                       | Analysis Date: <b>2/28/2014 11:03 AM</b> |               |               |              |           |      |
|------------------------------------|-----------------------------------|--------------------|---------|-----------------------|------------------------------------------|---------------|---------------|--------------|-----------|------|
| Client ID: <b>MW-20</b>            | Run ID: <b>MANTECH01_140228A</b>  |                    |         | SeqNo: <b>3547907</b> |                                          | Prep Date:    |               | DF: <b>1</b> |           |      |
| Analyte                            | Result                            | PQL                | SPK Val | SPK Ref Value         | %REC                                     | Control Limit | RPD Ref Value | %RPD         | RPD Limit | Qual |
| Alkalinity, Bicarbonate (As CaCO3) | 228.3                             | 6.00               |         |                       |                                          |               | 234           | 2.48         | 0         |      |
| Alkalinity, Carbonate (As CaCO3)   | ND                                | 6.00               |         |                       |                                          |               | 0             | 0            | 0         |      |
| Alkalinity, Hydroxide (As CaCO3)   | ND                                | 6.00               |         |                       |                                          |               | 0             | 0            | 0         |      |
| Alkalinity, Total (As CaCO3)       | 228.3                             | 6.00               |         |                       |                                          |               | 234           | 2.48         | 20        |      |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14021211-11E | 14021211-12E | 14021211-13E | 14021211-15E |
| 14021211-16E | 14021211-17E |              |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162115** Instrument ID **ManTech01** Method: **SM4500H+ B (Dissolve)**

**LCS** Sample ID: **LCS-PH-R162115** Units: **pH Units** Analysis Date: **2/28/2014 10:45 AM**  
Client ID: Run ID: **MANTECH01\_140228B** SeqNo: **3547940** Prep Date: DF: **1**

| Analyte | Result | PQL   | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---------|--------|-------|---------|---------------|------|---------------|---------------|------|-----------|------|
| pH      | 6.04   | 0.100 | 6       | 0             | 101  | 98-102        |               |      |           |      |

**DUP** Sample ID: **14021211-12EDUP** Units: **pH Units** Analysis Date: **2/28/2014 11:03 AM**  
Client ID: **MW-20** Run ID: **MANTECH01\_140228B** SeqNo: **3547944** Prep Date: DF: **1**

| Analyte | Result | PQL   | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD  | RPD Limit | Qual |
|---------|--------|-------|---------|---------------|------|---------------|---------------|-------|-----------|------|
| pH      | 7.31   | 0.100 |         |               |      |               | 7.28          | 0.411 | 10        | H    |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14021211-11E | 14021211-12E | 14021211-13E | 14021211-15E |
| 14021211-16E | 14021211-17E |              |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162116** Instrument ID **ManTech01** Method: **M2510 B (Dissolve)**

|                       |                                  |      |         |               |                        |               |                                          |      |              |      |
|-----------------------|----------------------------------|------|---------|---------------|------------------------|---------------|------------------------------------------|------|--------------|------|
| <b>MBLK</b>           | Sample ID: <b>WBLKW1-R162116</b> |      |         |               | Units: <b>µmhos/cm</b> |               | Analysis Date: <b>2/28/2014 10:30 AM</b> |      |              |      |
| Client ID:            | Run ID: <b>MANTECH01_140228C</b> |      |         |               | SeqNo: <b>3547977</b>  |               | Prep Date:                               |      | DF: <b>1</b> |      |
| Analyte               | Result                           | PQL  | SPK Val | SPK Ref Value | %REC                   | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Specific Conductivity | ND                               | 5.00 |         |               |                        |               |                                          |      |              |      |

|                       |                                         |      |         |               |                        |               |                                          |      |              |      |
|-----------------------|-----------------------------------------|------|---------|---------------|------------------------|---------------|------------------------------------------|------|--------------|------|
| <b>MBLK</b>           | Sample ID: <b>WBLKW1-140228-R162116</b> |      |         |               | Units: <b>µmhos/cm</b> |               | Analysis Date: <b>2/28/2014 10:36 AM</b> |      |              |      |
| Client ID:            | Run ID: <b>MANTECH01_140228C</b>        |      |         |               | SeqNo: <b>3547978</b>  |               | Prep Date:                               |      | DF: <b>1</b> |      |
| Analyte               | Result                                  | PQL  | SPK Val | SPK Ref Value | %REC                   | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Specific Conductivity | ND                                      | 5.00 |         |               |                        |               |                                          |      |              |      |

|                       |                                    |      |         |               |                        |               |                                          |      |              |      |
|-----------------------|------------------------------------|------|---------|---------------|------------------------|---------------|------------------------------------------|------|--------------|------|
| <b>LCS</b>            | Sample ID: <b>LCS-COND-R162116</b> |      |         |               | Units: <b>µmhos/cm</b> |               | Analysis Date: <b>2/28/2014 10:46 AM</b> |      |              |      |
| Client ID:            | Run ID: <b>MANTECH01_140228C</b>   |      |         |               | SeqNo: <b>3547981</b>  |               | Prep Date:                               |      | DF: <b>1</b> |      |
| Analyte               | Result                             | PQL  | SPK Val | SPK Ref Value | %REC                   | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Specific Conductivity | 1656                               | 5.00 | 1413    |               | 0                      | 117           | 80-120                                   |      |              |      |

|                         |                                   |      |         |               |                        |               |                                          |      |              |      |
|-------------------------|-----------------------------------|------|---------|---------------|------------------------|---------------|------------------------------------------|------|--------------|------|
| <b>DUP</b>              | Sample ID: <b>14021211-12EDUP</b> |      |         |               | Units: <b>µmhos/cm</b> |               | Analysis Date: <b>2/28/2014 11:03 AM</b> |      |              |      |
| Client ID: <b>MW-20</b> | Run ID: <b>MANTECH01_140228C</b>  |      |         |               | SeqNo: <b>3547984</b>  |               | Prep Date:                               |      | DF: <b>1</b> |      |
| Analyte                 | Result                            | PQL  | SPK Val | SPK Ref Value | %REC                   | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Specific Conductivity   | 1026                              | 5.00 |         |               |                        |               | 1026                                     | 0    | 20           |      |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14021211-11E | 14021211-12E | 14021211-13E | 14021211-15E |
| 14021211-16E | 14021211-17E |              |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162123** Instrument ID **ManTech01** Method: **SM2320B** (Dissolve)

|                                    |                           |      |         |               |                |               |                                   |      |           |      |
|------------------------------------|---------------------------|------|---------|---------------|----------------|---------------|-----------------------------------|------|-----------|------|
| MBLK                               | Sample ID: WBLKW1-R162123 |      |         |               | Units: mg/L    |               | Analysis Date: 2/27/2014 07:42 PM |      |           |      |
| Client ID:                         | Run ID: MANTECH01_140227G |      |         |               | SeqNo: 3548167 |               | Prep Date:                        |      | DF: 1     |      |
| Analyte                            | Result                    | PQL  | SPK Val | SPK Ref Value | %REC           | Control Limit | RPD Ref Value                     | %RPD | RPD Limit | Qual |
| Alkalinity, Bicarbonate (As CaCO3) | ND                        | 6.00 |         |               |                |               |                                   |      |           |      |
| Alkalinity, Carbonate (As CaCO3)   | ND                        | 6.00 |         |               |                |               |                                   |      |           |      |
| Alkalinity, Hydroxide (As CaCO3)   | ND                        | 6.00 |         |               |                |               |                                   |      |           |      |
| Alkalinity, Total (As CaCO3)       | ND                        | 6.00 |         |               |                |               |                                   |      |           |      |

|                                    |                                  |      |         |               |      |                |               |                                   |           |       |
|------------------------------------|----------------------------------|------|---------|---------------|------|----------------|---------------|-----------------------------------|-----------|-------|
| MBLK                               | Sample ID: WBLKW1-140227-R162123 |      |         |               |      | Units: mg/L    |               | Analysis Date: 2/27/2014 07:48 PM |           |       |
| Client ID:                         | Run ID: MANTECH01_140227G        |      |         |               |      | SeqNo: 3548168 |               | Prep Date:                        |           | DF: 1 |
| Analyte                            | Result                           | PQL  | SPK Val | SPK Ref Value | %REC | Control Limit  | RPD Ref Value | %RPD                              | RPD Limit | Qual  |
| Alkalinity, Bicarbonate (As CaCO3) | ND                               | 6.00 |         |               |      |                |               |                                   |           |       |
| Alkalinity, Carbonate (As CaCO3)   | ND                               | 6.00 |         |               |      |                |               |                                   |           |       |
| Alkalinity, Hydroxide (As CaCO3)   | ND                               | 6.00 |         |               |      |                |               |                                   |           |       |
| Alkalinity, Total (As CaCO3)       | ND                               | 6.00 |         |               |      |                |               |                                   |           |       |

|                              |                                  |      |         |               |      |                |               |                                   |           |       |
|------------------------------|----------------------------------|------|---------|---------------|------|----------------|---------------|-----------------------------------|-----------|-------|
| LCS                          | Sample ID: WLCSW1-140227-R162123 |      |         |               |      | Units: mg/L    |               | Analysis Date: 2/27/2014 07:54 PM |           |       |
| Client ID:                   | Run ID: MANTECH01_140227G        |      |         |               |      | SeqNo: 3548169 |               | Prep Date:                        |           | DF: 1 |
| Analyte                      | Result                           | PQL  | SPK Val | SPK Ref Value | %REC | Control Limit  | RPD Ref Value | %RPD                              | RPD Limit | Qual  |
| Alkalinity, Total (As CaCO3) | 1025                             | 6.00 | 1000    |               | 0    | 102            | 80-120        |                                   |           |       |

|                              |                            |      |         |               |      |                |               |                                   |           |       |
|------------------------------|----------------------------|------|---------|---------------|------|----------------|---------------|-----------------------------------|-----------|-------|
| LCSD                         | Sample ID: WLCSDW1-R162123 |      |         |               |      | Units: mg/L    |               | Analysis Date: 2/27/2014 10:42 PM |           |       |
| Client ID:                   | Run ID: MANTECH01_140227G  |      |         |               |      | SeqNo: 3548201 |               | Prep Date:                        |           | DF: 1 |
| Analyte                      | Result                     | PQL  | SPK Val | SPK Ref Value | %REC | Control Limit  | RPD Ref Value | %RPD                              | RPD Limit | Qual  |
| Alkalinity, Total (As CaCO3) | 1087                       | 6.00 | 1000    | 0             | 109  | 80-120         | 1025          | 5.94                              | 20        |       |

|                                    |                            |      |                           |               |      |                |               |                                   |           |       |
|------------------------------------|----------------------------|------|---------------------------|---------------|------|----------------|---------------|-----------------------------------|-----------|-------|
| DUP                                | Sample ID: 14021211-01EDUP |      |                           |               |      | Units: mg/L    |               | Analysis Date: 2/27/2014 08:47 PM |           |       |
| Client ID: MW-28                   |                            |      | Run ID: MANTECH01_140227G |               |      | SeqNo: 3548181 |               | Prep Date:                        |           | DF: 1 |
| Analyte                            | Result                     | PQL  | SPK Val                   | SPK Ref Value | %REC | Control Limit  | RPD Ref Value | %RPD                              | RPD Limit | Qual  |
| Alkalinity, Bicarbonate (As CaCO3) | 241                        | 6.00 |                           |               |      |                | 243.9         | 1.22                              | 0         |       |
| Alkalinity, Carbonate (As CaCO3)   | ND                         | 6.00 |                           |               |      |                | 0             | 0                                 | 0         |       |
| Alkalinity, Hydroxide (As CaCO3)   | ND                         | 6.00 |                           |               |      |                | 0             | 0                                 | 0         |       |
| Alkalinity, Total (As CaCO3)       | 241                        | 6.00 |                           |               |      |                | 243.9         | 1.22                              | 20        |       |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14021211-01E | 14021211-02E | 14021211-03E | 14021211-04E |
| 14021211-05E | 14021211-06E | 14021211-08E | 14021211-09E |
| 14021211-10E |              |              |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162124** Instrument ID **ManTech01** Method: **SM4500H+ B (Dissolve)**

|            |                                  |                        |                                          |               |      |               |               |      |           |      |
|------------|----------------------------------|------------------------|------------------------------------------|---------------|------|---------------|---------------|------|-----------|------|
| <b>LCS</b> | Sample ID: <b>LCS-PH-R162124</b> | Units: <b>pH Units</b> | Analysis Date: <b>2/27/2014 07:57 PM</b> |               |      |               |               |      |           |      |
| Client ID: | Run ID: <b>MANTECH01_140227H</b> | SeqNo: <b>3548260</b>  | Prep Date: DF: <b>1</b>                  |               |      |               |               |      |           |      |
| Analyte    | Result                           | PQL                    | SPK Val                                  | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| pH         | 6.03                             | 0.100                  | 6                                        | 0             | 100  | 98-102        |               |      |           |      |

|                         |                                   |                        |                                          |               |      |               |               |      |           |      |
|-------------------------|-----------------------------------|------------------------|------------------------------------------|---------------|------|---------------|---------------|------|-----------|------|
| <b>DUP</b>              | Sample ID: <b>14021211-01EDUP</b> | Units: <b>pH Units</b> | Analysis Date: <b>2/27/2014 08:47 PM</b> |               |      |               |               |      |           |      |
| Client ID: <b>MW-28</b> | Run ID: <b>MANTECH01_140227H</b>  | SeqNo: <b>3548271</b>  | Prep Date: DF: <b>1</b>                  |               |      |               |               |      |           |      |
| Analyte                 | Result                            | PQL                    | SPK Val                                  | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| pH                      | 7.31                              | 0.100                  |                                          |               |      |               | 7.31          | 0    | 10        | H    |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14021211-01E | 14021211-02E | 14021211-03E | 14021211-04E |
| 14021211-05E | 14021211-06E | 14021211-08E | 14021211-09E |
| 14021211-10E |              |              |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162125** Instrument ID **ManTech01** Method: **M2510 B (Dissolve)**

|                       |                                  |      |         |               |                        |               |                                          |      |              |      |
|-----------------------|----------------------------------|------|---------|---------------|------------------------|---------------|------------------------------------------|------|--------------|------|
| <b>MBLK</b>           | Sample ID: <b>WBLKW1-R162125</b> |      |         |               | Units: <b>µmhos/cm</b> |               | Analysis Date: <b>2/27/2014 07:42 PM</b> |      |              |      |
| Client ID:            | Run ID: <b>MANTECH01_140227I</b> |      |         |               | SeqNo: <b>3548298</b>  |               | Prep Date:                               |      | DF: <b>1</b> |      |
| Analyte               | Result                           | PQL  | SPK Val | SPK Ref Value | %REC                   | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Specific Conductivity | ND                               | 5.00 |         |               |                        |               |                                          |      |              |      |

|                       |                                         |      |         |               |                        |               |                                          |      |              |      |
|-----------------------|-----------------------------------------|------|---------|---------------|------------------------|---------------|------------------------------------------|------|--------------|------|
| <b>MBLK</b>           | Sample ID: <b>WBLKW1-140227-R162125</b> |      |         |               | Units: <b>µmhos/cm</b> |               | Analysis Date: <b>2/27/2014 07:48 PM</b> |      |              |      |
| Client ID:            | Run ID: <b>MANTECH01_140227I</b>        |      |         |               | SeqNo: <b>3548299</b>  |               | Prep Date:                               |      | DF: <b>1</b> |      |
| Analyte               | Result                                  | PQL  | SPK Val | SPK Ref Value | %REC                   | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Specific Conductivity | ND                                      | 5.00 |         |               |                        |               |                                          |      |              |      |

|                       |                                    |      |         |               |                        |               |                                          |      |              |      |
|-----------------------|------------------------------------|------|---------|---------------|------------------------|---------------|------------------------------------------|------|--------------|------|
| <b>LCS</b>            | Sample ID: <b>LCS-COND-R162125</b> |      |         |               | Units: <b>µmhos/cm</b> |               | Analysis Date: <b>2/27/2014 07:58 PM</b> |      |              |      |
| Client ID:            | Run ID: <b>MANTECH01_140227I</b>   |      |         |               | SeqNo: <b>3548302</b>  |               | Prep Date:                               |      | DF: <b>1</b> |      |
| Analyte               | Result                             | PQL  | SPK Val | SPK Ref Value | %REC                   | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Specific Conductivity | 1615                               | 5.00 | 1413    |               | 0                      | 114           | 80-120                                   |      |              |      |

|                         |                                   |      |         |               |                        |               |                                          |       |              |      |
|-------------------------|-----------------------------------|------|---------|---------------|------------------------|---------------|------------------------------------------|-------|--------------|------|
| <b>DUP</b>              | Sample ID: <b>14021211-01EDUP</b> |      |         |               | Units: <b>µmhos/cm</b> |               | Analysis Date: <b>2/27/2014 08:47 PM</b> |       |              |      |
| Client ID: <b>MW-28</b> | Run ID: <b>MANTECH01_140227I</b>  |      |         |               | SeqNo: <b>3548312</b>  |               | Prep Date:                               |       | DF: <b>1</b> |      |
| Analyte                 | Result                            | PQL  | SPK Val | SPK Ref Value | %REC                   | Control Limit | RPD Ref Value                            | %RPD  | RPD Limit    | Qual |
| Specific Conductivity   | 794.4                             | 5.00 |         |               |                        |               | 793.3                                    | 0.134 | 20           |      |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14021211-01E | 14021211-02E | 14021211-03E | 14021211-04E |
| 14021211-05E | 14021211-06E | 14021211-08E | 14021211-09E |
| 14021211-10E |              |              |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162235** Instrument ID **BALANCE1** Method: **M2540C** **(Dissolve)**

|                                      |                                       |      |         |               |                       |               |                                          |      |              |      |
|--------------------------------------|---------------------------------------|------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| <b>MBLK</b>                          | Sample ID: <b>WBLK-022814-R162235</b> |      |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>2/28/2014 11:00 AM</b> |      |              |      |
| Client ID:                           | Run ID: <b>BALANCE1_140228E</b>       |      |         |               | SeqNo: <b>3550785</b> |               | Prep Date:                               |      | DF: <b>1</b> |      |
| Analyte                              | Result                                | PQL  | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Total Dissolved Solids (Residue, Fil | ND                                    | 10.0 |         |               |                       |               |                                          |      |              |      |

|                                      |                                       |      |         |               |                       |               |                                          |      |              |      |
|--------------------------------------|---------------------------------------|------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| <b>LCS</b>                           | Sample ID: <b>WLCS-022814-R162235</b> |      |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>2/28/2014 11:00 AM</b> |      |              |      |
| Client ID:                           | Run ID: <b>BALANCE1_140228E</b>       |      |         |               | SeqNo: <b>3550786</b> |               | Prep Date:                               |      | DF: <b>1</b> |      |
| Analyte                              | Result                                | PQL  | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Total Dissolved Solids (Residue, Fil | 1010                                  | 10.0 | 1000    |               | 0                     | 101           | 85-115                                   |      |              |      |

|                                      |                                   |      |         |               |                       |               |                                          |       |              |      |
|--------------------------------------|-----------------------------------|------|---------|---------------|-----------------------|---------------|------------------------------------------|-------|--------------|------|
| <b>DUP</b>                           | Sample ID: <b>14021096-01DDUP</b> |      |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>2/28/2014 11:00 AM</b> |       |              |      |
| Client ID:                           | Run ID: <b>BALANCE1_140228E</b>   |      |         |               | SeqNo: <b>3550770</b> |               | Prep Date:                               |       | DF: <b>1</b> |      |
| Analyte                              | Result                            | PQL  | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD  | RPD Limit    | Qual |
| Total Dissolved Solids (Residue, Fil | 243000                            | 10.0 |         |               |                       |               | 244000                                   | 0.402 | 10           |      |

|                                      |                                   |      |         |               |                       |               |                                          |      |              |      |
|--------------------------------------|-----------------------------------|------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| <b>DUP</b>                           | Sample ID: <b>14021109-01GDUP</b> |      |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>2/28/2014 11:00 AM</b> |      |              |      |
| Client ID:                           | Run ID: <b>BALANCE1_140228E</b>   |      |         |               | SeqNo: <b>3550776</b> |               | Prep Date:                               |      | DF: <b>1</b> |      |
| Analyte                              | Result                            | PQL  | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Total Dissolved Solids (Residue, Fil | 1118                              | 10.0 |         |               |                       |               | 1102                                     | 1.44 | 10           |      |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14021211-01E | 14021211-02E | 14021211-03E | 14021211-08E |
| 14021211-09E | 14021211-10E |              |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162364** Instrument ID **Balance1** Method: **M2540C** **(Dissolve)**

|                                      |                                       |      |         |               |                       |               |                                         |      |              |      |
|--------------------------------------|---------------------------------------|------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>MBLK</b>                          | Sample ID: <b>WBLK-030314-R162364</b> |      |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/3/2014 06:00 PM</b> |      |              |      |
| Client ID:                           | Run ID: <b>BALANCE1_140303G</b>       |      |         |               | SeqNo: <b>3553731</b> |               | Prep Date:                              |      | DF: <b>1</b> |      |
| Analyte                              | Result                                | PQL  | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Total Dissolved Solids (Residue, Fil | ND                                    | 10.0 |         |               |                       |               |                                         |      |              |      |

|                                      |                                       |      |         |               |                       |               |                                         |      |              |      |
|--------------------------------------|---------------------------------------|------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>LCS</b>                           | Sample ID: <b>WLCS-030314-R162364</b> |      |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/3/2014 06:00 PM</b> |      |              |      |
| Client ID:                           | Run ID: <b>BALANCE1_140303G</b>       |      |         |               | SeqNo: <b>3553732</b> |               | Prep Date:                              |      | DF: <b>1</b> |      |
| Analyte                              | Result                                | PQL  | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Total Dissolved Solids (Residue, Fil | 990                                   | 10.0 | 1000    |               | 0                     | 99            | 85-115                                  |      |              |      |

|                                      |                                   |      |         |               |                       |               |                                         |      |              |      |
|--------------------------------------|-----------------------------------|------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>DUP</b>                           | Sample ID: <b>14021111-01GDUP</b> |      |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/3/2014 06:00 PM</b> |      |              |      |
| Client ID:                           | Run ID: <b>BALANCE1_140303G</b>   |      |         |               | SeqNo: <b>3553711</b> |               | Prep Date:                              |      | DF: <b>1</b> |      |
| Analyte                              | Result                            | PQL  | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Total Dissolved Solids (Residue, Fil | 2160                              | 10.0 |         |               |                       |               | 2160                                    | 0    | 10           |      |

|                                      |                                   |      |         |               |                       |               |                                         |      |              |      |
|--------------------------------------|-----------------------------------|------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>DUP</b>                           | Sample ID: <b>14021211-13EDUP</b> |      |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/3/2014 06:00 PM</b> |      |              |      |
| Client ID: <b>MW-26</b>              | Run ID: <b>BALANCE1_140303G</b>   |      |         |               | SeqNo: <b>3553764</b> |               | Prep Date:                              |      | DF: <b>1</b> |      |
| Analyte                              | Result                            | PQL  | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Total Dissolved Solids (Residue, Fil | 982                               | 10.0 |         |               |                       |               | 944                                     | 3.95 | 10           |      |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14021211-04E | 14021211-05E | 14021211-06E | 14021211-11E |
| 14021211-12E | 14021211-13E | 14021211-15E | 14021211-16E |
| 14021211-17E |              |              |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162575** Instrument ID **ICS2100** Method: **E300**

|                        |                                  |       |         |               |                       |               |                                         |      |              |      |
|------------------------|----------------------------------|-------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>MBLK</b>            | Sample ID: <b>WBLKW1-R162575</b> |       |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/9/2014 11:17 PM</b> |      |              |      |
| Client ID:             | Run ID: <b>ICS2100_140309C</b>   |       |         |               | SeqNo: <b>3558382</b> |               | Prep Date:                              |      | DF: <b>1</b> |      |
| Analyte                | Result                           | PQL   | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Nitrate/Nitrite (as N) | ND                               | 0.200 |         |               |                       |               |                                         |      |              |      |

|                        |                                  |       |         |               |                       |               |                                         |      |              |      |
|------------------------|----------------------------------|-------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>LCS</b>             | Sample ID: <b>WLCSW1-R162575</b> |       |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/9/2014 11:32 PM</b> |      |              |      |
| Client ID:             | Run ID: <b>ICS2100_140309C</b>   |       |         |               | SeqNo: <b>3558383</b> |               | Prep Date:                              |      | DF: <b>1</b> |      |
| Analyte                | Result                           | PQL   | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Nitrate/Nitrite (as N) | 8.34                             | 0.200 | 8       | 0             | 104                   | 90-110        |                                         |      |              |      |

|                         |                                  |      |         |               |                       |               |                                          |      |              |      |
|-------------------------|----------------------------------|------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| <b>MS</b>               | Sample ID: <b>14021211-13BMS</b> |      |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/10/2014 04:08 AM</b> |      |              |      |
| Client ID: <b>MW-26</b> | Run ID: <b>ICS2100_140309C</b>   |      |         |               | SeqNo: <b>3558402</b> |               | Prep Date:                               |      | DF: <b>5</b> |      |
| Analyte                 | Result                           | PQL  | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Nitrate/Nitrite (as N)  | 22.11                            | 1.00 | 20      | 3.108         | 95                    | 80-120        |                                          |      |              |      |

|                         |                                   |      |         |               |                       |               |                                          |      |              |      |
|-------------------------|-----------------------------------|------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| <b>MSD</b>              | Sample ID: <b>14021211-13BMSD</b> |      |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/10/2014 04:23 AM</b> |      |              |      |
| Client ID: <b>MW-26</b> | Run ID: <b>ICS2100_140309C</b>    |      |         |               | SeqNo: <b>3558403</b> |               | Prep Date:                               |      | DF: <b>5</b> |      |
| Analyte                 | Result                            | PQL  | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Nitrate/Nitrite (as N)  | 21.68                             | 1.00 | 20      | 3.108         | 92.9                  | 80-120        | 22.11                                    | 1.93 | 20           |      |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14021211-01B | 14021211-02B | 14021211-03B | 14021211-04B |
| 14021211-05B | 14021211-06B | 14021211-08B | 14021211-09B |
| 14021211-10B | 14021211-11B | 14021211-12B | 14021211-13B |
| 14021211-15B | 14021211-16B | 14021211-17B |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162751** Instrument ID **ICS2100** Method: **E300**

| <b>MBLK</b> | Sample ID: <b>WBLKW4-R162751</b> |       |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/11/2014 05:49 AM</b> |      |              |      |
|-------------|----------------------------------|-------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| Client ID:  | Run ID: <b>ICS2100_140310G</b>   |       |         |               | SeqNo: <b>3562537</b> |               | Prep Date:                               |      | DF: <b>1</b> |      |
| Analyte     | Result                           | PQL   | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Chloride    | ND                               | 0.500 |         |               |                       |               |                                          |      |              |      |
| Fluoride    | ND                               | 0.100 |         |               |                       |               |                                          |      |              |      |
| Sulfate     | ND                               | 0.500 |         |               |                       |               |                                          |      |              |      |

| <b>LCS</b> | Sample ID: <b>WLCSW4-R162751</b> |       |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/11/2014 06:03 AM</b> |      |              |      |
|------------|----------------------------------|-------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| Client ID: | Run ID: <b>ICS2100_140310G</b>   |       |         |               | SeqNo: <b>3562538</b> |               | Prep Date:                               |      | DF: <b>1</b> |      |
| Analyte    | Result                           | PQL   | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Chloride   | 20.44                            | 0.500 | 20      | 0             | 102                   | 90-110        |                                          |      |              |      |
| Fluoride   | 3.76                             | 0.100 | 4       | 0             | 94                    | 90-110        |                                          |      |              |      |
| Sulfate    | 19.13                            | 0.500 | 20      | 0             | 95.6                  | 90-110        |                                          |      |              |      |

| <b>MS</b>               | Sample ID: <b>14021211-13EMS</b> |       |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/11/2014 09:27 AM</b> |      |              |      |
|-------------------------|----------------------------------|-------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| Client ID: <b>MW-26</b> | Run ID: <b>ICS2100_140310G</b>   |       |         |               | SeqNo: <b>3562552</b> |               | Prep Date:                               |      | DF: <b>1</b> |      |
| Analyte                 | Result                           | PQL   | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Chloride                | 203.1                            | 0.500 | 10      | 196.5         | 65.7                  | 80-120        |                                          |      |              | SEO  |
| Fluoride                | 2.206                            | 0.100 | 2       | 0.47          | 86.8                  | 80-120        |                                          |      |              |      |
| Sulfate                 | 166.4                            | 0.500 | 10      | 158.5         | 79.1                  | 80-120        |                                          |      |              | SEO  |

| <b>MSD</b>              | Sample ID: <b>14021211-13EMSD</b> |       |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/11/2014 09:41 AM</b> |      |              |      |
|-------------------------|-----------------------------------|-------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| Client ID: <b>MW-26</b> | Run ID: <b>ICS2100_140310G</b>    |       |         |               | SeqNo: <b>3562553</b> |               | Prep Date:                               |      | DF: <b>1</b> |      |
| Analyte                 | Result                            | PQL   | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Chloride                | 225.1                             | 0.500 | 10      | 196.5         | 286                   | 80-120        | 203.1                                    | 10.3 | 20           | SEO  |
| Fluoride                | 2.394                             | 0.100 | 2       | 0.47          | 96.2                  | 80-120        | 2.206                                    | 8.17 | 20           |      |
| Sulfate                 | 175.4                             | 0.500 | 10      | 158.5         | 169                   | 80-120        | 166.4                                    | 5.27 | 20           | SEO  |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14021211-01E | 14021211-02E | 14021211-03E | 14021211-04E |
| 14021211-05E | 14021211-06E | 14021211-08E | 14021211-09E |
| 14021211-10E | 14021211-11E | 14021211-12E | 14021211-13E |
| 14021211-15E | 14021211-16E | 14021211-17E |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14021211  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162753** Instrument ID **ICS2100** Method: **E300**

| <b>MBLK</b> | Sample ID: <b>WBLKW3-R162753</b> |       |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/12/2014 09:46 AM</b> |      |              |      |
|-------------|----------------------------------|-------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| Client ID:  | Run ID: <b>ICS2100_140311C</b>   |       |         |               | SeqNo: <b>3562567</b> |               | Prep Date:                               |      | DF: <b>1</b> |      |
| Analyte     | Result                           | PQL   | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Chloride    | ND                               | 0.500 |         |               |                       |               |                                          |      |              |      |
| Sulfate     | ND                               | 0.500 |         |               |                       |               |                                          |      |              |      |

| <b>LCS</b> | Sample ID: <b>WLCSW3-R162753</b> |       |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/12/2014 10:01 AM</b> |      |              |      |
|------------|----------------------------------|-------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| Client ID: | Run ID: <b>ICS2100_140311C</b>   |       |         |               | SeqNo: <b>3562568</b> |               | Prep Date:                               |      | DF: <b>1</b> |      |
| Analyte    | Result                           | PQL   | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Chloride   | 20.45                            | 0.500 | 20      | 0             | 102                   | 90-110        |                                          |      |              |      |
| Sulfate    | 19.54                            | 0.500 | 20      | 0             | 97.7                  | 90-110        |                                          |      |              |      |

| <b>MS</b>  | Sample ID: <b>14030001-02BMS</b> |      |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/12/2014 03:18 PM</b> |      |              |      |
|------------|----------------------------------|------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| Client ID: | Run ID: <b>ICS2100_140311C</b>   |      |         |               | SeqNo: <b>3562582</b> |               | Prep Date:                               |      | DF: <b>5</b> |      |
| Analyte    | Result                           | PQL  | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Chloride   | 115.8                            | 2.50 | 50      | 59.56         | 112                   | 80-120        |                                          |      |              |      |
| Sulfate    | 166.1                            | 2.50 | 50      | 123           | 86.1                  | 80-120        |                                          |      |              |      |

| <b>MSD</b> | Sample ID: <b>14030001-02BMSD</b> |      |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/12/2014 03:32 PM</b> |      |              |      |
|------------|-----------------------------------|------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| Client ID: | Run ID: <b>ICS2100_140311C</b>    |      |         |               | SeqNo: <b>3562583</b> |               | Prep Date:                               |      | DF: <b>5</b> |      |
| Analyte    | Result                            | PQL  | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Chloride   | 111.5                             | 2.50 | 50      | 59.56         | 104                   | 80-120        | 115.8                                    | 3.76 | 20           |      |
| Sulfate    | 170.7                             | 2.50 | 50      | 123           | 95.3                  | 80-120        | 166.1                                    | 2.75 | 20           |      |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14021211-02E | 14021211-03E | 14021211-06E | 14021211-09E |
| 14021211-10E | 14021211-11E | 14021211-12E | 14021211-13E |
| 14021211-15E |              |              |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**WorkOrder:** 14021211

## QUALIFIERS, ACRONYMS, UNITS

| <u>Qualifier</u> | <u>Description</u>                                                        |
|------------------|---------------------------------------------------------------------------|
| *                | Value exceeds Regulatory Limit                                            |
| a                | Not accredited                                                            |
| B                | Analyte detected in the associated Method Blank above the Reporting Limit |
| E                | Value above quantitation range                                            |
| H                | Analyzed outside of Holding Time                                          |
| J                | Analyte detected below quantitation limit                                 |
| M                | Manually integrated, see raw data for justification                       |
| n                | Not offered for accreditation                                             |
| ND               | Not Detected at the Reporting Limit                                       |
| O                | Sample amount is > 4 times amount spiked                                  |
| P                | Dual Column results percent difference > 40%                              |
| R                | RPD above laboratory control limit                                        |
| S                | Spike Recovery outside laboratory control limits                          |
| U                | Analyzed but not detected above the MDL                                   |

| <u>Acronym</u> | <u>Description</u>                  |
|----------------|-------------------------------------|
| DCS            | Detectability Check Study           |
| DUP            | Method Duplicate                    |
| LCS            | Laboratory Control Sample           |
| LCSD           | Laboratory Control Sample Duplicate |
| MBLK           | Method Blank                        |
| MDL            | Method Detection Limit              |
| MQL            | Method Quantitation Limit           |
| MS             | Matrix Spike                        |
| MSD            | Matrix Spike Duplicate              |
| PDS            | Post Digestion Spike                |
| PQL            | Practical Quantitation Limit        |
| SD             | Serial Dilution                     |
| SDL            | Sample Detection Limit              |
| TRRP           | Texas Risk Reduction Program        |

| <u>Units Reported</u> | <u>Description</u>   |
|-----------------------|----------------------|
| µg/L                  | Micrograms per Liter |
| µmhos/cm              | micro mho per cm     |
| mg/L                  | Milligrams per Liter |
| pH Units              |                      |

## Sample Receipt Checklist

Client Name: **NAVAJO REFINING**

Date/Time Received: **26-Feb-14 09:45**

Work Order: **14021211**

Received by: **SAY**

Checklist completed by *Parash M. Ciga*  
eSignature

27-Feb-14  
Date

Reviewed by:

eSignature

Date

Matrices: Groundwater/Water

Carrier name: FedEx

|                                                         |                                         |                             |                                                 |
|---------------------------------------------------------|-----------------------------------------|-----------------------------|-------------------------------------------------|
| Shipping container/cooler in good condition?            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/>            |
| Custody seals intact on shipping container/cooler?      | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/>            |
| Custody seals intact on sample bottles?                 | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Chain of custody present?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |                                                 |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |                                                 |
| Chain of custody agrees with sample labels?             | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |                                                 |
| Samples in proper container/bottle?                     | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |                                                 |
| Sample containers intact?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |                                                 |
| Sufficient sample volume for indicated test?            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |                                                 |
| All samples received within holding time?               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |                                                 |
| Container/Temp Blank temperature in compliance?         | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |                                                 |

Temperature(s)/Thermometer(s):

1.8c/1.8c,2.3c/2.3c,1.6c/1.6c,2.0c/2.0c,2.2c/2.2c,1.6c/1.6c,2.0c/2.0c  
C/U

IR1

Cooler(s)/Kit(s):

5628,3848,2783,5540,4375,3165,5896

Date/Time sample(s) sent to storage:

2/27/14 14:30

Water - VOA vials have zero headspace?

Yes ☒ No ☐ No VOA vials submitted ☐

Water - pH acceptable upon receipt?

Yes ☒ No ☐ N/A ☐

pH adjusted?

Yes ☐ No ☒ N/A ☐

pH adjusted by:

Login Notes: Sample count does not match for TB-2-26-13. Received and logged in for 2 x Vials only

Client Contacted:

Date Contacted:

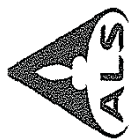
Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



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Everett, WA  
+1 425 356 2600

Fort Collins, CO  
+1 970 490 1511  
Holland, MI  
+1 616 399 6070

## Chain of Custody Fo

Page 1 of 2

COC ID: 10138

**Environmental**

### Customer Information

|                |                             |
|----------------|-----------------------------|
| Purchase Order | 171658                      |
| Work Order     |                             |
| Company Name   | Navajo Refining Company     |
| Send Report To | Robert Combs                |
| Address        | PO Box 159<br>501 East Main |
| City/State/Zip | Artesia, NM 88211           |
| Phone          | (575) 748-6733              |
| Fax            | (575) 748-5421              |
| e-Mail Address | jspeer@trc-solutions.com    |

### Project Information

|                 |                                    |
|-----------------|------------------------------------|
| Project Name    | Lovington Lea Refining Semi-Annual |
| Project Number  |                                    |
| Bill To Company | Navajo Refining Company            |
| Invoice Attn    | Robert Combs                       |
| Address         | PO Box 159<br>501 East Main        |
| City/State/Zip  | Artesia, NM 88211                  |
| Phone           | (575) 748-6733                     |
| Fax             | (575) 748-5421                     |

### ALS Project Manager:

Robert, Combs

Parameter/Method

|   |                                        |
|---|----------------------------------------|
| A | VOC (8260) Select                      |
| B | SVOC LL (8270) TCL+1-Methylnaphthalene |
| C | Total Metals & Hg (6020/7000)          |
| D | Dissolved Metals (6020/7000) Select    |
| E | Anions (300) Cl, F, SO4                |
| F | Alkalinity                             |
| G | pH                                     |
| H | Specific Conductance                   |
| I | TDS                                    |

Nitrate/Nitrite (300)

| No. | Sample Description | Date    | Time | Matrix | Pres.   | # Bottles | A | B | C | D | E | F | G | H | I | J | Hold |
|-----|--------------------|---------|------|--------|---------|-----------|---|---|---|---|---|---|---|---|---|---|------|
| 1   | MW-28              | 2-24-14 | 1645 | GLW    | 1,2,3,8 | 9         | X | X | X | X | X | X | X | X | X | X | X    |
| 2   | MW-15              | 2-24-14 | 1715 | GLW    | 1,2,3,8 | 9         | X | X | X | X | X | X | X | X | X | X | X    |
| 3   | Dup-1              | 2-24-14 | 1715 | GLW    | 1,2,3,8 | 9         | X | X | X | X | X | X | X | X | X | X | X    |
| 4   | MW-16              | 2-25-14 | 1610 | GLW    | 1,2,3,8 | 9         | X | X | X | X | X | X | X | X | X | X | X    |
| 5   | MW-4               | 2-25-14 | 1645 | GLW    | 1,2,3,8 | 9         | X | X | X | X | X | X | X | X | X | X | X    |
| 6   | MW-2               | 2-25-14 | 1805 | GLW    | 1,2,3,8 | 9         | X | X | X | X | X | X | X | X | X | X | X    |
| 7   | AL-2-25-14-A       | 2-25-14 | 1825 | GLW    | 1,2,3,8 | 3         | X |   |   |   |   |   |   |   |   |   |      |
| 8   | MW-5               | 2-25-14 | 1844 | GLW    | 1,2,3,8 | 9         | X | X | X | X | X | X | X | X | X | X | X    |
| 9   | MW-21              | 2-25-14 | 1124 | GLW    | 1,2,3,8 | 9         | X | X | X | X | X | X | X | X | X | X | X    |
| 10  | MW-22              | 2-25-14 | 1335 | GLW    | 1,2,3,8 | 9         | X | X | X | X | X | X | X | X | X | X | X    |

Shipments Method: **FedEx** Required Turnaround Time: (Check Box) ☒ Std 10 WK Days ☐ 5 WK Days ☐ Other ☐ 2 WK Days ☐ 24 Hour Results Due Date:

Relinquished by: *Sean Allen* Date: *2-26-14* Time: *1530* Received by: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Relinquished by: \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_

Preservative Key: 1-HCl 2-HNO<sub>3</sub> 3-H<sub>2</sub>SO<sub>4</sub> 4-NaOH 5-Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> 6-NaHSO<sub>4</sub> 7-Other 8-4°C 9-5035

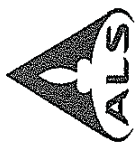
Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.

3. The Chain of Custody is a legal document. All information must be completed accurately.

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## Chain of Custody Form

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+1 717 505 5280

# Environmental

Page 2 of 2

COC ID: 101380

| Customer Information |                    |         |      | Project Information     |         |           |   | ALS Project Manager: 101380        |   |   |   |                   |   |   |   |                                        |      |  |  | ALS Work Order #: 1021211 |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|--------------------|---------|------|-------------------------|---------|-----------|---|------------------------------------|---|---|---|-------------------|---|---|---|----------------------------------------|------|--|--|---------------------------|--|--|--|--|--|--|--|--|--|--|--|
| Purchase Order       |                    |         |      | Project Name            |         |           |   | Lovington Lea Refining Semi-Annual |   |   |   | VOC (8260) Select |   |   |   | Parameter/Method Request for Analysis  |      |  |  |                           |  |  |  |  |  |  |  |  |  |  |  |
| Work Order           |                    |         |      | Project Number          |         |           |   |                                    |   |   |   | B                 |   |   |   | SVOC LL (8270) TCL+1-Methylnaphthalene |      |  |  |                           |  |  |  |  |  |  |  |  |  |  |  |
| Company Name         |                    |         |      | Navajo Refining Company |         |           |   | Bill To Company                    |   |   |   | C                 |   |   |   | Total Metals & Hg (60207000) Select    |      |  |  |                           |  |  |  |  |  |  |  |  |  |  |  |
| Send Report To       |                    |         |      | Robert Combs            |         |           |   | Invoice Attn                       |   |   |   | D                 |   |   |   | Dissolved Metals (60207000) Select     |      |  |  |                           |  |  |  |  |  |  |  |  |  |  |  |
| Address              |                    |         |      | PO Box 159              |         |           |   | Address                            |   |   |   | E                 |   |   |   | Anions (300) Cl, F, SO4                |      |  |  |                           |  |  |  |  |  |  |  |  |  |  |  |
|                      |                    |         |      | 501 East Main           |         |           |   |                                    |   |   |   | F                 |   |   |   | Alkalinity                             |      |  |  |                           |  |  |  |  |  |  |  |  |  |  |  |
| City/State/Zip       |                    |         |      | Artesia, NM 88211       |         |           |   | City/State/Zip                     |   |   |   | G                 |   |   |   | pH                                     |      |  |  |                           |  |  |  |  |  |  |  |  |  |  |  |
| Phone                |                    |         |      | (575) 748-6733          |         |           |   | Phone                              |   |   |   | H                 |   |   |   | Specific Conductance                   |      |  |  |                           |  |  |  |  |  |  |  |  |  |  |  |
| Fax                  |                    |         |      | (575) 748-5421          |         |           |   | Fax                                |   |   |   | I                 |   |   |   | TDS                                    |      |  |  |                           |  |  |  |  |  |  |  |  |  |  |  |
| e-Mail Address       |                    |         |      | jspeere@resolutions.com |         |           |   | e-Mail Address                     |   |   |   | J                 |   |   |   | Nitrate/Nitrite (300)                  |      |  |  |                           |  |  |  |  |  |  |  |  |  |  |  |
| No.                  | Sample Description | Date    | Time | Matrix                  | Pres.   | # Bottles | A | B                                  | C | D | E | F                 | G | H | I | J                                      | Hold |  |  |                           |  |  |  |  |  |  |  |  |  |  |  |
| 1                    | mw-23              | 2-25-14 | 1458 | GW                      | 1,2,3,8 | 9         | X | X                                  | X | X | X | X                 | X | X | X | X                                      | X    |  |  |                           |  |  |  |  |  |  |  |  |  |  |  |
| 2                    | mw-20              | 2-26-14 | 1640 | GW                      | 1,2,3,8 | 9         | X | X                                  | X | X | X | X                 | X | X | X | X                                      | X    |  |  |                           |  |  |  |  |  |  |  |  |  |  |  |
| 3                    | mw-26              | 2-26-14 | 1055 | GW                      | 1,2,3,8 | 27        | X | X                                  | X | X | X | X                 | X | X | X | X                                      | X    |  |  |                           |  |  |  |  |  |  |  |  |  |  |  |
| 4                    | AL-2-26-14-13      | 2-26-14 | 1315 | GW                      | 1,8     | 3         | X | X                                  | X | X | X | X                 | X | X | X | X                                      | X    |  |  |                           |  |  |  |  |  |  |  |  |  |  |  |
| 5                    | mw-10              | 2-26-14 | 850  | GW                      | 1,2,3,8 | 9         | X | X                                  | X | X | X | X                 | X | X | X | X                                      | X    |  |  |                           |  |  |  |  |  |  |  |  |  |  |  |
| 6                    | mw-9               | 2-26-14 | 1025 | GW                      | 1,2,3,8 | 9         | X | X                                  | X | X | X | X                 | X | X | X | X                                      | X    |  |  |                           |  |  |  |  |  |  |  |  |  |  |  |
| 7                    | mw-3               | 2-26-14 | 1143 | GW                      | 1,2,3,8 | 9         | X | X                                  | X | X | X | X                 | X | X | X | X                                      | X    |  |  |                           |  |  |  |  |  |  |  |  |  |  |  |
| 8                    | TB-2-26-13         |         |      | W                       | 1,2,3,8 | 3         | X | X                                  | X | X | X | X                 | X | X | X | X                                      | X    |  |  |                           |  |  |  |  |  |  |  |  |  |  |  |
| 9                    |                    |         |      |                         |         |           |   |                                    |   |   |   |                   |   |   |   |                                        |      |  |  |                           |  |  |  |  |  |  |  |  |  |  |  |
| 10                   |                    |         |      |                         |         |           |   |                                    |   |   |   |                   |   |   |   |                                        |      |  |  |                           |  |  |  |  |  |  |  |  |  |  |  |

| Sampler(s) Please Print & Sign                                                        |               | Shipment Method |                          | Required Turnaround Time (Check Box)                                                                                                                       |  | Results Due Date: |  |
|---------------------------------------------------------------------------------------|---------------|-----------------|--------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------|--|-------------------|--|
| Fed Ex                                                                                |               |                 |                          | <input checked="" type="checkbox"/> Std. 10 WK Days <input type="checkbox"/> 5 WK Days <input type="checkbox"/> 2 WK Days <input type="checkbox"/> 24 Hour |  |                   |  |
| Received by: <i>John Allen</i>                                                        | Date: 2-26-14 | Time: 1550      | Received by:             |                                                                                                                                                            |  |                   |  |
| Relinquished by: <i>John Allen</i>                                                    | Date: 2-26-14 | Time: 1550      | Relinquished by:         |                                                                                                                                                            |  |                   |  |
| Logged by (Laboratory):                                                               | Date:         | Time:           | Checked by (Laboratory): |                                                                                                                                                            |  |                   |  |
| Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4°C 9-5035 |               |                 |                          |                                                                                                                                                            |  |                   |  |

Notes: 10 Day TAT. ALS Project: Navajo - Lea Refinery Semi-Annual

QC Packages: (Check One Box Below)

☒ Level II Std QC ☐ TRRP Checklist

☐ Level III Std QC/Raw Data ☐ TRRP Level IV

☐ Level IV SW846/CLP ☐ Other / EDD

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.

3. The Chain of Custody is a legal document. All information must be completed accurately.

Copyright 2011 by ALS Environmental.



ORIGIN ID:HOBA

SHIP DATE: 26FEB14  
ACTWGT: 63.6 LB  
CAD: P051424  
DIMS: 23x13x15 IN  
BILL RECIPIENT

UNITED STATES US

TO CLIENT SERVICES  
ALS LABORATORY GROUP  
10450 STANCLIFF RD  
STE 210  
HOUSTON TX 77099

(281) 530-6656  
TNU:  
P01

REF:

DEPT:



FedEx  
Express



7 of 7

MPS# 7980 4911 9916  
0681  
Mstr# 8042 4829 3993

THU - 27 FEB 10:30A  
PRIORITY OVERNIGHT

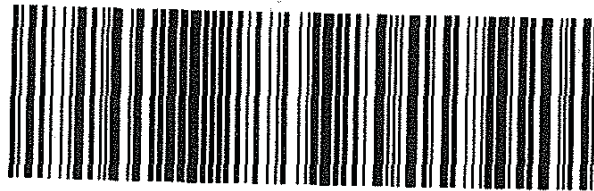
DSR

77099

TX-US IAH

AB SGRA

0215



**ALS Environmental**

10450 Stancliff Rd., Suite 210  
Houston, Texas 77099  
Tel. +1 281 530 5656  
Fax. +1 281 530 5887

CUSTOMER

Date: 2-26-14 Time: 1538  
Name: John Allen  
Company: FRC

CUSTOMER SEAL 5624

Seal Broken By:

Date: 2/27/14



**ALS Environmental**

10450 Stancliff Rd., Suite 210  
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Fax. +1 281 530 5887

CUSTOMER

Date: 2-26-14 Time: 1538  
Name: John Allen  
Company: FRC

CUSTOMER SEAL 5624

Seal Broken By:

Date: 2/27/14



**ALS Environmental**

10450 Stancliff Rd., Suite 210  
Houston, Texas 77099  
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Fax. +1 281 530 5887

CUSTOMER

Date: 2-26-14 Time: 1538  
Name: John Allen  
Company: FRC

CUSTOMER SEAL 3848

Seal Broken By:

Date: 2/27/14



**ALS Environmental**

10450 Stancliff Rd., Suite 210  
Houston, Texas 77099  
Tel. +1 281 530 5656  
Fax. +1 281 530 5887

CUSTOMER

Date: 2-26-14 Time: 1538  
Name: John Allen  
Company: FRC

CUSTOMER SEAL 3848

Seal Broken By:

Date: 2/27/14

|                                                                                                                                                                                                                        |                                                                                           |  |                                                   |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------|--|---------------------------------------------------|
|  <b>ALS Environmental</b><br>10450 Stancliff Rd., Suite 210<br>Houston, Texas 77099<br>Tel. +1 281 530 5656<br>Fax. +1 281 530 5887   | <b>CUSTODY SEAL 2783</b>                                                                  |  | Seal Broken By: <u>BT</u><br>Date: <u>2/27/14</u> |
|                                                                                                                                                                                                                        | Date: <u>2-26-14</u> Time: <u>1538</u><br>Name: <u>Sonia Allen</u><br>Company: <u>TRC</u> |  |                                                   |
|  <b>ALS Environmental</b><br>10450 Stancliff Rd., Suite 210<br>Houston, Texas 77099<br>Tel. +1 281 530 5656<br>Fax. +1 281 530 5887   | <b>CUSTODY SEAL 2783</b>                                                                  |  | Seal Broken By: <u>BT</u><br>Date: <u>2/27/14</u> |
|                                                                                                                                                                                                                        | Date: <u>2-26-14</u> Time: <u>1538</u><br>Name: <u>Sonia Allen</u><br>Company: <u>TRC</u> |  |                                                   |
|  <b>ALS Environmental</b><br>10450 Stancliff Rd., Suite 210<br>Houston, Texas 77099<br>Tel. +1 281 530 5656<br>Fax. +1 281 530 5887   | <b>CUSTODY SEAL 5540</b>                                                                  |  | Seal Broken By: <u>BT</u><br>Date: <u>2/27/14</u> |
|                                                                                                                                                                                                                        | Date: <u>2-26-14</u> Time: <u>1538</u><br>Name: <u>Sonia Allen</u><br>Company: <u>TRC</u> |  |                                                   |
|  <b>ALS Environmental</b><br>10450 Stancliff Rd., Suite 210<br>Houston, Texas 77099<br>Tel. +1 281 530 5656<br>Fax. +1 281 530 5887   | <b>CUSTODY SEAL 5540</b>                                                                  |  | Seal Broken By: <u>BT</u><br>Date: <u>2/27/14</u> |
|                                                                                                                                                                                                                        | Date: <u>2-26-14</u> Time: <u>1538</u><br>Name: <u>Sonia Allen</u><br>Company: <u>TRC</u> |  |                                                   |
|  <b>ALS Environmental</b><br>10450 Stancliff Rd., Suite 210<br>Houston, Texas 77099<br>Tel. +1 281 530 5656<br>Fax. +1 281 530 5887  | <b>CUSTODY SEAL 4378</b>                                                                  |  | Seal Broken By: <u>BT</u><br>Date: <u>2/27/14</u> |
|                                                                                                                                                                                                                        | Date: <u>2-26-14</u> Time: <u>1538</u><br>Name: <u>Sonia Allen</u><br>Company: <u>TRC</u> |  |                                                   |
|  <b>ALS Environmental</b><br>10450 Stancliff Rd., Suite 210<br>Houston, Texas 77099<br>Tel. +1 281 530 5656<br>Fax. +1 281 530 5887 | <b>CUSTODY SEAL 4378</b>                                                                  |  | Seal Broken By: <u>BT</u><br>Date: <u>2/27/14</u> |
|                                                                                                                                                                                                                        | Date: <u>2/26/14</u> Time: <u>1538</u><br>Name: <u>Sonia Allen</u><br>Company: <u>TRC</u> |  |                                                   |
|  <b>ALS Environmental</b><br>10450 Stancliff Rd., Suite 210<br>Houston, Texas 77099<br>Tel. +1 281 530 5656<br>Fax. +1 281 530 5887 | <b>CUSTODY SEAL 3115</b>                                                                  |  | Seal Broken By: <u>BT</u><br>Date: <u>2/27/14</u> |
|                                                                                                                                                                                                                        | Date: <u>2-26-14</u> Time: <u>1538</u><br>Name: <u>Sonia Allen</u><br>Company: <u>TRC</u> |  |                                                   |
|  <b>ALS Environmental</b><br>10450 Stancliff Rd., Suite 210<br>Houston, Texas 77099<br>Tel. +1 281 530 5656<br>Fax. +1 281 530 5887 | <b>CUSTODY SEAL 3115</b>                                                                  |  | Seal Broken By: <u>BT</u><br>Date: <u>2/27/14</u> |
|                                                                                                                                                                                                                        | Date: <u>2-26-14</u> Time: <u>1538</u><br>Name: <u>Sonia Allen</u><br>Company: <u>TRC</u> |  |                                                   |
|  <b>ALS Environmental</b><br>10450 Stancliff Rd., Suite 210<br>Houston, Texas 77099<br>Tel. +1 281 530 5656<br>Fax. +1 281 530 5887 | <b>CUSTODY SEAL 5896</b>                                                                  |  | Seal Broken By: <u>BT</u><br>Date: <u>2/27/14</u> |
|                                                                                                                                                                                                                        | Date: <u>2-26-14</u> Time: <u>1538</u><br>Name: <u>Sonia Allen</u><br>Company: <u>TRC</u> |  |                                                   |
|  <b>ALS Environmental</b><br>10450 Stancliff Rd., Suite 210<br>Houston, Texas 77099<br>Tel. +1 281 530 5656<br>Fax. +1 281 530 5887 | <b>CUSTODY SEAL 5896</b>                                                                  |  | Seal Broken By: <u>BT</u><br>Date: <u>2/27/14</u> |
|                                                                                                                                                                                                                        | Date: <u>2-26-14</u> Time: <u>1538</u><br>Name: <u>Sonia Allen</u><br>Company: <u>TRC</u> |  |                                                   |



18-Mar-2014

Robert Combs  
Navajo Refining Company  
PO Box 1490  
Artesia, NM 88211-1490

Tel: (575) 746-5382  
Fax: (575) 746-5421

Re: Navajo Lea Refinery Semi-Annual

Work Order: **14030008**

Dear Robert,

ALS Environmental received 22 samples on 01-Mar-2014 09:45 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 174.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in black ink that reads "Sonia West".

Electronically approved by: Sonia West

Sonia West  
Project Manager



Certificate No: T104704231-13-12

ADDRESS 10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 | PHONE (281) 530-5656 | FAX (281) 530-5887

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Environmental

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RIGHT SOLUTIONS RIGHT PARTNER

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Work Order:** 14030008

## Work Order Sample Summary

| <u>Lab Samp ID</u> | <u>Client Sample ID</u> | <u>Matrix</u> | <u>Tag Number</u> | <u>Collection Date</u> | <u>Date Received</u> | <u>Hold</u>                         |
|--------------------|-------------------------|---------------|-------------------|------------------------|----------------------|-------------------------------------|
| 14030008-01        | MW-18                   | Groundwater   |                   | 2/26/2014 15:35        | 3/1/2014 09:45       | <input type="checkbox"/>            |
| 14030008-02        | MW-19                   | Groundwater   |                   | 2/26/2014 13:15        | 3/1/2014 09:45       | <input type="checkbox"/>            |
| 14030008-03        | MW-25                   | Groundwater   |                   | 2/26/2014 17:12        | 3/1/2014 09:45       | <input type="checkbox"/>            |
| 14030008-04        | Dup-3                   | Groundwater   |                   | 2/26/2014 13:15        | 3/1/2014 09:45       | <input type="checkbox"/>            |
| 14030008-05        | Dup-4                   | Groundwater   |                   | 2/26/2014 17:12        | 3/1/2014 09:45       | <input type="checkbox"/>            |
| 14030008-06        | MW-12R                  | Groundwater   |                   | 2/27/2014 08:33        | 3/1/2014 09:45       | <input type="checkbox"/>            |
| 14030008-07        | MW-7                    | Groundwater   |                   | 2/27/2014 11:15        | 3/1/2014 09:45       | <input type="checkbox"/>            |
| 14030008-08        | RW-1                    | Groundwater   |                   | 2/27/2014 13:10        | 3/1/2014 09:45       | <input type="checkbox"/>            |
| 14030008-09        | MW-1                    | Groundwater   |                   | 2/27/2014 14:20        | 3/1/2014 09:45       | <input type="checkbox"/>            |
| 14030008-10        | MW-6                    | Groundwater   |                   | 2/27/2014 16:05        | 3/1/2014 09:45       | <input type="checkbox"/>            |
| 14030008-11        | MW-29                   | Groundwater   |                   | 2/27/2014 18:05        | 3/1/2014 09:45       | <input type="checkbox"/>            |
| 14030008-12        | Dup-2                   | Groundwater   |                   | 2/27/2014 18:05        | 3/1/2014 09:45       | <input type="checkbox"/>            |
| 14030008-13        | MW-30                   | Groundwater   |                   | 2/27/2014 19:50        | 3/1/2014 09:45       | <input type="checkbox"/>            |
| 14030008-14        | MW-24                   | Groundwater   |                   | 2/27/2014 10:59        | 3/1/2014 09:45       | <input type="checkbox"/>            |
| 14030008-15        | MW-13                   | Groundwater   |                   | 2/27/2014 13:28        | 3/1/2014 09:45       | <input type="checkbox"/>            |
| 14030008-16        | MW-27                   | Groundwater   |                   | 2/27/2014 12:20        | 3/1/2014 09:45       | <input type="checkbox"/>            |
| 14030008-17        | MW-8                    | Groundwater   |                   | 2/27/2014 15:05        | 3/1/2014 09:45       | <input type="checkbox"/>            |
| 14030008-18        | MW-17R                  | Groundwater   |                   | 2/27/2014 17:42        | 3/1/2014 09:45       | <input type="checkbox"/>            |
| 14030008-19        | WW-South                | Groundwater   |                   | 2/28/2014 09:55        | 3/1/2014 09:45       | <input type="checkbox"/>            |
| 14030008-20        | WW-East                 | Groundwater   |                   | 2/28/2014 10:35        | 3/1/2014 09:45       | <input type="checkbox"/>            |
| 14030008-21        | TB-2-28-14              | Water         |                   | 2/26/2014              | 3/1/2014 09:45       | <input type="checkbox"/>            |
| 14030008-22        | Trip Blank - 022514-12  | Water         |                   | 2/26/2014              | 3/1/2014 09:45       | <input checked="" type="checkbox"/> |

---

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Work Order:** 14030008

---

**Case Narrative**

Two sets of Trip Blanks were received but only one set was listed on the chain of custody. The lab analyzed both samples. Sample MW-27 had 1 of 3 vials broken in the lab. Also, sample MW-29 had 1 of 2 amber 1 liter bottles broken in the lab. Sufficient sample volumes remained for analysis.

Sample received outside method holding time for pH. pH is an immediate test. Sample results are flagged with an "H" qualifier.

Batch 77152, Semivolatile Organics by method 8270, Sample MW-18 (14030008-01F): The surrogate recovery for 2-Fluorobiphenyl was outside of the control limits.

Batch 77235, Dissolved Metals by method 6020, Sample MW-29 (14030008-11D): MS and/or MSD recoveries for Calcium, Chromium and Sodium were outside of the control limits due to matrix interference. The LCS and DUP were within the control limits. Results were confirmed by re-analysis.

Batch 77152, Semivolatile Organics by method 8270, Sample MW-29 (14030008-11F): The analyte 3,3'-dichlorobenzidine did not meet precision criteria (%RPD). The associated LCS, MS and MSD recovered within acceptance criteria.

Batch R162237, Volatile Organics by method 8260, Sample 14021211-17A: MS/MSD are for an unrelated sample.

Batch R162271, Volatile Organics by method 8260, Sample MW-29 (14030008-11A): MS/MSD recoveries were outside control limits for almost all analytes and several analytes did not meet precision criteria (%RPD). The associated LCS recovered within acceptance criteria.

Batch R162903, Anions by method 300, Sample MW-29 (14030008-11E): MS/MSD recoveries were outside control limits for Chloride, Fluoride and Sulfate due to matrix interference. The associated LCS recovered within acceptance criteria.



# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-18  
**Collection Date:** 2/26/2014 03:35 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-01  
**Matrix:** GROUNDWATER

| Analyses                       | Result  | Qual | Report Limit       | Units | Dilution Factor          | Date Analyzed                      |
|--------------------------------|---------|------|--------------------|-------|--------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |         |      |                    |       |                          |                                    |
| Mercury                        | ND      |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: OFO<br>3/7/2014 01:54 PM  |
| <b>DISSOLVED METALS</b>        |         |      |                    |       |                          |                                    |
| Aluminum                       | 0.0213  |      | SW6020<br>0.0100   | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: SKS<br>3/10/2014 01:11 PM |
| Arsenic                        | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:11 PM                 |
| Barium                         | 0.0766  |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:11 PM                 |
| Boron                          | 0.244   |      | 0.0200             | mg/L  | 1                        | 3/10/2014 01:11 PM                 |
| Cadmium                        | ND      |      | 0.00200            | mg/L  | 1                        | 3/10/2014 01:11 PM                 |
| Calcium                        | 109     |      | 0.500              | mg/L  | 1                        | 3/10/2014 01:11 PM                 |
| Chromium                       | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:11 PM                 |
| Cobalt                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:11 PM                 |
| Copper                         | 0.0215  |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:11 PM                 |
| Iron                           | ND      |      | 0.200              | mg/L  | 1                        | 3/10/2014 01:11 PM                 |
| Lead                           | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:11 PM                 |
| Magnesium                      | 10.6    |      | 0.200              | mg/L  | 1                        | 3/10/2014 01:11 PM                 |
| Manganese                      | 0.0117  |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:11 PM                 |
| Molybdenum                     | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:11 PM                 |
| Nickel                         | 0.00681 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:11 PM                 |
| Potassium                      | 2.10    |      | 0.200              | mg/L  | 1                        | 3/10/2014 01:11 PM                 |
| Selenium                       | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:11 PM                 |
| Silver                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:11 PM                 |
| Sodium                         | 92.8    |      | 0.200              | mg/L  | 1                        | 3/10/2014 01:11 PM                 |
| Uranium                        | 0.00701 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:11 PM                 |
| Zinc                           | 0.0465  |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:11 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |         |      |                    |       |                          |                                    |
| 1,1'-Biphenyl                  | ND      |      | SW8270<br>0.20     | µg/L  | Prep Date: 3/4/2014<br>1 | Analyst: LG<br>3/6/2014 10:27 PM   |
| 1-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:27 PM                  |
| 2,4,5-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:27 PM                  |
| 2,4,6-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:27 PM                  |
| 2,4-Dichlorophenol             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:27 PM                  |
| 2,4-Dimethylphenol             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:27 PM                  |
| 2,4-Dinitrophenol              | ND      |      | 1.0                | µg/L  | 1                        | 3/6/2014 10:27 PM                  |
| 2,4-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:27 PM                  |
| 2,6-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:27 PM                  |
| 2-Chloronaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:27 PM                  |
| 2-Chlorophenol                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:27 PM                  |
| 2-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:27 PM                  |
| 2-Methylphenol                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:27 PM                  |
| 2-Nitroaniline                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:27 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-18  
**Collection Date:** 2/26/2014 03:35 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-01  
**Matrix:** GROUNDWATER

| Analyses                          | Result      | Qual | Report Limit | Units       | Dilution Factor | Date Analyzed     |
|-----------------------------------|-------------|------|--------------|-------------|-----------------|-------------------|
| 2-Nitrophenol                     | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| 3&4-Methylphenol                  | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| 3,3'-Dichlorobenzidine            | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| 3-Nitroaniline                    | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| 4,6-Dinitro-2-methylphenol        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| 4-Bromophenyl phenyl ether        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| 4-Chloro-3-methylphenol           | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| 4-Chloroaniline                   | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| 4-Chlorophenyl phenyl ether       | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| 4-Nitroaniline                    | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| 4-Nitrophenol                     | ND          |      | 1.0          | µg/L        | 1               | 3/6/2014 10:27 PM |
| Acenaphthene                      | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| Acenaphthylene                    | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| <b>Acetophenone</b>               | <b>0.23</b> |      | <b>0.20</b>  | <b>µg/L</b> | 1               | 3/6/2014 10:27 PM |
| Anthracene                        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| Atrazine                          | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| Benz(a)anthracene                 | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| Benzaldehyde                      | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| Benzo(a)pyrene                    | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| Benzo(b)fluoranthene              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| Benzo(g,h,i)perylene              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| Benzo(k)fluoranthene              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| Bis(2-chloroethoxy)methane        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| Bis(2-chloroethyl)ether           | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| Bis(2-chloroisopropyl)ether       | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>0.38</b> |      | <b>0.20</b>  | <b>µg/L</b> | 1               | 3/6/2014 10:27 PM |
| Butyl benzyl phthalate            | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| Caprolactam                       | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| Carbazole                         | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| Chrysene                          | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| Dibenz(a,h)anthracene             | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| Dibenzofuran                      | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| Diethyl phthalate                 | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| Dimethyl phthalate                | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| Di-n-butyl phthalate              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| Di-n-octyl phthalate              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| Fluoranthene                      | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| Fluorene                          | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| Hexachlorobenzene                 | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |
| Hexachlorobutadiene               | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:27 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-18  
**Collection Date:** 2/26/2014 03:35 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-01  
**Matrix:** GROUNDWATER

| Analyses                   | Result      | Qual | Report Limit  | Units       | Dilution Factor    | Date Analyzed            |
|----------------------------|-------------|------|---------------|-------------|--------------------|--------------------------|
| Hexachlorocyclopentadiene  | ND          |      | 0.20          | µg/L        | 1                  | 3/6/2014 10:27 PM        |
| Hexachloroethane           | ND          |      | 0.20          | µg/L        | 1                  | 3/6/2014 10:27 PM        |
| Indeno(1,2,3-cd)pyrene     | ND          |      | 0.20          | µg/L        | 1                  | 3/6/2014 10:27 PM        |
| Isophorone                 | ND          |      | 0.20          | µg/L        | 1                  | 3/6/2014 10:27 PM        |
| Naphthalene                | ND          |      | 0.20          | µg/L        | 1                  | 3/6/2014 10:27 PM        |
| Nitrobenzene               | ND          |      | 0.20          | µg/L        | 1                  | 3/6/2014 10:27 PM        |
| N-Nitrosodi-n-propylamine  | ND          |      | 0.20          | µg/L        | 1                  | 3/6/2014 10:27 PM        |
| N-Nitrosodiphenylamine     | ND          |      | 0.20          | µg/L        | 1                  | 3/6/2014 10:27 PM        |
| Pentachlorophenol          | ND          |      | 0.20          | µg/L        | 1                  | 3/6/2014 10:27 PM        |
| Phenanthrene               | ND          |      | 0.20          | µg/L        | 1                  | 3/6/2014 10:27 PM        |
| <b>Phenol</b>              | <b>0.56</b> |      | <b>0.20</b>   | <b>µg/L</b> | <b>1</b>           | <b>3/6/2014 10:27 PM</b> |
| Pyrene                     | ND          |      | 0.20          | µg/L        | 1                  | 3/6/2014 10:27 PM        |
| Surr: 2,4,6-Tribromophenol | 52.8        |      | 34-129        | %REC        | 1                  | 3/6/2014 10:27 PM        |
| Surr: 2-Fluorobiphenyl     | 39.2        | S    | 40-125        | %REC        | 1                  | 3/6/2014 10:27 PM        |
| Surr: 2-Fluorophenol       | 39.6        |      | 20-120        | %REC        | 1                  | 3/6/2014 10:27 PM        |
| Surr: 4-Terphenyl-d14      | 51.5        |      | 40-135        | %REC        | 1                  | 3/6/2014 10:27 PM        |
| Surr: Nitrobenzene-d5      | 41.2        |      | 41-120        | %REC        | 1                  | 3/6/2014 10:27 PM        |
| Surr: Phenol-d6            | 37.7        |      | 20-120        | %REC        | 1                  | 3/6/2014 10:27 PM        |
| <b>VOLATILES - SW8260C</b> |             |      | <b>SW8260</b> |             | <b>Analyst: PC</b> |                          |
| 1,1,1-Trichloroethane      | ND          |      | 0.0050        | mg/L        | 1                  | 3/3/2014 09:51 PM        |
| 1,1,2,2-Tetrachloroethane  | ND          |      | 0.0050        | mg/L        | 1                  | 3/3/2014 09:51 PM        |
| 1,1,2-Trichloroethane      | ND          |      | 0.0050        | mg/L        | 1                  | 3/3/2014 09:51 PM        |
| 1,1-Dichloroethane         | ND          |      | 0.0050        | mg/L        | 1                  | 3/3/2014 09:51 PM        |
| 1,1-Dichloroethene         | ND          |      | 0.0050        | mg/L        | 1                  | 3/3/2014 09:51 PM        |
| 1,2,4-Trimethylbenzene     | ND          |      | 0.0050        | mg/L        | 1                  | 3/3/2014 09:51 PM        |
| 1,2-Dibromoethane          | ND          |      | 0.0050        | mg/L        | 1                  | 3/3/2014 09:51 PM        |
| 1,2-Dichloroethane         | ND          |      | 0.0050        | mg/L        | 1                  | 3/3/2014 09:51 PM        |
| 1,2-Dichloropropane        | ND          |      | 0.0050        | mg/L        | 1                  | 3/3/2014 09:51 PM        |
| 1,3,5-Trimethylbenzene     | ND          |      | 0.0050        | mg/L        | 1                  | 3/3/2014 09:51 PM        |
| 2-Butanone                 | ND          |      | 0.010         | mg/L        | 1                  | 3/3/2014 09:51 PM        |
| 2-Hexanone                 | ND          |      | 0.010         | mg/L        | 1                  | 3/3/2014 09:51 PM        |
| 4-Isopropyltoluene         | ND          |      | 0.0050        | mg/L        | 1                  | 3/3/2014 09:51 PM        |
| 4-Methyl-2-pentanone       | ND          |      | 0.010         | mg/L        | 1                  | 3/3/2014 09:51 PM        |
| Acetone                    | ND          |      | 0.010         | mg/L        | 1                  | 3/3/2014 09:51 PM        |
| Benzene                    | ND          |      | 0.0050        | mg/L        | 1                  | 3/3/2014 09:51 PM        |
| Bromodichloromethane       | ND          |      | 0.0050        | mg/L        | 1                  | 3/3/2014 09:51 PM        |
| Bromoform                  | ND          |      | 0.0050        | mg/L        | 1                  | 3/3/2014 09:51 PM        |
| Bromomethane               | ND          |      | 0.0050        | mg/L        | 1                  | 3/3/2014 09:51 PM        |
| Carbon disulfide           | ND          |      | 0.010         | mg/L        | 1                  | 3/3/2014 09:51 PM        |
| Carbon tetrachloride       | ND          |      | 0.0050        | mg/L        | 1                  | 3/3/2014 09:51 PM        |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-18  
**Collection Date:** 2/26/2014 03:35 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-01  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed      |
|------------------------------------|--------|------|----------------|-------|-----------------|--------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 09:51 PM  |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 09:51 PM  |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 09:51 PM  |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 09:51 PM  |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 09:51 PM  |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 09:51 PM  |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 09:51 PM  |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 09:51 PM  |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 09:51 PM  |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/3/2014 09:51 PM  |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 09:51 PM  |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/3/2014 09:51 PM  |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 09:51 PM  |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 09:51 PM  |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 09:51 PM  |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 09:51 PM  |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 09:51 PM  |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 09:51 PM  |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 09:51 PM  |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 09:51 PM  |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 09:51 PM  |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 09:51 PM  |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/3/2014 09:51 PM  |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/3/2014 09:51 PM  |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/3/2014 09:51 PM  |
| Surr: 1,2-Dichloroethane-d4        | 99.5   |      | 70-125         | %REC  | 1               | 3/3/2014 09:51 PM  |
| Surr: 4-Bromofluorobenzene         | 96.4   |      | 72-125         | %REC  | 1               | 3/3/2014 09:51 PM  |
| Surr: Dibromofluoromethane         | 98.4   |      | 71-125         | %REC  | 1               | 3/3/2014 09:51 PM  |
| Surr: Toluene-d8                   | 94.2   |      | 75-125         | %REC  | 1               | 3/3/2014 09:51 PM  |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       | Analyst: JKP    |                    |
| Chloride                           | 145    |      | 2.50           | mg/L  | 5               | 3/14/2014 11:21 AM |
| Fluoride                           | 0.514  |      | 0.100          | mg/L  | 1               | 3/14/2014 01:58 AM |
| Nitrogen, Nitrate (As N)           | 4.36   |      | 0.500          | mg/L  | 5               | 3/16/2014 04:18 PM |
| Sulfate                            | 89.1   |      | 0.500          | mg/L  | 1               | 3/14/2014 01:58 AM |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       | Analyst: PPM    |                    |
| Alkalinity, Bicarbonate (As CaCO3) | 377    |      | 10.0           | mg/L  | 1               | 3/4/2014 10:33 AM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 10:33 AM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 10:33 AM  |
| Alkalinity, Total (As CaCO3)       | 377    |      | 10.0           | mg/L  | 1               | 3/4/2014 10:33 AM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental**

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-18  
**Collection Date:** 2/26/2014 03:35 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-01  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 1,180  |      | 5.00              | µmhos/cm | 1               | 3/4/2014 10:33 AM   |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 6.52   | H    | 0.100             | pH Units | 1               | 3/4/2014 10:33 AM   |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 680    |      | 10.0              | mg/L     | 1               | 3/5/2014 10:40 AM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-19  
**Collection Date:** 2/26/2014 01:15 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-02  
**Matrix:** GROUNDWATER

| Analyses                       | Result | Qual | Report Limit       | Units | Dilution Factor          | Date Analyzed                      |
|--------------------------------|--------|------|--------------------|-------|--------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |        |      |                    |       |                          |                                    |
| Mercury                        | ND     |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: OFO<br>3/7/2014 01:55 PM  |
| <b>DISSOLVED METALS</b>        |        |      |                    |       |                          |                                    |
| Aluminum                       | 0.0120 |      | SW6020<br>0.0100   | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: SKS<br>3/10/2014 01:19 PM |
| Arsenic                        | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:19 PM                 |
| Barium                         | 0.0793 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:19 PM                 |
| Boron                          | 0.227  |      | 0.0200             | mg/L  | 1                        | 3/10/2014 01:19 PM                 |
| Cadmium                        | ND     |      | 0.00200            | mg/L  | 1                        | 3/10/2014 01:19 PM                 |
| Calcium                        | 137    |      | 0.500              | mg/L  | 1                        | 3/10/2014 01:19 PM                 |
| Chromium                       | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:19 PM                 |
| Cobalt                         | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:19 PM                 |
| Copper                         | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:19 PM                 |
| Iron                           | ND     |      | 0.200              | mg/L  | 1                        | 3/10/2014 01:19 PM                 |
| Lead                           | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:19 PM                 |
| Magnesium                      | 13.5   |      | 0.200              | mg/L  | 1                        | 3/10/2014 01:19 PM                 |
| Manganese                      | 0.0157 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:19 PM                 |
| Molybdenum                     | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:19 PM                 |
| Nickel                         | 0.0122 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:19 PM                 |
| Potassium                      | 2.89   |      | 0.200              | mg/L  | 1                        | 3/10/2014 01:19 PM                 |
| Selenium                       | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:19 PM                 |
| Silver                         | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:19 PM                 |
| Sodium                         | 109    |      | 0.200              | mg/L  | 1                        | 3/10/2014 01:19 PM                 |
| Uranium                        | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:19 PM                 |
| Zinc                           | 0.0333 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:19 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |        |      |                    |       |                          |                                    |
| 1,1'-Biphenyl                  | ND     |      | SW8270<br>0.20     | µg/L  | Prep Date: 3/4/2014<br>1 | Analyst: LG<br>3/6/2014 10:46 PM   |
| 1-Methylnaphthalene            | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:46 PM                  |
| 2,4,5-Trichlorophenol          | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:46 PM                  |
| 2,4,6-Trichlorophenol          | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:46 PM                  |
| 2,4-Dichlorophenol             | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:46 PM                  |
| 2,4-Dimethylphenol             | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:46 PM                  |
| 2,4-Dinitrophenol              | ND     |      | 1.0                | µg/L  | 1                        | 3/6/2014 10:46 PM                  |
| 2,4-Dinitrotoluene             | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:46 PM                  |
| 2,6-Dinitrotoluene             | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:46 PM                  |
| 2-Chloronaphthalene            | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:46 PM                  |
| 2-Chlorophenol                 | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:46 PM                  |
| 2-Methylnaphthalene            | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:46 PM                  |
| 2-Methylphenol                 | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:46 PM                  |
| 2-Nitroaniline                 | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:46 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-19  
**Collection Date:** 2/26/2014 01:15 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-02  
**Matrix:** GROUNDWATER

| Analyses                    | Result      | Qual | Report Limit | Units       | Dilution Factor | Date Analyzed            |
|-----------------------------|-------------|------|--------------|-------------|-----------------|--------------------------|
| 2-Nitrophenol               | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| 3&4-Methylphenol            | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| 3,3'-Dichlorobenzidine      | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| 3-Nitroaniline              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| 4,6-Dinitro-2-methylphenol  | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| 4-Bromophenyl phenyl ether  | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| 4-Chloro-3-methylphenol     | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| 4-Chloroaniline             | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| 4-Chlorophenyl phenyl ether | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| 4-Nitroaniline              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| 4-Nitrophenol               | ND          |      | 1.0          | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Acenaphthene                | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Acenaphthylene              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Acetophenone                | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Anthracene                  | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Atrazine                    | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Benz(a)anthracene           | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Benzaldehyde                | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Benzo(a)pyrene              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Benzo(b)fluoranthene        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Benzo(g,h,i)perylene        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Benzo(k)fluoranthene        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Bis(2-chloroethoxy)methane  | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Bis(2-chloroethyl)ether     | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Bis(2-chloroisopropyl)ether | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Bis(2-ethylhexyl)phthalate  | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Butyl benzyl phthalate      | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Caprolactam                 | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Carbazole                   | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Chrysene                    | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Dibenz(a,h)anthracene       | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Dibenzofuran                | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Diethyl phthalate           | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Dimethyl phthalate          | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Di-n-butyl phthalate        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| <b>Di-n-octyl phthalate</b> | <b>0.25</b> |      | <b>0.20</b>  | <b>µg/L</b> | <b>1</b>        | <b>3/6/2014 10:46 PM</b> |
| Fluoranthene                | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Fluorene                    | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Hexachlorobenzene           | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |
| Hexachlorobutadiene         | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 10:46 PM        |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-19  
**Collection Date:** 2/26/2014 01:15 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-02  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 10:46 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 10:46 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 10:46 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 10:46 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 10:46 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 10:46 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 10:46 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 10:46 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 10:46 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 10:46 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 10:46 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 10:46 PM |
| Surr: 2,4,6-Tribromophenol | 78.5   |      | 34-129        | %REC  | 1                  | 3/6/2014 10:46 PM |
| Surr: 2-Fluorobiphenyl     | 72.7   |      | 40-125        | %REC  | 1                  | 3/6/2014 10:46 PM |
| Surr: 2-Fluorophenol       | 62.5   |      | 20-120        | %REC  | 1                  | 3/6/2014 10:46 PM |
| Surr: 4-Terphenyl-d14      | 71.9   |      | 40-135        | %REC  | 1                  | 3/6/2014 10:46 PM |
| Surr: Nitrobenzene-d5      | 70.1   |      | 41-120        | %REC  | 1                  | 3/6/2014 10:46 PM |
| Surr: Phenol-d6            | 61.9   |      | 20-120        | %REC  | 1                  | 3/6/2014 10:46 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:20 AM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:20 AM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:20 AM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:20 AM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:20 AM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:20 AM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:20 AM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:20 AM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:20 AM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:20 AM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 04:20 AM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 04:20 AM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:20 AM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 04:20 AM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 04:20 AM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:20 AM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:20 AM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:20 AM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:20 AM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 04:20 AM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:20 AM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-19  
**Collection Date:** 2/26/2014 01:15 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-02  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed      |
|------------------------------------|--------|------|----------------|-------|-----------------|--------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:20 AM  |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:20 AM  |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:20 AM  |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:20 AM  |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:20 AM  |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:20 AM  |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:20 AM  |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:20 AM  |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:20 AM  |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 04:20 AM  |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:20 AM  |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 04:20 AM  |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:20 AM  |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:20 AM  |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:20 AM  |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:20 AM  |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:20 AM  |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:20 AM  |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:20 AM  |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:20 AM  |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:20 AM  |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:20 AM  |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:20 AM  |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/4/2014 04:20 AM  |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/4/2014 04:20 AM  |
| Surr: 1,2-Dichloroethane-d4        | 96.2   |      | 70-125         | %REC  | 1               | 3/4/2014 04:20 AM  |
| Surr: 4-Bromofluorobenzene         | 95.9   |      | 72-125         | %REC  | 1               | 3/4/2014 04:20 AM  |
| Surr: Dibromofluoromethane         | 100    |      | 71-125         | %REC  | 1               | 3/4/2014 04:20 AM  |
| Surr: Toluene-d8                   | 93.1   |      | 75-125         | %REC  | 1               | 3/4/2014 04:20 AM  |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       | Analyst: JKP    |                    |
| Chloride                           | 264    |      | 2.50           | mg/L  | 5               | 3/14/2014 11:36 AM |
| Fluoride                           | 0.576  |      | 0.100          | mg/L  | 1               | 3/14/2014 02:12 AM |
| Nitrogen, Nitrate (As N)           | 2.34   |      | 0.500          | mg/L  | 5               | 3/16/2014 04:44 PM |
| Sulfate                            | 72.3   |      | 0.500          | mg/L  | 1               | 3/14/2014 02:12 AM |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       | Analyst: PPM    |                    |
| Alkalinity, Bicarbonate (As CaCO3) | 240    |      | 10.0           | mg/L  | 1               | 3/4/2014 10:38 AM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 10:38 AM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 10:38 AM  |
| Alkalinity, Total (As CaCO3)       | 240    |      | 10.0           | mg/L  | 1               | 3/4/2014 10:38 AM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental**

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-19  
**Collection Date:** 2/26/2014 01:15 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-02  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 1,400  |      | 5.00              | µmhos/cm | 1               | 3/4/2014 10:38 AM   |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 6.75   | H    | 0.100             | pH Units | 1               | 3/4/2014 10:38 AM   |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 850    |      | 10.0              | mg/L     | 1               | 3/5/2014 10:40 AM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-25  
**Collection Date:** 2/26/2014 05:12 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-03  
**Matrix:** GROUNDWATER

| Analyses                       | Result  | Qual | Report Limit       | Units | Dilution Factor          | Date Analyzed                      |
|--------------------------------|---------|------|--------------------|-------|--------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |         |      |                    |       |                          |                                    |
| Mercury                        | ND      |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: OFO<br>3/7/2014 01:57 PM  |
| <b>DISSOLVED METALS</b>        |         |      |                    |       |                          |                                    |
| Aluminum                       | ND      |      | SW6020<br>0.0100   | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: SKS<br>3/10/2014 01:21 PM |
| Arsenic                        | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:21 PM                 |
| Barium                         | 0.220   |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:21 PM                 |
| Boron                          | 0.231   |      | 0.0200             | mg/L  | 1                        | 3/10/2014 01:21 PM                 |
| Cadmium                        | ND      |      | 0.00200            | mg/L  | 1                        | 3/10/2014 01:21 PM                 |
| Calcium                        | 202     |      | 5.00               | mg/L  | 10                       | 3/11/2014 03:53 PM                 |
| Chromium                       | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:21 PM                 |
| Cobalt                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:21 PM                 |
| Copper                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:21 PM                 |
| Iron                           | ND      |      | 0.200              | mg/L  | 1                        | 3/10/2014 01:21 PM                 |
| Lead                           | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:21 PM                 |
| Magnesium                      | 22.5    |      | 0.200              | mg/L  | 1                        | 3/10/2014 01:21 PM                 |
| Manganese                      | 0.00881 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:21 PM                 |
| Molybdenum                     | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:21 PM                 |
| Nickel                         | 0.00775 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:21 PM                 |
| Potassium                      | 4.37    |      | 0.200              | mg/L  | 1                        | 3/10/2014 01:21 PM                 |
| Selenium                       | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:21 PM                 |
| Silver                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:21 PM                 |
| Sodium                         | 109     |      | 0.200              | mg/L  | 1                        | 3/10/2014 01:21 PM                 |
| Uranium                        | 0.00724 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:21 PM                 |
| Zinc                           | 0.0210  |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:21 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |         |      |                    |       |                          |                                    |
| 1,1'-Biphenyl                  | ND      |      | SW8270<br>0.20     | µg/L  | Prep Date: 3/4/2014<br>1 | Analyst: LG<br>3/5/2014 10:59 PM   |
| 1-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/5/2014 10:59 PM                  |
| 2,4,5-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                        | 3/5/2014 10:59 PM                  |
| 2,4,6-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                        | 3/5/2014 10:59 PM                  |
| 2,4-Dichlorophenol             | ND      |      | 0.20               | µg/L  | 1                        | 3/5/2014 10:59 PM                  |
| 2,4-Dimethylphenol             | ND      |      | 0.20               | µg/L  | 1                        | 3/5/2014 10:59 PM                  |
| 2,4-Dinitrophenol              | ND      |      | 1.0                | µg/L  | 1                        | 3/5/2014 10:59 PM                  |
| 2,4-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                        | 3/5/2014 10:59 PM                  |
| 2,6-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                        | 3/5/2014 10:59 PM                  |
| 2-Chloronaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/5/2014 10:59 PM                  |
| 2-Chlorophenol                 | ND      |      | 0.20               | µg/L  | 1                        | 3/5/2014 10:59 PM                  |
| 2-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/5/2014 10:59 PM                  |
| 2-Methylphenol                 | ND      |      | 0.20               | µg/L  | 1                        | 3/5/2014 10:59 PM                  |
| 2-Nitroaniline                 | ND      |      | 0.20               | µg/L  | 1                        | 3/5/2014 10:59 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-25  
**Collection Date:** 2/26/2014 05:12 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-03  
**Matrix:** GROUNDWATER

| Analyses                    | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed     |
|-----------------------------|--------|------|--------------|-------|-----------------|-------------------|
| 2-Nitrophenol               | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| 3&4-Methylphenol            | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| 3,3'-Dichlorobenzidine      | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| 3-Nitroaniline              | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| 4,6-Dinitro-2-methylphenol  | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| 4-Bromophenyl phenyl ether  | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| 4-Chloro-3-methylphenol     | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| 4-Chloroaniline             | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| 4-Chlorophenyl phenyl ether | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| 4-Nitroaniline              | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| 4-Nitrophenol               | ND     |      | 1.0          | µg/L  | 1               | 3/5/2014 10:59 PM |
| Acenaphthene                | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Acenaphthylene              | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Acetophenone                | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Anthracene                  | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Atrazine                    | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Benz(a)anthracene           | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Benzaldehyde                | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Benzo(a)pyrene              | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Benzo(b)fluoranthene        | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Benzo(g,h,i)perylene        | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Benzo(k)fluoranthene        | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Bis(2-chloroethoxy)methane  | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Bis(2-chloroethyl)ether     | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Bis(2-chloroisopropyl)ether | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Bis(2-ethylhexyl)phthalate  | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Butyl benzyl phthalate      | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Caprolactam                 | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Carbazole                   | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Chrysene                    | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Dibenz(a,h)anthracene       | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Dibenzofuran                | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Diethyl phthalate           | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Dimethyl phthalate          | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Di-n-butyl phthalate        | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Di-n-octyl phthalate        | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Fluoranthene                | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Fluorene                    | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Hexachlorobenzene           | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |
| Hexachlorobutadiene         | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 10:59 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-25  
**Collection Date:** 2/26/2014 05:12 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-03  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/5/2014 10:59 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/5/2014 10:59 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/5/2014 10:59 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/5/2014 10:59 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/5/2014 10:59 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/5/2014 10:59 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/5/2014 10:59 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/5/2014 10:59 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/5/2014 10:59 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/5/2014 10:59 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/5/2014 10:59 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/5/2014 10:59 PM |
| Surr: 2,4,6-Tribromophenol | 78.1   |      | 34-129        | %REC  | 1                  | 3/5/2014 10:59 PM |
| Surr: 2-Fluorobiphenyl     | 74.5   |      | 40-125        | %REC  | 1                  | 3/5/2014 10:59 PM |
| Surr: 2-Fluorophenol       | 70.4   |      | 20-120        | %REC  | 1                  | 3/5/2014 10:59 PM |
| Surr: 4-Terphenyl-d14      | 74.4   |      | 40-135        | %REC  | 1                  | 3/5/2014 10:59 PM |
| Surr: Nitrobenzene-d5      | 71.5   |      | 41-120        | %REC  | 1                  | 3/5/2014 10:59 PM |
| Surr: Phenol-d6            | 66.1   |      | 20-120        | %REC  | 1                  | 3/5/2014 10:59 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:46 AM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:46 AM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:46 AM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:46 AM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:46 AM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:46 AM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:46 AM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:46 AM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:46 AM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:46 AM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 04:46 AM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 04:46 AM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:46 AM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 04:46 AM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 04:46 AM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:46 AM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:46 AM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:46 AM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:46 AM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 04:46 AM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 04:46 AM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

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Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-25  
**Collection Date:** 2/26/2014 05:12 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-03  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed      |
|------------------------------------|--------|------|----------------|-------|-----------------|--------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:46 AM  |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:46 AM  |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:46 AM  |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:46 AM  |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:46 AM  |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:46 AM  |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:46 AM  |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:46 AM  |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:46 AM  |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 04:46 AM  |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:46 AM  |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 04:46 AM  |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:46 AM  |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:46 AM  |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:46 AM  |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:46 AM  |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:46 AM  |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:46 AM  |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:46 AM  |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:46 AM  |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:46 AM  |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:46 AM  |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 04:46 AM  |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/4/2014 04:46 AM  |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/4/2014 04:46 AM  |
| Surr: 1,2-Dichloroethane-d4        | 96.0   |      | 70-125         | %REC  | 1               | 3/4/2014 04:46 AM  |
| Surr: 4-Bromofluorobenzene         | 95.8   |      | 72-125         | %REC  | 1               | 3/4/2014 04:46 AM  |
| Surr: Dibromofluoromethane         | 97.0   |      | 71-125         | %REC  | 1               | 3/4/2014 04:46 AM  |
| Surr: Toluene-d8                   | 93.8   |      | 75-125         | %REC  | 1               | 3/4/2014 04:46 AM  |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       | Analyst: JKP    |                    |
| Chloride                           | 293    |      | 2.50           | mg/L  | 5               | 3/14/2014 11:51 AM |
| Fluoride                           | 0.476  |      | 0.100          | mg/L  | 1               | 3/14/2014 02:27 AM |
| Nitrogen, Nitrate (As N)           | 2.98   |      | 0.500          | mg/L  | 5               | 3/16/2014 05:10 PM |
| Sulfate                            | 69.3   |      | 0.500          | mg/L  | 1               | 3/14/2014 02:27 AM |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       | Analyst: PPM    |                    |
| Alkalinity, Bicarbonate (As CaCO3) | 961    |      | 10.0           | mg/L  | 1               | 3/4/2014 10:55 AM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 10:55 AM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 10:55 AM  |
| Alkalinity, Total (As CaCO3)       | 961    |      | 10.0           | mg/L  | 1               | 3/4/2014 10:55 AM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental**

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-25  
**Collection Date:** 2/26/2014 05:12 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-03  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 1,770  |      | 5.00              | µmhos/cm | 1               | 3/4/2014 10:55 AM   |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 7.04   | H    | 0.100             | pH Units | 1               | 3/4/2014 10:55 AM   |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 1,100  |      | 10.0              | mg/L     | 1               | 3/5/2014 10:40 AM   |

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# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** Dup-3  
**Collection Date:** 2/26/2014 01:15 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-04  
**Matrix:** GROUNDWATER

| Analyses                       | Result | Qual | Report Limit       | Units | Dilution Factor          | Date Analyzed                      |
|--------------------------------|--------|------|--------------------|-------|--------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |        |      |                    |       |                          |                                    |
| Mercury                        | ND     |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: OFO<br>3/7/2014 01:59 PM  |
| <b>DISSOLVED METALS</b>        |        |      |                    |       |                          |                                    |
| Aluminum                       | 0.0435 |      | SW6020<br>0.0100   | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: SKS<br>3/10/2014 01:24 PM |
| Arsenic                        | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:24 PM                 |
| Barium                         | 0.0753 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:24 PM                 |
| Boron                          | 0.204  |      | 0.0200             | mg/L  | 1                        | 3/10/2014 01:24 PM                 |
| Cadmium                        | ND     |      | 0.00200            | mg/L  | 1                        | 3/10/2014 01:24 PM                 |
| Calcium                        | 130    |      | 0.500              | mg/L  | 1                        | 3/10/2014 01:24 PM                 |
| Chromium                       | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:24 PM                 |
| Cobalt                         | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:24 PM                 |
| Copper                         | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:24 PM                 |
| Iron                           | ND     |      | 0.200              | mg/L  | 1                        | 3/10/2014 01:24 PM                 |
| Lead                           | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:24 PM                 |
| Magnesium                      | 13.9   |      | 0.200              | mg/L  | 1                        | 3/10/2014 01:24 PM                 |
| Manganese                      | 0.0165 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:24 PM                 |
| Molybdenum                     | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:24 PM                 |
| Nickel                         | 0.0123 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:24 PM                 |
| Potassium                      | 2.66   |      | 0.200              | mg/L  | 1                        | 3/10/2014 01:24 PM                 |
| Selenium                       | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:24 PM                 |
| Silver                         | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:24 PM                 |
| Sodium                         | 115    |      | 0.200              | mg/L  | 1                        | 3/10/2014 01:24 PM                 |
| Uranium                        | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:24 PM                 |
| Zinc                           | 0.0350 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:24 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |        |      |                    |       |                          |                                    |
| 1,1'-Biphenyl                  | ND     |      | SW8270<br>0.20     | µg/L  | Prep Date: 3/4/2014<br>1 | Analyst: LG<br>3/5/2014 11:18 PM   |
| 1-Methylnaphthalene            | ND     |      | 0.20               | µg/L  | 1                        | 3/5/2014 11:18 PM                  |
| 2,4,5-Trichlorophenol          | ND     |      | 0.20               | µg/L  | 1                        | 3/5/2014 11:18 PM                  |
| 2,4,6-Trichlorophenol          | ND     |      | 0.20               | µg/L  | 1                        | 3/5/2014 11:18 PM                  |
| 2,4-Dichlorophenol             | ND     |      | 0.20               | µg/L  | 1                        | 3/5/2014 11:18 PM                  |
| 2,4-Dimethylphenol             | ND     |      | 0.20               | µg/L  | 1                        | 3/5/2014 11:18 PM                  |
| 2,4-Dinitrophenol              | ND     |      | 1.0                | µg/L  | 1                        | 3/5/2014 11:18 PM                  |
| 2,4-Dinitrotoluene             | ND     |      | 0.20               | µg/L  | 1                        | 3/5/2014 11:18 PM                  |
| 2,6-Dinitrotoluene             | ND     |      | 0.20               | µg/L  | 1                        | 3/5/2014 11:18 PM                  |
| 2-Chloronaphthalene            | ND     |      | 0.20               | µg/L  | 1                        | 3/5/2014 11:18 PM                  |
| 2-Chlorophenol                 | ND     |      | 0.20               | µg/L  | 1                        | 3/5/2014 11:18 PM                  |
| 2-Methylnaphthalene            | ND     |      | 0.20               | µg/L  | 1                        | 3/5/2014 11:18 PM                  |
| 2-Methylphenol                 | ND     |      | 0.20               | µg/L  | 1                        | 3/5/2014 11:18 PM                  |
| 2-Nitroaniline                 | ND     |      | 0.20               | µg/L  | 1                        | 3/5/2014 11:18 PM                  |

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Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** Dup-3  
**Collection Date:** 2/26/2014 01:15 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-04  
**Matrix:** GROUNDWATER

| Analyses                    | Result      | Qual | Report Limit | Units       | Dilution Factor | Date Analyzed            |
|-----------------------------|-------------|------|--------------|-------------|-----------------|--------------------------|
| 2-Nitrophenol               | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| 3&4-Methylphenol            | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| 3,3'-Dichlorobenzidine      | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| 3-Nitroaniline              | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| 4,6-Dinitro-2-methylphenol  | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| 4-Bromophenyl phenyl ether  | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| 4-Chloro-3-methylphenol     | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| 4-Chloroaniline             | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| 4-Chlorophenyl phenyl ether | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| 4-Nitroaniline              | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| 4-Nitrophenol               | ND          |      | 1.0          | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Acenaphthene                | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Acenaphthylene              | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Acetophenone                | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Anthracene                  | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Atrazine                    | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Benz(a)anthracene           | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Benzaldehyde                | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Benzo(a)pyrene              | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Benzo(b)fluoranthene        | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Benzo(g,h,i)perylene        | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Benzo(k)fluoranthene        | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Bis(2-chloroethoxy)methane  | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Bis(2-chloroethyl)ether     | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Bis(2-chloroisopropyl)ether | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Bis(2-ethylhexyl)phthalate  | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Butyl benzyl phthalate      | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Caprolactam                 | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Carbazole                   | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Chrysene                    | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Dibenz(a,h)anthracene       | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Dibenzofuran                | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Diethyl phthalate           | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Dimethyl phthalate          | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Di-n-butyl phthalate        | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| <b>Di-n-octyl phthalate</b> | <b>0.48</b> |      | <b>0.20</b>  | <b>µg/L</b> | <b>1</b>        | <b>3/5/2014 11:18 PM</b> |
| Fluoranthene                | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Fluorene                    | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Hexachlorobenzene           | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |
| Hexachlorobutadiene         | ND          |      | 0.20         | µg/L        | 1               | 3/5/2014 11:18 PM        |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** Dup-3  
**Collection Date:** 2/26/2014 01:15 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-04  
**Matrix:** GROUNDWATER

| Analyses                   | Result      | Qual | Report Limit  | Units       | Dilution Factor    | Date Analyzed     |
|----------------------------|-------------|------|---------------|-------------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND          |      | 0.20          | µg/L        | 1                  | 3/5/2014 11:18 PM |
| Hexachloroethane           | ND          |      | 0.20          | µg/L        | 1                  | 3/5/2014 11:18 PM |
| Indeno(1,2,3-cd)pyrene     | ND          |      | 0.20          | µg/L        | 1                  | 3/5/2014 11:18 PM |
| Isophorone                 | ND          |      | 0.20          | µg/L        | 1                  | 3/5/2014 11:18 PM |
| Naphthalene                | ND          |      | 0.20          | µg/L        | 1                  | 3/5/2014 11:18 PM |
| Nitrobenzene               | ND          |      | 0.20          | µg/L        | 1                  | 3/5/2014 11:18 PM |
| N-Nitrosodi-n-propylamine  | ND          |      | 0.20          | µg/L        | 1                  | 3/5/2014 11:18 PM |
| N-Nitrosodiphenylamine     | ND          |      | 0.20          | µg/L        | 1                  | 3/5/2014 11:18 PM |
| Pentachlorophenol          | ND          |      | 0.20          | µg/L        | 1                  | 3/5/2014 11:18 PM |
| Phenanthrene               | ND          |      | 0.20          | µg/L        | 1                  | 3/5/2014 11:18 PM |
| <b>Phenol</b>              | <b>0.34</b> |      | <b>0.20</b>   | <b>µg/L</b> | 1                  | 3/5/2014 11:18 PM |
| Pyrene                     | ND          |      | 0.20          | µg/L        | 1                  | 3/5/2014 11:18 PM |
| Surr: 2,4,6-Tribromophenol | 51.6        |      | 34-129        | %REC        | 1                  | 3/5/2014 11:18 PM |
| Surr: 2-Fluorobiphenyl     | 42.0        |      | 40-125        | %REC        | 1                  | 3/5/2014 11:18 PM |
| Surr: 2-Fluorophenol       | 42.8        |      | 20-120        | %REC        | 1                  | 3/5/2014 11:18 PM |
| Surr: 4-Terphenyl-d14      | 51.3        |      | 40-135        | %REC        | 1                  | 3/5/2014 11:18 PM |
| Surr: Nitrobenzene-d5      | 45.2        |      | 41-120        | %REC        | 1                  | 3/5/2014 11:18 PM |
| Surr: Phenol-d6            | 41.4        |      | 20-120        | %REC        | 1                  | 3/5/2014 11:18 PM |
| <b>VOLATILES - SW8260C</b> |             |      | <b>SW8260</b> |             | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 05:11 AM |
| 1,1,2,2-Tetrachloroethane  | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 05:11 AM |
| 1,1,2-Trichloroethane      | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 05:11 AM |
| 1,1-Dichloroethane         | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 05:11 AM |
| 1,1-Dichloroethene         | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 05:11 AM |
| 1,2,4-Trimethylbenzene     | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 05:11 AM |
| 1,2-Dibromoethane          | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 05:11 AM |
| 1,2-Dichloroethane         | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 05:11 AM |
| 1,2-Dichloropropane        | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 05:11 AM |
| 1,3,5-Trimethylbenzene     | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 05:11 AM |
| 2-Butanone                 | ND          |      | 0.010         | mg/L        | 1                  | 3/4/2014 05:11 AM |
| 2-Hexanone                 | ND          |      | 0.010         | mg/L        | 1                  | 3/4/2014 05:11 AM |
| 4-Isopropyltoluene         | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 05:11 AM |
| 4-Methyl-2-pentanone       | ND          |      | 0.010         | mg/L        | 1                  | 3/4/2014 05:11 AM |
| Acetone                    | ND          |      | 0.010         | mg/L        | 1                  | 3/4/2014 05:11 AM |
| Benzene                    | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 05:11 AM |
| Bromodichloromethane       | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 05:11 AM |
| Bromoform                  | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 05:11 AM |
| Bromomethane               | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 05:11 AM |
| Carbon disulfide           | ND          |      | 0.010         | mg/L        | 1                  | 3/4/2014 05:11 AM |
| Carbon tetrachloride       | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 05:11 AM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** Dup-3  
**Collection Date:** 2/26/2014 01:15 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-04  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed      |
|------------------------------------|--------|------|----------------|-------|-----------------|--------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:11 AM  |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:11 AM  |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:11 AM  |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:11 AM  |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:11 AM  |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:11 AM  |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:11 AM  |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:11 AM  |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:11 AM  |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 05:11 AM  |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:11 AM  |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 05:11 AM  |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:11 AM  |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:11 AM  |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:11 AM  |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:11 AM  |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:11 AM  |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:11 AM  |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:11 AM  |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:11 AM  |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:11 AM  |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:11 AM  |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:11 AM  |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/4/2014 05:11 AM  |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/4/2014 05:11 AM  |
| Surr: 1,2-Dichloroethane-d4        | 98.1   |      | 70-125         | %REC  | 1               | 3/4/2014 05:11 AM  |
| Surr: 4-Bromofluorobenzene         | 95.8   |      | 72-125         | %REC  | 1               | 3/4/2014 05:11 AM  |
| Surr: Dibromofluoromethane         | 101    |      | 71-125         | %REC  | 1               | 3/4/2014 05:11 AM  |
| Surr: Toluene-d8                   | 92.8   |      | 75-125         | %REC  | 1               | 3/4/2014 05:11 AM  |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       | Analyst: JKP    |                    |
| Chloride                           | 288    |      | 2.50           | mg/L  | 5               | 3/14/2014 12:05 PM |
| Fluoride                           | 0.555  |      | 0.100          | mg/L  | 1               | 3/14/2014 02:41 AM |
| Nitrogen, Nitrate (As N)           | 2.51   |      | 0.500          | mg/L  | 5               | 3/16/2014 05:36 PM |
| Sulfate                            | 76.0   |      | 0.500          | mg/L  | 1               | 3/14/2014 02:41 AM |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       | Analyst: PPM    |                    |
| Alkalinity, Bicarbonate (As CaCO3) | 255    |      | 10.0           | mg/L  | 1               | 3/4/2014 11:00 AM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 11:00 AM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 11:00 AM  |
| Alkalinity, Total (As CaCO3)       | 255    |      | 10.0           | mg/L  | 1               | 3/4/2014 11:00 AM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



**ALS Environmental****Date:** 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** Dup-3  
**Collection Date:** 2/26/2014 01:15 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-04  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 1,520  |      | 5.00              | µmhos/cm | 1               | 3/4/2014 11:00 AM   |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 6.63   | H    | 0.100             | pH Units | 1               | 3/4/2014 11:00 AM   |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 950    |      | 10.0              | mg/L     | 1               | 3/5/2014 10:40 AM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** Dup-4  
**Collection Date:** 2/26/2014 05:12 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-05  
**Matrix:** GROUNDWATER

| Analyses                       | Result  | Qual | Report Limit       | Units | Dilution Factor          | Date Analyzed                      |
|--------------------------------|---------|------|--------------------|-------|--------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |         |      |                    |       |                          |                                    |
| Mercury                        | ND      |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: OFO<br>3/7/2014 02:04 PM  |
| <b>DISSOLVED METALS</b>        |         |      |                    |       |                          |                                    |
| Aluminum                       | ND      |      | SW6020<br>0.0100   | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: SKS<br>3/10/2014 01:26 PM |
| Arsenic                        | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:26 PM                 |
| Barium                         | 0.213   |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:26 PM                 |
| Boron                          | 0.218   |      | 0.0200             | mg/L  | 1                        | 3/10/2014 01:26 PM                 |
| Cadmium                        | ND      |      | 0.00200            | mg/L  | 1                        | 3/10/2014 01:26 PM                 |
| Calcium                        | 168     |      | 0.500              | mg/L  | 1                        | 3/10/2014 01:26 PM                 |
| Chromium                       | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:26 PM                 |
| Cobalt                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:26 PM                 |
| Copper                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:26 PM                 |
| Iron                           | ND      |      | 0.200              | mg/L  | 1                        | 3/10/2014 01:26 PM                 |
| Lead                           | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:26 PM                 |
| Magnesium                      | 22.7    |      | 0.200              | mg/L  | 1                        | 3/10/2014 01:26 PM                 |
| Manganese                      | 0.00882 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:26 PM                 |
| Molybdenum                     | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:26 PM                 |
| Nickel                         | 0.00701 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:26 PM                 |
| Potassium                      | 3.96    |      | 0.200              | mg/L  | 1                        | 3/10/2014 01:26 PM                 |
| Selenium                       | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:26 PM                 |
| Silver                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:26 PM                 |
| Sodium                         | 111     |      | 0.200              | mg/L  | 1                        | 3/10/2014 01:26 PM                 |
| Uranium                        | 0.00645 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:26 PM                 |
| Zinc                           | 0.0205  |      | 0.00500            | mg/L  | 1                        | 3/10/2014 01:26 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |         |      |                    |       |                          |                                    |
| 1,1'-Biphenyl                  | 0.27    |      | SW8270<br>0.20     | µg/L  | Prep Date: 3/4/2014<br>1 | Analyst: LG<br>3/6/2014 11:05 PM   |
| 1-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 11:05 PM                  |
| 2,4,5-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 11:05 PM                  |
| 2,4,6-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 11:05 PM                  |
| 2,4-Dichlorophenol             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 11:05 PM                  |
| 2,4-Dimethylphenol             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 11:05 PM                  |
| 2,4-Dinitrophenol              | ND      |      | 1.0                | µg/L  | 1                        | 3/6/2014 11:05 PM                  |
| 2,4-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 11:05 PM                  |
| 2,6-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 11:05 PM                  |
| 2-Chloronaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 11:05 PM                  |
| 2-Chlorophenol                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 11:05 PM                  |
| 2-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 11:05 PM                  |
| 2-Methylphenol                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 11:05 PM                  |
| 2-Nitroaniline                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 11:05 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** Dup-4  
**Collection Date:** 2/26/2014 05:12 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-05  
**Matrix:** GROUNDWATER

| Analyses                    | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed     |
|-----------------------------|--------|------|--------------|-------|-----------------|-------------------|
| 2-Nitrophenol               | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| 3&4-Methylphenol            | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| 3,3'-Dichlorobenzidine      | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| 3-Nitroaniline              | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| 4,6-Dinitro-2-methylphenol  | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| 4-Bromophenyl phenyl ether  | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| 4-Chloro-3-methylphenol     | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| 4-Chloroaniline             | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| 4-Chlorophenyl phenyl ether | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| 4-Nitroaniline              | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| 4-Nitrophenol               | ND     |      | 1.0          | µg/L  | 1               | 3/6/2014 11:05 PM |
| Acenaphthene                | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Acenaphthylene              | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Acetophenone                | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Anthracene                  | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Atrazine                    | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Benz(a)anthracene           | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Benzaldehyde                | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Benzo(a)pyrene              | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Benzo(b)fluoranthene        | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Benzo(g,h,i)perylene        | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Benzo(k)fluoranthene        | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Bis(2-chloroethoxy)methane  | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Bis(2-chloroethyl)ether     | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Bis(2-chloroisopropyl)ether | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Bis(2-ethylhexyl)phthalate  | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Butyl benzyl phthalate      | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Caprolactam                 | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Carbazole                   | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Chrysene                    | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Dibenz(a,h)anthracene       | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Dibenzofuran                | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Diethyl phthalate           | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Dimethyl phthalate          | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Di-n-butyl phthalate        | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Di-n-octyl phthalate        | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Fluoranthene                | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Fluorene                    | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Hexachlorobenzene           | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |
| Hexachlorobutadiene         | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 11:05 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** Dup-4  
**Collection Date:** 2/26/2014 05:12 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-05  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 11:05 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 11:05 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 11:05 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 11:05 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 11:05 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 11:05 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 11:05 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 11:05 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 11:05 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 11:05 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 11:05 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 11:05 PM |
| Surr: 2,4,6-Tribromophenol | 74.7   |      | 34-129        | %REC  | 1                  | 3/6/2014 11:05 PM |
| Surr: 2-Fluorobiphenyl     | 65.6   |      | 40-125        | %REC  | 1                  | 3/6/2014 11:05 PM |
| Surr: 2-Fluorophenol       | 64.6   |      | 20-120        | %REC  | 1                  | 3/6/2014 11:05 PM |
| Surr: 4-Terphenyl-d14      | 73.1   |      | 40-135        | %REC  | 1                  | 3/6/2014 11:05 PM |
| Surr: Nitrobenzene-d5      | 71.4   |      | 41-120        | %REC  | 1                  | 3/6/2014 11:05 PM |
| Surr: Phenol-d6            | 59.8   |      | 20-120        | %REC  | 1                  | 3/6/2014 11:05 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 05:37 AM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 05:37 AM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 05:37 AM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 05:37 AM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 05:37 AM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 05:37 AM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 05:37 AM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 05:37 AM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 05:37 AM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 05:37 AM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 05:37 AM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 05:37 AM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 05:37 AM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 05:37 AM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 05:37 AM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 05:37 AM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 05:37 AM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 05:37 AM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 05:37 AM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 05:37 AM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 05:37 AM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** Dup-4  
**Collection Date:** 2/26/2014 05:12 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-05  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed      |
|------------------------------------|--------|------|----------------|-------|-----------------|--------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:37 AM  |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:37 AM  |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:37 AM  |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:37 AM  |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:37 AM  |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:37 AM  |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:37 AM  |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:37 AM  |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:37 AM  |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 05:37 AM  |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:37 AM  |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 05:37 AM  |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:37 AM  |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:37 AM  |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:37 AM  |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:37 AM  |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:37 AM  |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:37 AM  |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:37 AM  |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:37 AM  |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:37 AM  |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:37 AM  |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 05:37 AM  |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/4/2014 05:37 AM  |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/4/2014 05:37 AM  |
| Surr: 1,2-Dichloroethane-d4        | 98.8   |      | 70-125         | %REC  | 1               | 3/4/2014 05:37 AM  |
| Surr: 4-Bromofluorobenzene         | 96.3   |      | 72-125         | %REC  | 1               | 3/4/2014 05:37 AM  |
| Surr: Dibromofluoromethane         | 100    |      | 71-125         | %REC  | 1               | 3/4/2014 05:37 AM  |
| Surr: Toluene-d8                   | 93.0   |      | 75-125         | %REC  | 1               | 3/4/2014 05:37 AM  |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       | Analyst: JKP    |                    |
| Chloride                           | 289    |      | 2.50           | mg/L  | 5               | 3/14/2014 12:20 PM |
| Fluoride                           | 0.546  |      | 0.100          | mg/L  | 1               | 3/14/2014 02:56 AM |
| Nitrogen, Nitrate (As N)           | 2.98   |      | 0.500          | mg/L  | 5               | 3/16/2014 06:02 PM |
| Sulfate                            | 68.6   |      | 0.500          | mg/L  | 1               | 3/14/2014 02:56 AM |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       | Analyst: PPM    |                    |
| Alkalinity, Bicarbonate (As CaCO3) | 396    |      | 10.0           | mg/L  | 1               | 3/4/2014 11:05 AM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 11:05 AM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 11:05 AM  |
| Alkalinity, Total (As CaCO3)       | 396    |      | 10.0           | mg/L  | 1               | 3/4/2014 11:05 AM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental**

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** Dup-4  
**Collection Date:** 2/26/2014 05:12 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-05  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 1,770  |      | 5.00              | µmhos/cm | 1               | 3/4/2014 11:05 AM   |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 6.91   | H    | 0.100             | pH Units | 1               | 3/4/2014 11:05 AM   |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 1,090  |      | 10.0              | mg/L     | 1               | 3/5/2014 10:40 AM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-12R  
**Collection Date:** 2/27/2014 08:33 AM

**Work Order:** 14030008  
**Lab ID:** 14030008-06  
**Matrix:** GROUNDWATER

| Analyses                       | Result         | Qual | Report Limit              | Units       | Dilution Factor                 | Date Analyzed                             |
|--------------------------------|----------------|------|---------------------------|-------------|---------------------------------|-------------------------------------------|
| <b>MERCURY-SW7470A</b>         |                |      |                           |             |                                 |                                           |
| Mercury                        | ND             |      | <b>SW7470</b><br>0.000200 | mg/L        | Prep Date: <b>3/7/2014</b><br>1 | Analyst: <b>OFO</b><br>3/7/2014 02:06 PM  |
| <b>DISSOLVED METALS</b>        |                |      |                           |             |                                 |                                           |
| Aluminum                       | ND             |      | <b>SW6020</b><br>0.0100   | mg/L        | Prep Date: <b>3/7/2014</b><br>1 | Analyst: <b>SKS</b><br>3/10/2014 01:29 PM |
| Arsenic                        | ND             |      | 0.00500                   | mg/L        | 1                               | 3/10/2014 01:29 PM                        |
| <b>Barium</b>                  | <b>0.0767</b>  |      | <b>0.00500</b>            | <b>mg/L</b> | 1                               | 3/10/2014 01:29 PM                        |
| <b>Boron</b>                   | <b>0.193</b>   |      | <b>0.0200</b>             | <b>mg/L</b> | 1                               | 3/10/2014 01:29 PM                        |
| Cadmium                        | ND             |      | 0.00200                   | mg/L        | 1                               | 3/10/2014 01:29 PM                        |
| <b>Calcium</b>                 | <b>63.3</b>    |      | <b>0.500</b>              | <b>mg/L</b> | 1                               | 3/10/2014 01:29 PM                        |
| Chromium                       | ND             |      | 0.00500                   | mg/L        | 1                               | 3/10/2014 01:29 PM                        |
| Cobalt                         | ND             |      | 0.00500                   | mg/L        | 1                               | 3/10/2014 01:29 PM                        |
| Copper                         | ND             |      | 0.00500                   | mg/L        | 1                               | 3/10/2014 01:29 PM                        |
| Iron                           | ND             |      | 0.200                     | mg/L        | 1                               | 3/10/2014 01:29 PM                        |
| Lead                           | ND             |      | 0.00500                   | mg/L        | 1                               | 3/10/2014 01:29 PM                        |
| <b>Magnesium</b>               | <b>7.39</b>    |      | <b>0.200</b>              | <b>mg/L</b> | 1                               | 3/10/2014 01:29 PM                        |
| Manganese                      | ND             |      | 0.00500                   | mg/L        | 1                               | 3/10/2014 01:29 PM                        |
| Molybdenum                     | ND             |      | 0.00500                   | mg/L        | 1                               | 3/10/2014 01:29 PM                        |
| <b>Nickel</b>                  | <b>0.00992</b> |      | <b>0.00500</b>            | <b>mg/L</b> | 1                               | 3/10/2014 01:29 PM                        |
| <b>Potassium</b>               | <b>1.83</b>    |      | <b>0.200</b>              | <b>mg/L</b> | 1                               | 3/10/2014 01:29 PM                        |
| Selenium                       | ND             |      | 0.00500                   | mg/L        | 1                               | 3/10/2014 01:29 PM                        |
| Silver                         | ND             |      | 0.00500                   | mg/L        | 1                               | 3/10/2014 01:29 PM                        |
| <b>Sodium</b>                  | <b>47.2</b>    |      | <b>0.200</b>              | <b>mg/L</b> | 1                               | 3/10/2014 01:29 PM                        |
| Uranium                        | ND             |      | 0.00500                   | mg/L        | 1                               | 3/10/2014 01:29 PM                        |
| Zinc                           | ND             |      | 0.00500                   | mg/L        | 1                               | 3/10/2014 01:29 PM                        |
| <b>LOW-LEVEL SEMIVOLATILES</b> |                |      |                           |             |                                 |                                           |
|                                |                |      | <b>SW8270</b>             |             | Prep Date: <b>3/4/2014</b>      | Analyst: <b>LG</b>                        |
| 1,1'-Biphenyl                  | ND             |      | 0.20                      | µg/L        | 1                               | 3/5/2014 11:56 PM                         |
| 1-Methylnaphthalene            | ND             |      | 0.20                      | µg/L        | 1                               | 3/5/2014 11:56 PM                         |
| 2,4,5-Trichlorophenol          | ND             |      | 0.20                      | µg/L        | 1                               | 3/5/2014 11:56 PM                         |
| 2,4,6-Trichlorophenol          | ND             |      | 0.20                      | µg/L        | 1                               | 3/5/2014 11:56 PM                         |
| 2,4-Dichlorophenol             | ND             |      | 0.20                      | µg/L        | 1                               | 3/5/2014 11:56 PM                         |
| 2,4-Dimethylphenol             | ND             |      | 0.20                      | µg/L        | 1                               | 3/5/2014 11:56 PM                         |
| 2,4-Dinitrophenol              | ND             |      | 1.0                       | µg/L        | 1                               | 3/5/2014 11:56 PM                         |
| 2,4-Dinitrotoluene             | ND             |      | 0.20                      | µg/L        | 1                               | 3/5/2014 11:56 PM                         |
| 2,6-Dinitrotoluene             | ND             |      | 0.20                      | µg/L        | 1                               | 3/5/2014 11:56 PM                         |
| 2-Chloronaphthalene            | ND             |      | 0.20                      | µg/L        | 1                               | 3/5/2014 11:56 PM                         |
| 2-Chlorophenol                 | ND             |      | 0.20                      | µg/L        | 1                               | 3/5/2014 11:56 PM                         |
| 2-Methylnaphthalene            | ND             |      | 0.20                      | µg/L        | 1                               | 3/5/2014 11:56 PM                         |
| 2-Methylphenol                 | ND             |      | 0.20                      | µg/L        | 1                               | 3/5/2014 11:56 PM                         |
| 2-Nitroaniline                 | ND             |      | 0.20                      | µg/L        | 1                               | 3/5/2014 11:56 PM                         |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-12R  
**Collection Date:** 2/27/2014 08:33 AM

**Work Order:** 14030008  
**Lab ID:** 14030008-06  
**Matrix:** GROUNDWATER

| Analyses                    | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed     |
|-----------------------------|--------|------|--------------|-------|-----------------|-------------------|
| 2-Nitrophenol               | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| 3&4-Methylphenol            | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| 3,3'-Dichlorobenzidine      | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| 3-Nitroaniline              | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| 4,6-Dinitro-2-methylphenol  | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| 4-Bromophenyl phenyl ether  | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| 4-Chloro-3-methylphenol     | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| 4-Chloroaniline             | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| 4-Chlorophenyl phenyl ether | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| 4-Nitroaniline              | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| 4-Nitrophenol               | ND     |      | 1.0          | µg/L  | 1               | 3/5/2014 11:56 PM |
| Acenaphthene                | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Acenaphthylene              | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Acetophenone                | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Anthracene                  | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Atrazine                    | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Benz(a)anthracene           | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Benzaldehyde                | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Benzo(a)pyrene              | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Benzo(b)fluoranthene        | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Benzo(g,h,i)perylene        | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Benzo(k)fluoranthene        | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Bis(2-chloroethoxy)methane  | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Bis(2-chloroethyl)ether     | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Bis(2-chloroisopropyl)ether | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Bis(2-ethylhexyl)phthalate  | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Butyl benzyl phthalate      | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Caprolactam                 | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Carbazole                   | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Chrysene                    | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Dibenz(a,h)anthracene       | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Dibenzofuran                | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Diethyl phthalate           | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Dimethyl phthalate          | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Di-n-butyl phthalate        | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Di-n-octyl phthalate        | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Fluoranthene                | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Fluorene                    | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Hexachlorobenzene           | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |
| Hexachlorobutadiene         | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 11:56 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-12R  
**Collection Date:** 2/27/2014 08:33 AM

**Work Order:** 14030008  
**Lab ID:** 14030008-06  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor | Date Analyzed      |
|----------------------------|--------|------|---------------|-------|-----------------|--------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1               | 3/5/2014 11:56 PM  |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1               | 3/5/2014 11:56 PM  |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1               | 3/5/2014 11:56 PM  |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1               | 3/5/2014 11:56 PM  |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1               | 3/5/2014 11:56 PM  |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1               | 3/5/2014 11:56 PM  |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1               | 3/5/2014 11:56 PM  |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1               | 3/5/2014 11:56 PM  |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1               | 3/5/2014 11:56 PM  |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1               | 3/5/2014 11:56 PM  |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1               | 3/5/2014 11:56 PM  |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1               | 3/5/2014 11:56 PM  |
| Surr: 2,4,6-Tribromophenol | 68.3   |      | 34-129        | %REC  | 1               | 3/5/2014 11:56 PM  |
| Surr: 2-Fluorobiphenyl     | 71.3   |      | 40-125        | %REC  | 1               | 3/5/2014 11:56 PM  |
| Surr: 2-Fluorophenol       | 60.5   |      | 20-120        | %REC  | 1               | 3/5/2014 11:56 PM  |
| Surr: 4-Terphenyl-d14      | 69.2   |      | 40-135        | %REC  | 1               | 3/5/2014 11:56 PM  |
| Surr: Nitrobenzene-d5      | 70.6   |      | 41-120        | %REC  | 1               | 3/5/2014 11:56 PM  |
| Surr: Phenol-d6            | 61.3   |      | 20-120        | %REC  | 1               | 3/5/2014 11:56 PM  |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       |                 | <b>Analyst: PC</b> |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:03 AM  |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:03 AM  |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:03 AM  |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:03 AM  |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:03 AM  |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:03 AM  |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:03 AM  |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:03 AM  |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:03 AM  |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:03 AM  |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:03 AM  |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:03 AM  |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:03 AM  |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:03 AM  |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:03 AM  |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:03 AM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-12R  
**Collection Date:** 2/27/2014 08:33 AM

**Work Order:** 14030008  
**Lab ID:** 14030008-06  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed      |
|------------------------------------|--------|------|----------------|-------|-----------------|--------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 06:03 AM  |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 06:03 AM  |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/4/2014 06:03 AM  |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/4/2014 06:03 AM  |
| Surr: 1,2-Dichloroethane-d4        | 96.4   |      | 70-125         | %REC  | 1               | 3/4/2014 06:03 AM  |
| Surr: 4-Bromofluorobenzene         | 95.6   |      | 72-125         | %REC  | 1               | 3/4/2014 06:03 AM  |
| Surr: Dibromofluoromethane         | 99.1   |      | 71-125         | %REC  | 1               | 3/4/2014 06:03 AM  |
| Surr: Toluene-d8                   | 92.8   |      | 75-125         | %REC  | 1               | 3/4/2014 06:03 AM  |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       | Analyst: JKP    |                    |
| Chloride                           | 28.3   |      | 0.500          | mg/L  | 1               | 3/14/2014 03:10 AM |
| Fluoride                           | 0.886  |      | 0.100          | mg/L  | 1               | 3/14/2014 03:10 AM |
| Nitrogen, Nitrate (As N)           | 7.38   |      | 0.500          | mg/L  | 5               | 3/16/2014 06:27 PM |
| Sulfate                            | 63.4   |      | 0.500          | mg/L  | 1               | 3/14/2014 03:10 AM |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       | Analyst: PPM    |                    |
| Alkalinity, Bicarbonate (As CaCO3) | 244    |      | 10.0           | mg/L  | 1               | 3/4/2014 11:11 AM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 11:11 AM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 11:11 AM  |
| Alkalinity, Total (As CaCO3)       | 244    |      | 10.0           | mg/L  | 1               | 3/4/2014 11:11 AM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental**

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-12R  
**Collection Date:** 2/27/2014 08:33 AM

**Work Order:** 14030008  
**Lab ID:** 14030008-06  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 683    |      | 5.00              | µmhos/cm | 1               | 3/4/2014 11:11 AM   |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 6.92   | H    | 0.100             | pH Units | 1               | 3/4/2014 11:11 AM   |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 432    |      | 10.0              | mg/L     | 1               | 3/5/2014 10:40 AM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-7  
**Collection Date:** 2/27/2014 11:15 AM

**Work Order:** 14030008  
**Lab ID:** 14030008-07  
**Matrix:** GROUNDWATER

| Analyses                       | Result  | Qual | Report Limit       | Units | Dilution Factor          | Date Analyzed                      |
|--------------------------------|---------|------|--------------------|-------|--------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |         |      |                    |       |                          |                                    |
| Mercury                        | ND      |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: OFO<br>3/7/2014 02:07 PM  |
| <b>DISSOLVED METALS</b>        |         |      |                    |       |                          |                                    |
| Aluminum                       | 0.0159  |      | SW6020<br>0.0100   | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: SKS<br>3/10/2014 03:27 PM |
| Arsenic                        | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:27 PM                 |
| Barium                         | 0.208   |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:27 PM                 |
| Boron                          | 0.168   |      | 0.0200             | mg/L  | 1                        | 3/10/2014 03:27 PM                 |
| Cadmium                        | ND      |      | 0.00200            | mg/L  | 1                        | 3/10/2014 03:27 PM                 |
| Calcium                        | 76.4    |      | 0.500              | mg/L  | 1                        | 3/10/2014 03:27 PM                 |
| Chromium                       | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:27 PM                 |
| Cobalt                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:27 PM                 |
| Copper                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:27 PM                 |
| Iron                           | ND      |      | 0.200              | mg/L  | 1                        | 3/10/2014 03:27 PM                 |
| Lead                           | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:27 PM                 |
| Magnesium                      | 7.58    |      | 0.200              | mg/L  | 1                        | 3/10/2014 03:27 PM                 |
| Manganese                      | 0.781   |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:27 PM                 |
| Molybdenum                     | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:27 PM                 |
| Nickel                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:27 PM                 |
| Potassium                      | 2.19    |      | 0.200              | mg/L  | 1                        | 3/10/2014 03:27 PM                 |
| Selenium                       | 0.00540 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:27 PM                 |
| Silver                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:27 PM                 |
| Sodium                         | 43.5    |      | 0.200              | mg/L  | 1                        | 3/10/2014 03:27 PM                 |
| Uranium                        | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:27 PM                 |
| Zinc                           | 0.00818 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:27 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |         |      |                    |       |                          |                                    |
| 1,1'-Biphenyl                  | ND      |      | SW8270<br>0.20     | µg/L  | Prep Date: 3/4/2014<br>1 | Analyst: LG<br>3/6/2014 11:24 PM   |
| 1-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 11:24 PM                  |
| 2,4,5-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 11:24 PM                  |
| 2,4,6-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 11:24 PM                  |
| 2,4-Dichlorophenol             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 11:24 PM                  |
| 2,4-Dimethylphenol             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 11:24 PM                  |
| 2,4-Dinitrophenol              | ND      |      | 1.0                | µg/L  | 1                        | 3/6/2014 11:24 PM                  |
| 2,4-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 11:24 PM                  |
| 2,6-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 11:24 PM                  |
| 2-Chloronaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 11:24 PM                  |
| 2-Chlorophenol                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 11:24 PM                  |
| 2-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 11:24 PM                  |
| 2-Methylphenol                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 11:24 PM                  |
| 2-Nitroaniline                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 11:24 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-7  
**Collection Date:** 2/27/2014 11:15 AM

**Work Order:** 14030008  
**Lab ID:** 14030008-07  
**Matrix:** GROUNDWATER

| Analyses                          | Result     | Qual | Report Limit | Units       | Dilution Factor | Date Analyzed            |
|-----------------------------------|------------|------|--------------|-------------|-----------------|--------------------------|
| 2-Nitrophenol                     | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| 3&4-Methylphenol                  | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| 3,3'-Dichlorobenzidine            | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| 3-Nitroaniline                    | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| 4,6-Dinitro-2-methylphenol        | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| 4-Bromophenyl phenyl ether        | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| 4-Chloro-3-methylphenol           | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| 4-Chloroaniline                   | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| 4-Chlorophenyl phenyl ether       | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| 4-Nitroaniline                    | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| 4-Nitrophenol                     | ND         |      | 1.0          | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Acenaphthene                      | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Acenaphthylene                    | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Acetophenone                      | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Anthracene                        | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Atrazine                          | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Benz(a)anthracene                 | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Benzaldehyde                      | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Benzo(a)pyrene                    | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Benzo(b)fluoranthene              | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Benzo(g,h,i)perylene              | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Benzo(k)fluoranthene              | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Bis(2-chloroethoxy)methane        | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Bis(2-chloroethyl)ether           | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Bis(2-chloroisopropyl)ether       | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>5.4</b> |      | <b>0.20</b>  | <b>µg/L</b> | <b>1</b>        | <b>3/6/2014 11:24 PM</b> |
| Butyl benzyl phthalate            | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Caprolactam                       | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Carbazole                         | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Chrysene                          | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Dibenz(a,h)anthracene             | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Dibenzofuran                      | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Diethyl phthalate                 | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Dimethyl phthalate                | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Di-n-butyl phthalate              | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Di-n-octyl phthalate              | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Fluoranthene                      | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Fluorene                          | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Hexachlorobenzene                 | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |
| Hexachlorobutadiene               | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 11:24 PM        |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-7  
**Collection Date:** 2/27/2014 11:15 AM

**Work Order:** 14030008  
**Lab ID:** 14030008-07  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 11:24 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 11:24 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 11:24 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 11:24 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 11:24 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 11:24 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 11:24 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 11:24 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 11:24 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 11:24 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 11:24 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 11:24 PM |
| Surr: 2,4,6-Tribromophenol | 58.4   |      | 34-129        | %REC  | 1                  | 3/6/2014 11:24 PM |
| Surr: 2-Fluorobiphenyl     | 56.2   |      | 40-125        | %REC  | 1                  | 3/6/2014 11:24 PM |
| Surr: 2-Fluorophenol       | 48.7   |      | 20-120        | %REC  | 1                  | 3/6/2014 11:24 PM |
| Surr: 4-Terphenyl-d14      | 67.2   |      | 40-135        | %REC  | 1                  | 3/6/2014 11:24 PM |
| Surr: Nitrobenzene-d5      | 53.9   |      | 41-120        | %REC  | 1                  | 3/6/2014 11:24 PM |
| Surr: Phenol-d6            | 44.5   |      | 20-120        | %REC  | 1                  | 3/6/2014 11:24 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 06:29 AM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 06:29 AM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 06:29 AM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 06:29 AM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 06:29 AM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 06:29 AM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 06:29 AM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 06:29 AM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 06:29 AM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 06:29 AM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 06:29 AM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 06:29 AM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 06:29 AM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 06:29 AM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 06:29 AM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 06:29 AM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 06:29 AM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 06:29 AM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 06:29 AM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 06:29 AM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 06:29 AM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-7  
**Collection Date:** 2/27/2014 11:15 AM

**Work Order:** 14030008  
**Lab ID:** 14030008-07  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed      |
|------------------------------------|--------|------|----------------|-------|-----------------|--------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:29 AM  |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:29 AM  |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:29 AM  |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:29 AM  |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:29 AM  |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:29 AM  |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:29 AM  |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:29 AM  |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:29 AM  |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 06:29 AM  |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:29 AM  |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 06:29 AM  |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:29 AM  |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:29 AM  |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:29 AM  |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:29 AM  |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:29 AM  |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:29 AM  |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:29 AM  |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:29 AM  |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:29 AM  |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:29 AM  |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 06:29 AM  |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/4/2014 06:29 AM  |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/4/2014 06:29 AM  |
| Surr: 1,2-Dichloroethane-d4        | 97.8   |      | 70-125         | %REC  | 1               | 3/4/2014 06:29 AM  |
| Surr: 4-Bromofluorobenzene         | 95.6   |      | 72-125         | %REC  | 1               | 3/4/2014 06:29 AM  |
| Surr: Dibromofluoromethane         | 101    |      | 71-125         | %REC  | 1               | 3/4/2014 06:29 AM  |
| Surr: Toluene-d8                   | 92.9   |      | 75-125         | %REC  | 1               | 3/4/2014 06:29 AM  |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       | Analyst: JKP    |                    |
| Chloride                           | 31.0   |      | 0.500          | mg/L  | 1               | 3/14/2014 03:25 AM |
| Fluoride                           | 0.501  |      | 0.100          | mg/L  | 1               | 3/14/2014 03:25 AM |
| Nitrogen, Nitrate (As N)           | 1.50   |      | 0.500          | mg/L  | 5               | 3/16/2014 06:53 PM |
| Sulfate                            | 62.1   |      | 0.500          | mg/L  | 1               | 3/14/2014 03:25 AM |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       | Analyst: PPM    |                    |
| Alkalinity, Bicarbonate (As CaCO3) | 232    |      | 10.0           | mg/L  | 1               | 3/4/2014 11:16 AM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 11:16 AM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 11:16 AM  |
| Alkalinity, Total (As CaCO3)       | 232    |      | 10.0           | mg/L  | 1               | 3/4/2014 11:16 AM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental****Date:** 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-7  
**Collection Date:** 2/27/2014 11:15 AM

**Work Order:** 14030008  
**Lab ID:** 14030008-07  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 641    |      | 5.00              | µmhos/cm | 1               | 3/4/2014 11:16 AM   |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 6.87   | H    | 0.100             | pH Units | 1               | 3/4/2014 11:16 AM   |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 408    |      | 10.0              | mg/L     | 1               | 3/5/2014 10:40 AM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** RW-1  
**Collection Date:** 2/27/2014 01:10 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-08  
**Matrix:** GROUNDWATER

| Analyses                       | Result  | Qual | Report Limit       | Units | Dilution Factor          | Date Analyzed                      |
|--------------------------------|---------|------|--------------------|-------|--------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |         |      |                    |       |                          |                                    |
| Mercury                        | ND      |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: OFO<br>3/7/2014 02:09 PM  |
| <b>DISSOLVED METALS</b>        |         |      |                    |       |                          |                                    |
| Aluminum                       | ND      |      | SW6020<br>0.0100   | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: SKS<br>3/10/2014 03:29 PM |
| Arsenic                        | 0.00608 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:29 PM                 |
| Barium                         | 0.155   |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:29 PM                 |
| Boron                          | 0.167   |      | 0.0200             | mg/L  | 1                        | 3/10/2014 03:29 PM                 |
| Cadmium                        | ND      |      | 0.00200            | mg/L  | 1                        | 3/10/2014 03:29 PM                 |
| Calcium                        | 67.3    |      | 0.500              | mg/L  | 1                        | 3/10/2014 03:29 PM                 |
| Chromium                       | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:29 PM                 |
| Cobalt                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:29 PM                 |
| Copper                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:29 PM                 |
| Iron                           | ND      |      | 0.200              | mg/L  | 1                        | 3/10/2014 03:29 PM                 |
| Lead                           | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:29 PM                 |
| Magnesium                      | 7.57    |      | 0.200              | mg/L  | 1                        | 3/10/2014 03:29 PM                 |
| Manganese                      | 0.186   |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:29 PM                 |
| Molybdenum                     | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:29 PM                 |
| Nickel                         | 0.0156  |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:29 PM                 |
| Potassium                      | 2.40    |      | 0.200              | mg/L  | 1                        | 3/10/2014 03:29 PM                 |
| Selenium                       | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:29 PM                 |
| Silver                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:29 PM                 |
| Sodium                         | 49.6    |      | 0.200              | mg/L  | 1                        | 3/10/2014 03:29 PM                 |
| Uranium                        | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:29 PM                 |
| Zinc                           | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:29 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |         |      |                    |       |                          |                                    |
| 1,1'-Biphenyl                  | ND      |      | SW8270<br>0.20     | µg/L  | Prep Date: 3/4/2014<br>1 | Analyst: LG<br>3/6/2014 12:35 AM   |
| 1-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 12:35 AM                  |
| 2,4,5-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 12:35 AM                  |
| 2,4,6-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 12:35 AM                  |
| 2,4-Dichlorophenol             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 12:35 AM                  |
| 2,4-Dimethylphenol             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 12:35 AM                  |
| 2,4-Dinitrophenol              | ND      |      | 1.0                | µg/L  | 1                        | 3/6/2014 12:35 AM                  |
| 2,4-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 12:35 AM                  |
| 2,6-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 12:35 AM                  |
| 2-Chloronaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 12:35 AM                  |
| 2-Chlorophenol                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 12:35 AM                  |
| 2-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 12:35 AM                  |
| 2-Methylphenol                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 12:35 AM                  |
| 2-Nitroaniline                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 12:35 AM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** RW-1  
**Collection Date:** 2/27/2014 01:10 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-08  
**Matrix:** GROUNDWATER

| Analyses                          | Result    | Qual | Report Limit | Units       | Dilution Factor | Date Analyzed             |
|-----------------------------------|-----------|------|--------------|-------------|-----------------|---------------------------|
| 2-Nitrophenol                     | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| 3&4-Methylphenol                  | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| 3,3'-Dichlorobenzidine            | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| 3-Nitroaniline                    | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| 4,6-Dinitro-2-methylphenol        | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| 4-Bromophenyl phenyl ether        | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| 4-Chloro-3-methylphenol           | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| 4-Chloroaniline                   | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| 4-Chlorophenyl phenyl ether       | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| 4-Nitroaniline                    | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| 4-Nitrophenol                     | ND        |      | 1.0          | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Acenaphthene                      | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Acenaphthylene                    | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Acetophenone                      | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Anthracene                        | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Atrazine                          | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Benz(a)anthracene                 | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Benzaldehyde                      | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Benzo(a)pyrene                    | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Benzo(b)fluoranthene              | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Benzo(g,h,i)perylene              | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Benzo(k)fluoranthene              | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Bis(2-chloroethoxy)methane        | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Bis(2-chloroethyl)ether           | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Bis(2-chloroisopropyl)ether       | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>25</b> |      | <b>1.0</b>   | <b>µg/L</b> | <b>5</b>        | <b>3/10/2014 06:21 PM</b> |
| Butyl benzyl phthalate            | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Caprolactam                       | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Carbazole                         | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Chrysene                          | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Dibenz(a,h)anthracene             | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Dibenzofuran                      | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Diethyl phthalate                 | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Dimethyl phthalate                | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Di-n-butyl phthalate              | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Di-n-octyl phthalate              | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Fluoranthene                      | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Fluorene                          | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Hexachlorobenzene                 | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |
| Hexachlorobutadiene               | ND        |      | 0.20         | µg/L        | 1               | 3/6/2014 12:35 AM         |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** RW-1  
**Collection Date:** 2/27/2014 01:10 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-08  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor | Date Analyzed      |
|----------------------------|--------|------|---------------|-------|-----------------|--------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1               | 3/6/2014 12:35 AM  |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1               | 3/6/2014 12:35 AM  |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1               | 3/6/2014 12:35 AM  |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1               | 3/6/2014 12:35 AM  |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1               | 3/6/2014 12:35 AM  |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1               | 3/6/2014 12:35 AM  |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1               | 3/6/2014 12:35 AM  |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1               | 3/6/2014 12:35 AM  |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1               | 3/6/2014 12:35 AM  |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1               | 3/6/2014 12:35 AM  |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1               | 3/6/2014 12:35 AM  |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1               | 3/6/2014 12:35 AM  |
| Surr: 2,4,6-Tribromophenol | 74.1   |      | 34-129        | %REC  | 1               | 3/6/2014 12:35 AM  |
| Surr: 2,4,6-Tribromophenol | 99.3   |      | 34-129        | %REC  | 5               | 3/10/2014 06:21 PM |
| Surr: 2-Fluorobiphenyl     | 102    |      | 40-125        | %REC  | 5               | 3/10/2014 06:21 PM |
| Surr: 2-Fluorobiphenyl     | 69.6   |      | 40-125        | %REC  | 1               | 3/6/2014 12:35 AM  |
| Surr: 2-Fluorophenol       | 58.9   |      | 20-120        | %REC  | 1               | 3/6/2014 12:35 AM  |
| Surr: 2-Fluorophenol       | 68.0   |      | 20-120        | %REC  | 5               | 3/10/2014 06:21 PM |
| Surr: 4-Terphenyl-d14      | 72.9   |      | 40-135        | %REC  | 1               | 3/6/2014 12:35 AM  |
| Surr: 4-Terphenyl-d14      | 103    |      | 40-135        | %REC  | 5               | 3/10/2014 06:21 PM |
| Surr: Nitrobenzene-d5      | 69.8   |      | 41-120        | %REC  | 1               | 3/6/2014 12:35 AM  |
| Surr: Nitrobenzene-d5      | 77.0   |      | 41-120        | %REC  | 5               | 3/10/2014 06:21 PM |
| Surr: Phenol-d6            | 60.6   |      | 20-120        | %REC  | 1               | 3/6/2014 12:35 AM  |
| Surr: Phenol-d6            | 70.2   |      | 20-120        | %REC  | 5               | 3/10/2014 06:21 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       |                 | <b>Analyst: PC</b> |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:55 AM  |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:55 AM  |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:55 AM  |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:55 AM  |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:55 AM  |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:55 AM  |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:55 AM  |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:55 AM  |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:55 AM  |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:55 AM  |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 06:55 AM  |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 06:55 AM  |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 06:55 AM  |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 06:55 AM  |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 06:55 AM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** RW-1  
**Collection Date:** 2/27/2014 01:10 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-08  
**Matrix:** GROUNDWATER

| Analyses                         | Result      | Qual | Report Limit | Units       | Dilution Factor     | Date Analyzed      |
|----------------------------------|-------------|------|--------------|-------------|---------------------|--------------------|
| Benzene                          | ND          |      | 0.0050       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| Bromodichloromethane             | ND          |      | 0.0050       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| Bromoform                        | ND          |      | 0.0050       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| Bromomethane                     | ND          |      | 0.0050       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| Carbon disulfide                 | ND          |      | 0.010        | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| Carbon tetrachloride             | ND          |      | 0.0050       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| Chlorobenzene                    | ND          |      | 0.0050       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| Chloroethane                     | ND          |      | 0.0050       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| Chloroform                       | ND          |      | 0.0050       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| Chloromethane                    | ND          |      | 0.0050       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| cis-1,2-Dichloroethene           | ND          |      | 0.0050       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| cis-1,3-Dichloropropene          | ND          |      | 0.0050       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| Dibromochloromethane             | ND          |      | 0.0050       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| Ethylbenzene                     | ND          |      | 0.0050       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| Isopropylbenzene                 | ND          |      | 0.0050       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| m,p-Xylene                       | ND          |      | 0.010        | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| Methyl tert-butyl ether          | ND          |      | 0.0050       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| Methylene chloride               | ND          |      | 0.010        | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| Naphthalene                      | ND          |      | 0.0050       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| n-Butylbenzene                   | ND          |      | 0.0050       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| n-Propylbenzene                  | ND          |      | 0.0050       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| o-Xylene                         | ND          |      | 0.0050       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| sec-Butylbenzene                 | ND          |      | 0.0050       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| Styrene                          | ND          |      | 0.0050       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| Tetrachloroethene                | ND          |      | 0.0050       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| Toluene                          | ND          |      | 0.0050       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| trans-1,2-Dichloroethene         | ND          |      | 0.0050       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| trans-1,3-Dichloropropene        | ND          |      | 0.0050       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| Trichloroethene                  | ND          |      | 0.0050       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| Vinyl chloride                   | ND          |      | 0.0020       | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| Xylenes, Total                   | ND          |      | 0.015        | mg/L        | 1                   | 3/4/2014 06:55 AM  |
| Surr: 1,2-Dichloroethane-d4      | 97.0        |      | 70-125       | %REC        | 1                   | 3/4/2014 06:55 AM  |
| Surr: 4-Bromofluorobenzene       | 95.6        |      | 72-125       | %REC        | 1                   | 3/4/2014 06:55 AM  |
| Surr: Dibromofluoromethane       | 99.4        |      | 71-125       | %REC        | 1                   | 3/4/2014 06:55 AM  |
| Surr: Toluene-d8                 | 92.8        |      | 75-125       | %REC        | 1                   | 3/4/2014 06:55 AM  |
| <b>ANIONS - EPA 300.0 (1993)</b> |             |      | <b>E300</b>  |             | <b>Analyst: JKP</b> |                    |
| <b>Chloride</b>                  | <b>29.4</b> |      | <b>0.500</b> | <b>mg/L</b> | 1                   | 3/14/2014 03:39 AM |
| <b>Fluoride</b>                  | <b>1.07</b> |      | <b>0.100</b> | <b>mg/L</b> | 1                   | 3/14/2014 03:39 AM |
| <b>Nitrogen, Nitrate (As N)</b>  | <b>1.46</b> |      | <b>0.500</b> | <b>mg/L</b> | 5                   | 3/16/2014 07:19 PM |
| <b>Sulfate</b>                   | <b>76.9</b> |      | <b>0.500</b> | <b>mg/L</b> | 1                   | 3/14/2014 03:39 AM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental**

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** RW-1  
**Collection Date:** 2/27/2014 01:10 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-08  
**Matrix:** GROUNDWATER

| Analyses                                        | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|-------------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>ALKALINITY-SM2320B</b>                       |        |      |                   |          |                 |                     |
|                                                 |        |      | <b>SM2320B</b>    |          |                 | Analyst: <b>PPM</b> |
| Alkalinity, Bicarbonate (As CaCO <sub>3</sub> ) | 218    |      | 10.0              | mg/L     | 1               | 3/4/2014 11:22 AM   |
| Alkalinity, Carbonate (As CaCO <sub>3</sub> )   | ND     |      | 10.0              | mg/L     | 1               | 3/4/2014 11:22 AM   |
| Alkalinity, Hydroxide (As CaCO <sub>3</sub> )   | ND     |      | 10.0              | mg/L     | 1               | 3/4/2014 11:22 AM   |
| Alkalinity, Total (As CaCO <sub>3</sub> )       | 218    |      | 10.0              | mg/L     | 1               | 3/4/2014 11:22 AM   |
| <b>SPECIFIC CONDUCTIVITY</b>                    |        |      |                   |          |                 |                     |
|                                                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                           | 636    |      | 5.00              | µmhos/cm | 1               | 3/4/2014 11:22 AM   |
| <b>PH - SM4500H+ B</b>                          |        |      |                   |          |                 |                     |
|                                                 |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                              | 6.99   | H    | 0.100             | pH Units | 1               | 3/4/2014 11:22 AM   |
| <b>TOTAL DISSOLVED SOLIDS</b>                   |        |      |                   |          |                 |                     |
|                                                 |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable)    | 402    |      | 10.0              | mg/L     | 1               | 3/5/2014 10:40 AM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-1  
**Collection Date:** 2/27/2014 02:20 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-09  
**Matrix:** GROUNDWATER

| Analyses                       | Result  | Qual | Report Limit       | Units | Dilution Factor          | Date Analyzed                      |
|--------------------------------|---------|------|--------------------|-------|--------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |         |      |                    |       |                          |                                    |
| Mercury                        | ND      |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: OFO<br>3/7/2014 02:11 PM  |
| <b>DISSOLVED METALS</b>        |         |      |                    |       |                          |                                    |
| Aluminum                       | ND      |      | SW6020<br>0.0100   | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: SKS<br>3/10/2014 03:31 PM |
| Arsenic                        | 0.00775 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:31 PM                 |
| Barium                         | 0.111   |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:31 PM                 |
| Boron                          | 0.169   |      | 0.0200             | mg/L  | 1                        | 3/10/2014 03:31 PM                 |
| Cadmium                        | ND      |      | 0.00200            | mg/L  | 1                        | 3/10/2014 03:31 PM                 |
| Calcium                        | 86.6    |      | 0.500              | mg/L  | 1                        | 3/10/2014 03:31 PM                 |
| Chromium                       | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:31 PM                 |
| Cobalt                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:31 PM                 |
| Copper                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:31 PM                 |
| Iron                           | ND      |      | 0.200              | mg/L  | 1                        | 3/10/2014 03:31 PM                 |
| Lead                           | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:31 PM                 |
| Magnesium                      | 8.30    |      | 0.200              | mg/L  | 1                        | 3/10/2014 03:31 PM                 |
| Manganese                      | 0.690   |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:31 PM                 |
| Molybdenum                     | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:31 PM                 |
| Nickel                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:31 PM                 |
| Potassium                      | 1.39    |      | 0.200              | mg/L  | 1                        | 3/10/2014 03:31 PM                 |
| Selenium                       | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:31 PM                 |
| Silver                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:31 PM                 |
| Sodium                         | 39.2    |      | 0.200              | mg/L  | 1                        | 3/10/2014 03:31 PM                 |
| Uranium                        | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:31 PM                 |
| Zinc                           | 0.00874 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:31 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |         |      |                    |       |                          |                                    |
| 1,1'-Biphenyl                  | ND      |      | SW8270<br>0.20     | µg/L  | Prep Date: 3/4/2014<br>1 | Analyst: LG<br>3/6/2014 06:56 PM   |
| 1-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 06:56 PM                  |
| 2,4,5-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 06:56 PM                  |
| 2,4,6-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 06:56 PM                  |
| 2,4-Dichlorophenol             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 06:56 PM                  |
| 2,4-Dimethylphenol             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 06:56 PM                  |
| 2,4-Dinitrophenol              | ND      |      | 1.0                | µg/L  | 1                        | 3/6/2014 06:56 PM                  |
| 2,4-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 06:56 PM                  |
| 2,6-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 06:56 PM                  |
| 2-Chloronaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 06:56 PM                  |
| 2-Chlorophenol                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 06:56 PM                  |
| 2-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 06:56 PM                  |
| 2-Methylphenol                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 06:56 PM                  |
| 2-Nitroaniline                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 06:56 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-1  
**Collection Date:** 2/27/2014 02:20 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-09  
**Matrix:** GROUNDWATER

| Analyses                          | Result     | Qual | Report Limit | Units       | Dilution Factor | Date Analyzed            |
|-----------------------------------|------------|------|--------------|-------------|-----------------|--------------------------|
| 2-Nitrophenol                     | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| 3&4-Methylphenol                  | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| 3,3'-Dichlorobenzidine            | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| 3-Nitroaniline                    | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| 4,6-Dinitro-2-methylphenol        | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| 4-Bromophenyl phenyl ether        | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| 4-Chloro-3-methylphenol           | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| 4-Chloroaniline                   | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| 4-Chlorophenyl phenyl ether       | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| 4-Nitroaniline                    | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| 4-Nitrophenol                     | ND         |      | 1.0          | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Acenaphthene                      | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Acenaphthylene                    | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Acetophenone                      | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Anthracene                        | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Atrazine                          | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Benz(a)anthracene                 | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Benzaldehyde                      | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Benzo(a)pyrene                    | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Benzo(b)fluoranthene              | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Benzo(g,h,i)perylene              | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Benzo(k)fluoranthene              | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Bis(2-chloroethoxy)methane        | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Bis(2-chloroethyl)ether           | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Bis(2-chloroisopropyl)ether       | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>7.7</b> |      | <b>0.20</b>  | <b>µg/L</b> | <b>1</b>        | <b>3/6/2014 06:56 PM</b> |
| Butyl benzyl phthalate            | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Caprolactam                       | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Carbazole                         | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Chrysene                          | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Dibenz(a,h)anthracene             | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Dibenzofuran                      | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Diethyl phthalate                 | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Dimethyl phthalate                | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Di-n-butyl phthalate              | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Di-n-octyl phthalate              | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Fluoranthene                      | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Fluorene                          | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Hexachlorobenzene                 | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |
| Hexachlorobutadiene               | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 06:56 PM        |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-1  
**Collection Date:** 2/27/2014 02:20 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-09  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 06:56 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 06:56 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 06:56 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 06:56 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 06:56 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 06:56 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 06:56 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 06:56 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 06:56 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 06:56 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 06:56 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 06:56 PM |
| Surr: 2,4,6-Tribromophenol | 70.2   |      | 34-129        | %REC  | 1                  | 3/6/2014 06:56 PM |
| Surr: 2-Fluorobiphenyl     | 56.9   |      | 40-125        | %REC  | 1                  | 3/6/2014 06:56 PM |
| Surr: 2-Fluorophenol       | 52.5   |      | 20-120        | %REC  | 1                  | 3/6/2014 06:56 PM |
| Surr: 4-Terphenyl-d14      | 68.5   |      | 40-135        | %REC  | 1                  | 3/6/2014 06:56 PM |
| Surr: Nitrobenzene-d5      | 54.9   |      | 41-120        | %REC  | 1                  | 3/6/2014 06:56 PM |
| Surr: Phenol-d6            | 52.5   |      | 20-120        | %REC  | 1                  | 3/6/2014 06:56 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 07:21 AM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 07:21 AM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 07:21 AM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 07:21 AM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 07:21 AM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 07:21 AM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 07:21 AM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 07:21 AM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 07:21 AM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 07:21 AM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 07:21 AM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 07:21 AM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 07:21 AM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 07:21 AM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 07:21 AM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 07:21 AM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 07:21 AM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 07:21 AM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 07:21 AM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 07:21 AM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 07:21 AM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-1  
**Collection Date:** 2/27/2014 02:20 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-09  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed      |
|------------------------------------|--------|------|----------------|-------|-----------------|--------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:21 AM  |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:21 AM  |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:21 AM  |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:21 AM  |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:21 AM  |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:21 AM  |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:21 AM  |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:21 AM  |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:21 AM  |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 07:21 AM  |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:21 AM  |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 07:21 AM  |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:21 AM  |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:21 AM  |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:21 AM  |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:21 AM  |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:21 AM  |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:21 AM  |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:21 AM  |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:21 AM  |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:21 AM  |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:21 AM  |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:21 AM  |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/4/2014 07:21 AM  |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/4/2014 07:21 AM  |
| Surr: 1,2-Dichloroethane-d4        | 96.6   |      | 70-125         | %REC  | 1               | 3/4/2014 07:21 AM  |
| Surr: 4-Bromofluorobenzene         | 96.7   |      | 72-125         | %REC  | 1               | 3/4/2014 07:21 AM  |
| Surr: Dibromofluoromethane         | 99.8   |      | 71-125         | %REC  | 1               | 3/4/2014 07:21 AM  |
| Surr: Toluene-d8                   | 93.2   |      | 75-125         | %REC  | 1               | 3/4/2014 07:21 AM  |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       | Analyst: JKP    |                    |
| Chloride                           | 30.0   |      | 0.500          | mg/L  | 1               | 3/14/2014 04:23 AM |
| Fluoride                           | 0.758  |      | 0.100          | mg/L  | 1               | 3/14/2014 04:23 AM |
| Nitrogen, Nitrate (As N)           | 0.710  |      | 0.500          | mg/L  | 5               | 3/16/2014 08:36 PM |
| Sulfate                            | 63.2   |      | 0.500          | mg/L  | 1               | 3/14/2014 04:23 AM |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       | Analyst: PPM    |                    |
| Alkalinity, Bicarbonate (As CaCO3) | 259    |      | 10.0           | mg/L  | 1               | 3/4/2014 11:27 AM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 11:27 AM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 11:27 AM  |
| Alkalinity, Total (As CaCO3)       | 259    |      | 10.0           | mg/L  | 1               | 3/4/2014 11:27 AM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental**

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-1  
**Collection Date:** 2/27/2014 02:20 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-09  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 693    |      | 5.00              | µmhos/cm | 1               | 3/4/2014 11:27 AM   |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 6.88   | H    | 0.100             | pH Units | 1               | 3/4/2014 11:27 AM   |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 418    |      | 10.0              | mg/L     | 1               | 3/5/2014 10:40 AM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-6  
**Collection Date:** 2/27/2014 04:05 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-10  
**Matrix:** GROUNDWATER

| Analyses                       | Result  | Qual | Report Limit       | Units | Dilution Factor          | Date Analyzed                      |
|--------------------------------|---------|------|--------------------|-------|--------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |         |      |                    |       |                          |                                    |
| Mercury                        | ND      |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: OFO<br>3/7/2014 02:12 PM  |
| <b>DISSOLVED METALS</b>        |         |      |                    |       |                          |                                    |
| Aluminum                       | ND      |      | SW6020<br>0.0100   | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: SKS<br>3/10/2014 03:34 PM |
| Arsenic                        | 0.0458  |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:34 PM                 |
| Barium                         | 0.263   |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:34 PM                 |
| Boron                          | 0.220   |      | 0.0200             | mg/L  | 1                        | 3/10/2014 03:34 PM                 |
| Cadmium                        | ND      |      | 0.00200            | mg/L  | 1                        | 3/10/2014 03:34 PM                 |
| Calcium                        | 172     |      | 0.500              | mg/L  | 1                        | 3/10/2014 03:34 PM                 |
| Chromium                       | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:34 PM                 |
| Cobalt                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:34 PM                 |
| Copper                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:34 PM                 |
| Iron                           | 3.42    |      | 0.200              | mg/L  | 1                        | 3/10/2014 03:34 PM                 |
| Lead                           | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:34 PM                 |
| Magnesium                      | 22.6    |      | 0.200              | mg/L  | 1                        | 3/10/2014 03:34 PM                 |
| Manganese                      | 2.71    | E    | 0.00500            | mg/L  | 1                        | 3/10/2014 03:34 PM                 |
| Molybdenum                     | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:34 PM                 |
| Nickel                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:34 PM                 |
| Potassium                      | 3.42    |      | 0.200              | mg/L  | 1                        | 3/10/2014 03:34 PM                 |
| Selenium                       | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:34 PM                 |
| Silver                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:34 PM                 |
| Sodium                         | 60.8    |      | 0.200              | mg/L  | 1                        | 3/10/2014 03:34 PM                 |
| Uranium                        | 0.00882 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:34 PM                 |
| Zinc                           | 0.00622 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:34 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |         |      |                    |       |                          |                                    |
| 1,1'-Biphenyl                  | 0.45    |      | SW8270<br>0.20     | µg/L  | Prep Date: 3/4/2014<br>1 | Analyst: LG<br>3/6/2014 07:15 PM   |
| 1-Methylnaphthalene            | 0.64    |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:15 PM                  |
| 2,4,5-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:15 PM                  |
| 2,4,6-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:15 PM                  |
| 2,4-Dichlorophenol             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:15 PM                  |
| 2,4-Dimethylphenol             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:15 PM                  |
| 2,4-Dinitrophenol              | ND      |      | 1.0                | µg/L  | 1                        | 3/6/2014 07:15 PM                  |
| 2,4-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:15 PM                  |
| 2,6-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:15 PM                  |
| 2-Chloronaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:15 PM                  |
| 2-Chlorophenol                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:15 PM                  |
| 2-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:15 PM                  |
| 2-Methylphenol                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:15 PM                  |
| 2-Nitroaniline                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:15 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-6  
**Collection Date:** 2/27/2014 04:05 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-10  
**Matrix:** GROUNDWATER

| Analyses                          | Result      | Qual | Report Limit | Units       | Dilution Factor | Date Analyzed     |
|-----------------------------------|-------------|------|--------------|-------------|-----------------|-------------------|
| 2-Nitrophenol                     | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| 3&4-Methylphenol                  | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| 3,3'-Dichlorobenzidine            | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| 3-Nitroaniline                    | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| 4,6-Dinitro-2-methylphenol        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| 4-Bromophenyl phenyl ether        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| 4-Chloro-3-methylphenol           | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| 4-Chloroaniline                   | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| 4-Chlorophenyl phenyl ether       | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| 4-Nitroaniline                    | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| 4-Nitrophenol                     | ND          |      | 1.0          | µg/L        | 1               | 3/6/2014 07:15 PM |
| Acenaphthene                      | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| Acenaphthylene                    | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| Acetophenone                      | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| <b>Anthracene</b>                 | <b>0.37</b> |      | <b>0.20</b>  | <b>µg/L</b> | 1               | 3/6/2014 07:15 PM |
| Atrazine                          | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| Benz(a)anthracene                 | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| Benzaldehyde                      | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| Benzo(a)pyrene                    | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| Benzo(b)fluoranthene              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| Benzo(g,h,i)perylene              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| Benzo(k)fluoranthene              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| Bis(2-chloroethoxy)methane        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| Bis(2-chloroethyl)ether           | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| Bis(2-chloroisopropyl)ether       | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>3.4</b>  |      | <b>0.20</b>  | <b>µg/L</b> | 1               | 3/6/2014 07:15 PM |
| Butyl benzyl phthalate            | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| Caprolactam                       | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| Carbazole                         | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| Chrysene                          | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| Dibenz(a,h)anthracene             | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| <b>Dibenzofuran</b>               | <b>1.7</b>  |      | <b>0.20</b>  | <b>µg/L</b> | 1               | 3/6/2014 07:15 PM |
| Diethyl phthalate                 | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| Dimethyl phthalate                | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| Di-n-butyl phthalate              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| Di-n-octyl phthalate              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| Fluoranthene                      | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| <b>Fluorene</b>                   | <b>0.35</b> |      | <b>0.20</b>  | <b>µg/L</b> | 1               | 3/6/2014 07:15 PM |
| Hexachlorobenzene                 | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |
| Hexachlorobutadiene               | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:15 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-6  
**Collection Date:** 2/27/2014 04:05 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-10  
**Matrix:** GROUNDWATER

| Analyses                   | Result      | Qual | Report Limit  | Units       | Dilution Factor    | Date Analyzed     |
|----------------------------|-------------|------|---------------|-------------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND          |      | 0.20          | µg/L        | 1                  | 3/6/2014 07:15 PM |
| Hexachloroethane           | ND          |      | 0.20          | µg/L        | 1                  | 3/6/2014 07:15 PM |
| Indeno(1,2,3-cd)pyrene     | ND          |      | 0.20          | µg/L        | 1                  | 3/6/2014 07:15 PM |
| Isophorone                 | ND          |      | 0.20          | µg/L        | 1                  | 3/6/2014 07:15 PM |
| <b>Naphthalene</b>         | <b>0.52</b> |      | <b>0.20</b>   | <b>µg/L</b> | 1                  | 3/6/2014 07:15 PM |
| Nitrobenzene               | ND          |      | 0.20          | µg/L        | 1                  | 3/6/2014 07:15 PM |
| N-Nitrosodi-n-propylamine  | ND          |      | 0.20          | µg/L        | 1                  | 3/6/2014 07:15 PM |
| N-Nitrosodiphenylamine     | ND          |      | 0.20          | µg/L        | 1                  | 3/6/2014 07:15 PM |
| Pentachlorophenol          | ND          |      | 0.20          | µg/L        | 1                  | 3/6/2014 07:15 PM |
| <b>Phenanthrene</b>        | <b>0.38</b> |      | <b>0.20</b>   | <b>µg/L</b> | 1                  | 3/6/2014 07:15 PM |
| Phenol                     | ND          |      | 0.20          | µg/L        | 1                  | 3/6/2014 07:15 PM |
| Pyrene                     | ND          |      | 0.20          | µg/L        | 1                  | 3/6/2014 07:15 PM |
| Surr: 2,4,6-Tribromophenol | 95.6        |      | 34-129        | %REC        | 1                  | 3/6/2014 07:15 PM |
| Surr: 2-Fluorobiphenyl     | 85.0        |      | 40-125        | %REC        | 1                  | 3/6/2014 07:15 PM |
| Surr: 2-Fluorophenol       | 73.6        |      | 20-120        | %REC        | 1                  | 3/6/2014 07:15 PM |
| Surr: 4-Terphenyl-d14      | 74.4        |      | 40-135        | %REC        | 1                  | 3/6/2014 07:15 PM |
| Surr: Nitrobenzene-d5      | 58.7        |      | 41-120        | %REC        | 1                  | 3/6/2014 07:15 PM |
| Surr: Phenol-d6            | 81.8        |      | 20-120        | %REC        | 1                  | 3/6/2014 07:15 PM |
| <b>VOLATILES - SW8260C</b> |             |      | <b>SW8260</b> |             | Analyst: <b>PC</b> |                   |
| 1,1,1-Trichloroethane      | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 07:46 AM |
| 1,1,2,2-Tetrachloroethane  | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 07:46 AM |
| 1,1,2-Trichloroethane      | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 07:46 AM |
| 1,1-Dichloroethane         | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 07:46 AM |
| 1,1-Dichloroethene         | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 07:46 AM |
| 1,2,4-Trimethylbenzene     | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 07:46 AM |
| 1,2-Dibromoethane          | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 07:46 AM |
| 1,2-Dichloroethane         | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 07:46 AM |
| 1,2-Dichloropropane        | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 07:46 AM |
| 1,3,5-Trimethylbenzene     | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 07:46 AM |
| 2-Butanone                 | ND          |      | 0.010         | mg/L        | 1                  | 3/4/2014 07:46 AM |
| 2-Hexanone                 | ND          |      | 0.010         | mg/L        | 1                  | 3/4/2014 07:46 AM |
| 4-Isopropyltoluene         | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 07:46 AM |
| 4-Methyl-2-pentanone       | ND          |      | 0.010         | mg/L        | 1                  | 3/4/2014 07:46 AM |
| Acetone                    | ND          |      | 0.010         | mg/L        | 1                  | 3/4/2014 07:46 AM |
| Benzene                    | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 07:46 AM |
| Bromodichloromethane       | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 07:46 AM |
| Bromoform                  | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 07:46 AM |
| Bromomethane               | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 07:46 AM |
| Carbon disulfide           | ND          |      | 0.010         | mg/L        | 1                  | 3/4/2014 07:46 AM |
| Carbon tetrachloride       | ND          |      | 0.0050        | mg/L        | 1                  | 3/4/2014 07:46 AM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-6  
**Collection Date:** 2/27/2014 04:05 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-10  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed      |
|------------------------------------|--------|------|----------------|-------|-----------------|--------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:46 AM  |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:46 AM  |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:46 AM  |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:46 AM  |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:46 AM  |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:46 AM  |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:46 AM  |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:46 AM  |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:46 AM  |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 07:46 AM  |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:46 AM  |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 07:46 AM  |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:46 AM  |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:46 AM  |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:46 AM  |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:46 AM  |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:46 AM  |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:46 AM  |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:46 AM  |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:46 AM  |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:46 AM  |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:46 AM  |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 07:46 AM  |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/4/2014 07:46 AM  |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/4/2014 07:46 AM  |
| Surr: 1,2-Dichloroethane-d4        | 97.2   |      | 70-125         | %REC  | 1               | 3/4/2014 07:46 AM  |
| Surr: 4-Bromofluorobenzene         | 98.2   |      | 72-125         | %REC  | 1               | 3/4/2014 07:46 AM  |
| Surr: Dibromofluoromethane         | 98.7   |      | 71-125         | %REC  | 1               | 3/4/2014 07:46 AM  |
| Surr: Toluene-d8                   | 92.8   |      | 75-125         | %REC  | 1               | 3/4/2014 07:46 AM  |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       | Analyst: JKP    |                    |
| Chloride                           | 124    |      | 2.50           | mg/L  | 5               | 3/14/2014 02:37 PM |
| Fluoride                           | 0.309  |      | 0.100          | mg/L  | 1               | 3/14/2014 04:38 AM |
| Nitrogen, Nitrate (As N)           | ND     |      | 0.500          | mg/L  | 5               | 3/16/2014 09:02 PM |
| Sulfate                            | 51.0   |      | 0.500          | mg/L  | 1               | 3/14/2014 04:38 AM |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       | Analyst: PPM    |                    |
| Alkalinity, Bicarbonate (As CaCO3) | 468    |      | 10.0           | mg/L  | 1               | 3/4/2014 11:33 AM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 11:33 AM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 11:33 AM  |
| Alkalinity, Total (As CaCO3)       | 468    |      | 10.0           | mg/L  | 1               | 3/4/2014 11:33 AM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental**

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-6  
**Collection Date:** 2/27/2014 04:05 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-10  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 1,330  |      | 5.00              | µmhos/cm | 1               | 3/4/2014 11:33 AM   |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 6.89   | H    | 0.100             | pH Units | 1               | 3/4/2014 11:33 AM   |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 814    |      | 10.0              | mg/L     | 1               | 3/5/2014 10:40 AM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-29  
**Collection Date:** 2/27/2014 06:05 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-11  
**Matrix:** GROUNDWATER

| Analyses                       | Result | Qual | Report Limit       | Units | Dilution Factor          | Date Analyzed                      |
|--------------------------------|--------|------|--------------------|-------|--------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |        |      |                    |       |                          |                                    |
| Mercury                        | ND     |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: OFO<br>3/7/2014 01:47 PM  |
| <b>DISSOLVED METALS</b>        |        |      |                    |       |                          |                                    |
| Aluminum                       | ND     |      | SW6020<br>0.0100   | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: SKS<br>3/10/2014 03:44 PM |
| Arsenic                        | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:44 PM                 |
| Barium                         | 0.0725 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:44 PM                 |
| Boron                          | 0.171  |      | 0.0200             | mg/L  | 1                        | 3/10/2014 03:44 PM                 |
| Cadmium                        | ND     |      | 0.00200            | mg/L  | 1                        | 3/10/2014 03:44 PM                 |
| Calcium                        | 122    |      | 0.500              | mg/L  | 1                        | 3/10/2014 03:44 PM                 |
| Chromium                       | 0.250  |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:44 PM                 |
| Cobalt                         | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:44 PM                 |
| Copper                         | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:44 PM                 |
| Iron                           | ND     |      | 0.200              | mg/L  | 1                        | 3/10/2014 03:44 PM                 |
| Lead                           | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:44 PM                 |
| Magnesium                      | 16.3   |      | 0.200              | mg/L  | 1                        | 3/10/2014 03:44 PM                 |
| Manganese                      | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:44 PM                 |
| Molybdenum                     | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:44 PM                 |
| Nickel                         | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:44 PM                 |
| Potassium                      | 2.37   |      | 0.200              | mg/L  | 1                        | 3/10/2014 03:44 PM                 |
| Selenium                       | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:44 PM                 |
| Silver                         | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:44 PM                 |
| Sodium                         | 59.3   |      | 0.200              | mg/L  | 1                        | 3/10/2014 03:44 PM                 |
| Uranium                        | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:44 PM                 |
| Zinc                           | 0.0115 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:44 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |        |      |                    |       |                          |                                    |
| 1,1'-Biphenyl                  | ND     |      | SW8270<br>0.20     | µg/L  | Prep Date: 3/4/2014<br>1 | Analyst: LG<br>3/5/2014 02:08 PM   |
| 1-Methylnaphthalene            | ND     |      | 0.20               | µg/L  | 1                        | 3/5/2014 02:08 PM                  |
| 2,4,5-Trichlorophenol          | ND     |      | 0.20               | µg/L  | 1                        | 3/5/2014 02:08 PM                  |
| 2,4,6-Trichlorophenol          | ND     |      | 0.20               | µg/L  | 1                        | 3/5/2014 02:08 PM                  |
| 2,4-Dichlorophenol             | ND     |      | 0.20               | µg/L  | 1                        | 3/5/2014 02:08 PM                  |
| 2,4-Dimethylphenol             | ND     |      | 0.20               | µg/L  | 1                        | 3/5/2014 02:08 PM                  |
| 2,4-Dinitrophenol              | ND     |      | 1.0                | µg/L  | 1                        | 3/5/2014 02:08 PM                  |
| 2,4-Dinitrotoluene             | ND     |      | 0.20               | µg/L  | 1                        | 3/5/2014 02:08 PM                  |
| 2,6-Dinitrotoluene             | ND     |      | 0.20               | µg/L  | 1                        | 3/5/2014 02:08 PM                  |
| 2-Chloronaphthalene            | ND     |      | 0.20               | µg/L  | 1                        | 3/5/2014 02:08 PM                  |
| 2-Chlorophenol                 | ND     |      | 0.20               | µg/L  | 1                        | 3/5/2014 02:08 PM                  |
| 2-Methylnaphthalene            | ND     |      | 0.20               | µg/L  | 1                        | 3/5/2014 02:08 PM                  |
| 2-Methylphenol                 | ND     |      | 0.20               | µg/L  | 1                        | 3/5/2014 02:08 PM                  |
| 2-Nitroaniline                 | ND     |      | 0.20               | µg/L  | 1                        | 3/5/2014 02:08 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-29  
**Collection Date:** 2/27/2014 06:05 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-11  
**Matrix:** GROUNDWATER

| Analyses                    | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed     |
|-----------------------------|--------|------|--------------|-------|-----------------|-------------------|
| 2-Nitrophenol               | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| 3&4-Methylphenol            | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| 3,3'-Dichlorobenzidine      | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| 3-Nitroaniline              | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| 4,6-Dinitro-2-methylphenol  | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| 4-Bromophenyl phenyl ether  | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| 4-Chloro-3-methylphenol     | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| 4-Chloroaniline             | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| 4-Chlorophenyl phenyl ether | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| 4-Nitroaniline              | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| 4-Nitrophenol               | ND     |      | 1.0          | µg/L  | 1               | 3/5/2014 02:08 PM |
| Acenaphthene                | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Acenaphthylene              | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Acetophenone                | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Anthracene                  | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Atrazine                    | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Benz(a)anthracene           | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Benzaldehyde                | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Benzo(a)pyrene              | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Benzo(b)fluoranthene        | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Benzo(g,h,i)perylene        | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Benzo(k)fluoranthene        | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Bis(2-chloroethoxy)methane  | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Bis(2-chloroethyl)ether     | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Bis(2-chloroisopropyl)ether | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Bis(2-ethylhexyl)phthalate  | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Butyl benzyl phthalate      | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Caprolactam                 | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Carbazole                   | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Chrysene                    | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Dibenz(a,h)anthracene       | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Dibenzofuran                | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Diethyl phthalate           | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Dimethyl phthalate          | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Di-n-butyl phthalate        | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Di-n-octyl phthalate        | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Fluoranthene                | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Fluorene                    | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Hexachlorobenzene           | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |
| Hexachlorobutadiene         | ND     |      | 0.20         | µg/L  | 1               | 3/5/2014 02:08 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-29  
**Collection Date:** 2/27/2014 06:05 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-11  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/5/2014 02:08 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/5/2014 02:08 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/5/2014 02:08 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/5/2014 02:08 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/5/2014 02:08 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/5/2014 02:08 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/5/2014 02:08 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/5/2014 02:08 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/5/2014 02:08 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/5/2014 02:08 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/5/2014 02:08 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/5/2014 02:08 PM |
| Surr: 2,4,6-Tribromophenol | 77.7   |      | 34-129        | %REC  | 1                  | 3/5/2014 02:08 PM |
| Surr: 2-Fluorobiphenyl     | 74.5   |      | 40-125        | %REC  | 1                  | 3/5/2014 02:08 PM |
| Surr: 2-Fluorophenol       | 69.4   |      | 20-120        | %REC  | 1                  | 3/5/2014 02:08 PM |
| Surr: 4-Terphenyl-d14      | 80.2   |      | 40-135        | %REC  | 1                  | 3/5/2014 02:08 PM |
| Surr: Nitrobenzene-d5      | 72.0   |      | 41-120        | %REC  | 1                  | 3/5/2014 02:08 PM |
| Surr: Phenol-d6            | 66.7   |      | 20-120        | %REC  | 1                  | 3/5/2014 02:08 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 02:10 AM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 02:10 AM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 02:10 AM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 02:10 AM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 02:10 AM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 02:10 AM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 02:10 AM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 02:10 AM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 02:10 AM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 02:10 AM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 02:10 AM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 02:10 AM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 02:10 AM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 02:10 AM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 02:10 AM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 02:10 AM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 02:10 AM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 02:10 AM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 02:10 AM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 02:10 AM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 02:10 AM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-29  
**Collection Date:** 2/27/2014 06:05 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-11  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed      |
|------------------------------------|--------|------|----------------|-------|-----------------|--------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 02:10 AM  |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 02:10 AM  |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 02:10 AM  |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 02:10 AM  |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 02:10 AM  |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 02:10 AM  |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 02:10 AM  |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 02:10 AM  |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 02:10 AM  |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 02:10 AM  |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 02:10 AM  |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 02:10 AM  |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 02:10 AM  |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 02:10 AM  |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 02:10 AM  |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 02:10 AM  |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 02:10 AM  |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 02:10 AM  |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 02:10 AM  |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 02:10 AM  |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 02:10 AM  |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 02:10 AM  |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 02:10 AM  |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/4/2014 02:10 AM  |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/4/2014 02:10 AM  |
| Surr: 1,2-Dichloroethane-d4        | 98.3   |      | 70-125         | %REC  | 1               | 3/4/2014 02:10 AM  |
| Surr: 4-Bromofluorobenzene         | 95.4   |      | 72-125         | %REC  | 1               | 3/4/2014 02:10 AM  |
| Surr: Dibromofluoromethane         | 100    |      | 71-125         | %REC  | 1               | 3/4/2014 02:10 AM  |
| Surr: Toluene-d8                   | 92.9   |      | 75-125         | %REC  | 1               | 3/4/2014 02:10 AM  |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       |                 | Analyst: JKP       |
| Chloride                           | 141    |      | 2.50           | mg/L  | 5               | 3/14/2014 02:52 PM |
| Fluoride                           | 0.811  |      | 0.100          | mg/L  | 1               | 3/14/2014 04:52 AM |
| Nitrogen, Nitrate (As N)           | 3.22   |      | 0.500          | mg/L  | 5               | 3/16/2014 09:28 PM |
| Sulfate                            | 74.4   |      | 0.500          | mg/L  | 1               | 3/14/2014 04:52 AM |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       |                 | Analyst: PPM       |
| Alkalinity, Bicarbonate (As CaCO3) | 262    |      | 10.0           | mg/L  | 1               | 3/4/2014 11:39 AM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 11:39 AM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 11:39 AM  |
| Alkalinity, Total (As CaCO3)       | 262    |      | 10.0           | mg/L  | 1               | 3/4/2014 11:39 AM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental****Date:** 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-29  
**Collection Date:** 2/27/2014 06:05 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-11  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 1,080  |      | 5.00              | µmhos/cm | 1               | 3/4/2014 11:39 AM   |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 6.82   | H    | 0.100             | pH Units | 1               | 3/4/2014 11:39 AM   |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 660    |      | 10.0              | mg/L     | 1               | 3/6/2014 04:45 PM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** Dup-2  
**Collection Date:** 2/27/2014 06:05 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-12  
**Matrix:** GROUNDWATER

| Analyses                       | Result  | Qual | Report Limit       | Units | Dilution Factor          | Date Analyzed                      |
|--------------------------------|---------|------|--------------------|-------|--------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |         |      |                    |       |                          |                                    |
| Mercury                        | ND      |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: OFO<br>3/7/2014 02:14 PM  |
| <b>DISSOLVED METALS</b>        |         |      |                    |       |                          |                                    |
| Aluminum                       | ND      |      | SW6020<br>0.0100   | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: SKS<br>3/10/2014 03:59 PM |
| Arsenic                        | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:59 PM                 |
| Barium                         | 0.0764  |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:59 PM                 |
| Boron                          | 0.183   |      | 0.0200             | mg/L  | 1                        | 3/10/2014 03:59 PM                 |
| Cadmium                        | ND      |      | 0.00200            | mg/L  | 1                        | 3/10/2014 03:59 PM                 |
| Calcium                        | 125     |      | 0.500              | mg/L  | 1                        | 3/10/2014 03:59 PM                 |
| Chromium                       | 0.261   |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:59 PM                 |
| Cobalt                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:59 PM                 |
| Copper                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:59 PM                 |
| Iron                           | ND      |      | 0.200              | mg/L  | 1                        | 3/10/2014 03:59 PM                 |
| Lead                           | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:59 PM                 |
| Magnesium                      | 16.7    |      | 0.200              | mg/L  | 1                        | 3/10/2014 03:59 PM                 |
| Manganese                      | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:59 PM                 |
| Molybdenum                     | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:59 PM                 |
| Nickel                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:59 PM                 |
| Potassium                      | 2.42    |      | 0.200              | mg/L  | 1                        | 3/10/2014 03:59 PM                 |
| Selenium                       | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:59 PM                 |
| Silver                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:59 PM                 |
| Sodium                         | 61.9    |      | 0.200              | mg/L  | 1                        | 3/10/2014 03:59 PM                 |
| Uranium                        | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:59 PM                 |
| Zinc                           | 0.00739 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 03:59 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |         |      |                    |       |                          |                                    |
| 1,1'-Biphenyl                  | ND      |      | SW8270<br>0.20     | µg/L  | Prep Date: 3/4/2014<br>1 | Analyst: LG<br>3/6/2014 07:34 PM   |
| 1-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:34 PM                  |
| 2,4,5-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:34 PM                  |
| 2,4,6-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:34 PM                  |
| 2,4-Dichlorophenol             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:34 PM                  |
| 2,4-Dimethylphenol             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:34 PM                  |
| 2,4-Dinitrophenol              | ND      |      | 1.0                | µg/L  | 1                        | 3/6/2014 07:34 PM                  |
| 2,4-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:34 PM                  |
| 2,6-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:34 PM                  |
| 2-Chloronaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:34 PM                  |
| 2-Chlorophenol                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:34 PM                  |
| 2-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:34 PM                  |
| 2-Methylphenol                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:34 PM                  |
| 2-Nitroaniline                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:34 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** Dup-2  
**Collection Date:** 2/27/2014 06:05 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-12  
**Matrix:** GROUNDWATER

| Analyses                    | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed     |
|-----------------------------|--------|------|--------------|-------|-----------------|-------------------|
| 2-Nitrophenol               | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| 3&4-Methylphenol            | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| 3,3'-Dichlorobenzidine      | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| 3-Nitroaniline              | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| 4,6-Dinitro-2-methylphenol  | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| 4-Bromophenyl phenyl ether  | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| 4-Chloro-3-methylphenol     | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| 4-Chloroaniline             | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| 4-Chlorophenyl phenyl ether | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| 4-Nitroaniline              | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| 4-Nitrophenol               | ND     |      | 1.0          | µg/L  | 1               | 3/6/2014 07:34 PM |
| Acenaphthene                | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Acenaphthylene              | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Acetophenone                | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Anthracene                  | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Atrazine                    | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Benz(a)anthracene           | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Benzaldehyde                | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Benzo(a)pyrene              | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Benzo(b)fluoranthene        | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Benzo(g,h,i)perylene        | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Benzo(k)fluoranthene        | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Bis(2-chloroethoxy)methane  | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Bis(2-chloroethyl)ether     | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Bis(2-chloroisopropyl)ether | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Bis(2-ethylhexyl)phthalate  | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Butyl benzyl phthalate      | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Caprolactam                 | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Carbazole                   | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Chrysene                    | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Dibenz(a,h)anthracene       | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Dibenzofuran                | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Diethyl phthalate           | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Dimethyl phthalate          | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Di-n-butyl phthalate        | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Di-n-octyl phthalate        | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Fluoranthene                | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Fluorene                    | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Hexachlorobenzene           | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |
| Hexachlorobutadiene         | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 07:34 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** Dup-2  
**Collection Date:** 2/27/2014 06:05 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-12  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 07:34 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 07:34 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 07:34 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 07:34 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 07:34 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 07:34 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 07:34 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 07:34 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 07:34 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 07:34 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 07:34 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 07:34 PM |
| Surr: 2,4,6-Tribromophenol | 81.0   |      | 34-129        | %REC  | 1                  | 3/6/2014 07:34 PM |
| Surr: 2-Fluorobiphenyl     | 76.3   |      | 40-125        | %REC  | 1                  | 3/6/2014 07:34 PM |
| Surr: 2-Fluorophenol       | 74.3   |      | 20-120        | %REC  | 1                  | 3/6/2014 07:34 PM |
| Surr: 4-Terphenyl-d14      | 79.1   |      | 40-135        | %REC  | 1                  | 3/6/2014 07:34 PM |
| Surr: Nitrobenzene-d5      | 79.9   |      | 41-120        | %REC  | 1                  | 3/6/2014 07:34 PM |
| Surr: Phenol-d6            | 69.0   |      | 20-120        | %REC  | 1                  | 3/6/2014 07:34 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:38 AM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:38 AM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:38 AM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:38 AM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:38 AM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:38 AM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:38 AM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:38 AM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:38 AM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:38 AM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 08:38 AM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 08:38 AM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:38 AM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 08:38 AM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 08:38 AM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:38 AM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:38 AM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:38 AM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:38 AM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 08:38 AM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:38 AM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** Dup-2  
**Collection Date:** 2/27/2014 06:05 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-12  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed      |
|------------------------------------|--------|------|----------------|-------|-----------------|--------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:38 AM  |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:38 AM  |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:38 AM  |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:38 AM  |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:38 AM  |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:38 AM  |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:38 AM  |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:38 AM  |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:38 AM  |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 08:38 AM  |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:38 AM  |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 08:38 AM  |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:38 AM  |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:38 AM  |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:38 AM  |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:38 AM  |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:38 AM  |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:38 AM  |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:38 AM  |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:38 AM  |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:38 AM  |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:38 AM  |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:38 AM  |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/4/2014 08:38 AM  |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/4/2014 08:38 AM  |
| Surr: 1,2-Dichloroethane-d4        | 94.6   |      | 70-125         | %REC  | 1               | 3/4/2014 08:38 AM  |
| Surr: 4-Bromofluorobenzene         | 95.8   |      | 72-125         | %REC  | 1               | 3/4/2014 08:38 AM  |
| Surr: Dibromofluoromethane         | 98.0   |      | 71-125         | %REC  | 1               | 3/4/2014 08:38 AM  |
| Surr: Toluene-d8                   | 92.6   |      | 75-125         | %REC  | 1               | 3/4/2014 08:38 AM  |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       | Analyst: JKP    |                    |
| Chloride                           | 141    |      | 2.50           | mg/L  | 5               | 3/14/2014 03:35 PM |
| Fluoride                           | 0.819  |      | 0.100          | mg/L  | 1               | 3/14/2014 05:36 AM |
| Nitrogen, Nitrate (As N)           | 3.37   |      | 0.500          | mg/L  | 5               | 3/16/2014 10:46 PM |
| Sulfate                            | 74.3   |      | 0.500          | mg/L  | 1               | 3/14/2014 05:36 AM |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       | Analyst: PPM    |                    |
| Alkalinity, Bicarbonate (As CaCO3) | 844    |      | 10.0           | mg/L  | 1               | 3/4/2014 11:49 AM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 11:49 AM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 11:49 AM  |
| Alkalinity, Total (As CaCO3)       | 844    |      | 10.0           | mg/L  | 1               | 3/4/2014 11:49 AM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



**ALS Environmental**

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** Dup-2  
**Collection Date:** 2/27/2014 06:05 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-12  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 1,080  |      | 5.00              | µmhos/cm | 1               | 3/4/2014 11:49 AM   |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 7.15   | H    | 0.100             | pH Units | 1               | 3/4/2014 11:49 AM   |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 690    |      | 10.0              | mg/L     | 1               | 3/6/2014 04:45 PM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-30  
**Collection Date:** 2/27/2014 07:50 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-13  
**Matrix:** GROUNDWATER

| Analyses                       | Result  | Qual | Report Limit       | Units | Dilution Factor          | Date Analyzed                      |
|--------------------------------|---------|------|--------------------|-------|--------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |         |      |                    |       |                          |                                    |
| Mercury                        | ND      |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: OFO<br>3/7/2014 02:16 PM  |
| <b>DISSOLVED METALS</b>        |         |      |                    |       |                          |                                    |
| Aluminum                       | 0.0201  |      | SW6020<br>0.0100   | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: SKS<br>3/10/2014 04:01 PM |
| Arsenic                        | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:01 PM                 |
| Barium                         | 0.0672  |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:01 PM                 |
| Boron                          | 0.180   |      | 0.0200             | mg/L  | 1                        | 3/10/2014 04:01 PM                 |
| Cadmium                        | ND      |      | 0.00200            | mg/L  | 1                        | 3/10/2014 04:01 PM                 |
| Calcium                        | 97.0    |      | 0.500              | mg/L  | 1                        | 3/10/2014 04:01 PM                 |
| Chromium                       | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:01 PM                 |
| Cobalt                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:01 PM                 |
| Copper                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:01 PM                 |
| Iron                           | ND      |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:01 PM                 |
| Lead                           | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:01 PM                 |
| Magnesium                      | 12.5    |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:01 PM                 |
| Manganese                      | 0.0644  |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:01 PM                 |
| Molybdenum                     | 0.00588 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:01 PM                 |
| Nickel                         | 0.0516  |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:01 PM                 |
| Potassium                      | 2.21    |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:01 PM                 |
| Selenium                       | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:01 PM                 |
| Silver                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:01 PM                 |
| Sodium                         | 38.1    |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:01 PM                 |
| Uranium                        | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:01 PM                 |
| Zinc                           | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:01 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |         |      |                    |       |                          |                                    |
| 1,1'-Biphenyl                  | ND      |      | SW8270<br>0.20     | µg/L  | Prep Date: 3/4/2014<br>1 | Analyst: LG<br>3/6/2014 07:53 PM   |
| 1-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:53 PM                  |
| 2,4,5-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:53 PM                  |
| 2,4,6-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:53 PM                  |
| 2,4-Dichlorophenol             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:53 PM                  |
| 2,4-Dimethylphenol             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:53 PM                  |
| 2,4-Dinitrophenol              | ND      |      | 1.0                | µg/L  | 1                        | 3/6/2014 07:53 PM                  |
| 2,4-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:53 PM                  |
| 2,6-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:53 PM                  |
| 2-Chloronaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:53 PM                  |
| 2-Chlorophenol                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:53 PM                  |
| 2-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:53 PM                  |
| 2-Methylphenol                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:53 PM                  |
| 2-Nitroaniline                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 07:53 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-30  
**Collection Date:** 2/27/2014 07:50 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-13  
**Matrix:** GROUNDWATER

| Analyses                          | Result      | Qual | Report Limit | Units       | Dilution Factor | Date Analyzed     |
|-----------------------------------|-------------|------|--------------|-------------|-----------------|-------------------|
| 2-Nitrophenol                     | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| 3&4-Methylphenol                  | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| 3,3'-Dichlorobenzidine            | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| 3-Nitroaniline                    | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| 4,6-Dinitro-2-methylphenol        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| 4-Bromophenyl phenyl ether        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| 4-Chloro-3-methylphenol           | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| 4-Chloroaniline                   | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| 4-Chlorophenyl phenyl ether       | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| 4-Nitroaniline                    | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| 4-Nitrophenol                     | ND          |      | 1.0          | µg/L        | 1               | 3/6/2014 07:53 PM |
| Acenaphthene                      | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| Acenaphthylene                    | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| Acetophenone                      | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| Anthracene                        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| Atrazine                          | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| Benz(a)anthracene                 | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| Benzaldehyde                      | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| Benzo(a)pyrene                    | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| Benzo(b)fluoranthene              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| Benzo(g,h,i)perylene              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| Benzo(k)fluoranthene              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| Bis(2-chloroethoxy)methane        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| Bis(2-chloroethyl)ether           | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| Bis(2-chloroisopropyl)ether       | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>0.36</b> |      | <b>0.20</b>  | <b>µg/L</b> | 1               | 3/6/2014 07:53 PM |
| Butyl benzyl phthalate            | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| Caprolactam                       | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| Carbazole                         | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| Chrysene                          | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| Dibenz(a,h)anthracene             | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| Dibenzofuran                      | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| <b>Diethyl phthalate</b>          | <b>0.24</b> |      | <b>0.20</b>  | <b>µg/L</b> | 1               | 3/6/2014 07:53 PM |
| Dimethyl phthalate                | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| Di-n-butyl phthalate              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| Di-n-octyl phthalate              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| Fluoranthene                      | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| Fluorene                          | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| Hexachlorobenzene                 | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |
| Hexachlorobutadiene               | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 07:53 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-30  
**Collection Date:** 2/27/2014 07:50 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-13  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 07:53 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 07:53 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 07:53 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 07:53 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 07:53 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 07:53 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 07:53 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 07:53 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 07:53 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 07:53 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 07:53 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 07:53 PM |
| Surr: 2,4,6-Tribromophenol | 81.6   |      | 34-129        | %REC  | 1                  | 3/6/2014 07:53 PM |
| Surr: 2-Fluorobiphenyl     | 76.9   |      | 40-125        | %REC  | 1                  | 3/6/2014 07:53 PM |
| Surr: 2-Fluorophenol       | 69.7   |      | 20-120        | %REC  | 1                  | 3/6/2014 07:53 PM |
| Surr: 4-Terphenyl-d14      | 78.8   |      | 40-135        | %REC  | 1                  | 3/6/2014 07:53 PM |
| Surr: Nitrobenzene-d5      | 79.1   |      | 41-120        | %REC  | 1                  | 3/6/2014 07:53 PM |
| Surr: Phenol-d6            | 66.7   |      | 20-120        | %REC  | 1                  | 3/6/2014 07:53 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:12 AM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:12 AM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:12 AM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:12 AM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:12 AM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:12 AM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:12 AM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:12 AM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:12 AM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:12 AM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 08:12 AM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 08:12 AM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:12 AM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 08:12 AM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 08:12 AM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:12 AM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:12 AM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:12 AM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:12 AM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 08:12 AM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 08:12 AM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-30  
**Collection Date:** 2/27/2014 07:50 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-13  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed      |
|------------------------------------|--------|------|----------------|-------|-----------------|--------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:12 AM  |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:12 AM  |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:12 AM  |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:12 AM  |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:12 AM  |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:12 AM  |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:12 AM  |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:12 AM  |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:12 AM  |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 08:12 AM  |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:12 AM  |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 08:12 AM  |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:12 AM  |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:12 AM  |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:12 AM  |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:12 AM  |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:12 AM  |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:12 AM  |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:12 AM  |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:12 AM  |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:12 AM  |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:12 AM  |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 08:12 AM  |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/4/2014 08:12 AM  |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/4/2014 08:12 AM  |
| Surr: 1,2-Dichloroethane-d4        | 97.0   |      | 70-125         | %REC  | 1               | 3/4/2014 08:12 AM  |
| Surr: 4-Bromofluorobenzene         | 96.2   |      | 72-125         | %REC  | 1               | 3/4/2014 08:12 AM  |
| Surr: Dibromofluoromethane         | 98.0   |      | 71-125         | %REC  | 1               | 3/4/2014 08:12 AM  |
| Surr: Toluene-d8                   | 92.9   |      | 75-125         | %REC  | 1               | 3/4/2014 08:12 AM  |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       | Analyst: JKP    |                    |
| Chloride                           | 64.0   |      | 0.500          | mg/L  | 1               | 3/14/2014 05:50 AM |
| Fluoride                           | 1.07   |      | 0.100          | mg/L  | 1               | 3/14/2014 05:50 AM |
| Nitrogen, Nitrate (As N)           | 2.96   |      | 0.500          | mg/L  | 5               | 3/16/2014 11:11 PM |
| Sulfate                            | 90.0   |      | 0.500          | mg/L  | 1               | 3/14/2014 05:50 AM |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       | Analyst: PPM    |                    |
| Alkalinity, Bicarbonate (As CaCO3) | 218    |      | 10.0           | mg/L  | 1               | 3/4/2014 11:54 AM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 11:54 AM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 11:54 AM  |
| Alkalinity, Total (As CaCO3)       | 218    |      | 10.0           | mg/L  | 1               | 3/4/2014 11:54 AM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental**

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-30  
**Collection Date:** 2/27/2014 07:50 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-13  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 780    |      | 5.00              | µmhos/cm | 1               | 3/4/2014 11:54 AM   |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 6.67   | H    | 0.100             | pH Units | 1               | 3/4/2014 11:54 AM   |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 476    |      | 10.0              | mg/L     | 1               | 3/6/2014 04:45 PM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-24  
**Collection Date:** 2/27/2014 10:59 AM

**Work Order:** 14030008  
**Lab ID:** 14030008-14  
**Matrix:** GROUNDWATER

| Analyses                       | Result | Qual | Report Limit       | Units | Dilution Factor          | Date Analyzed                      |
|--------------------------------|--------|------|--------------------|-------|--------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |        |      |                    |       |                          |                                    |
| Mercury                        | ND     |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: OFO<br>3/7/2014 02:17 PM  |
| <b>DISSOLVED METALS</b>        |        |      |                    |       |                          |                                    |
| Aluminum                       | 0.0247 |      | SW6020<br>0.0100   | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: SKS<br>3/10/2014 04:04 PM |
| Arsenic                        | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:04 PM                 |
| Barium                         | 0.0803 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:04 PM                 |
| Boron                          | 0.197  |      | 0.0200             | mg/L  | 1                        | 3/10/2014 04:04 PM                 |
| Cadmium                        | ND     |      | 0.00200            | mg/L  | 1                        | 3/10/2014 04:04 PM                 |
| Calcium                        | 81.7   |      | 0.500              | mg/L  | 1                        | 3/10/2014 04:04 PM                 |
| Chromium                       | 0.0128 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:04 PM                 |
| Cobalt                         | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:04 PM                 |
| Copper                         | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:04 PM                 |
| Iron                           | ND     |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:04 PM                 |
| Lead                           | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:04 PM                 |
| Magnesium                      | 10.5   |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:04 PM                 |
| Manganese                      | 0.0139 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:04 PM                 |
| Molybdenum                     | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:04 PM                 |
| Nickel                         | 0.0213 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:04 PM                 |
| Potassium                      | 2.05   |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:04 PM                 |
| Selenium                       | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:04 PM                 |
| Silver                         | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:04 PM                 |
| Sodium                         | 38.5   |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:04 PM                 |
| Uranium                        | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:04 PM                 |
| Zinc                           | 0.0207 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:04 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |        |      |                    |       |                          |                                    |
| 1,1'-Biphenyl                  | ND     |      | SW8270<br>0.20     | µg/L  | Prep Date: 3/4/2014<br>1 | Analyst: LG<br>3/6/2014 08:12 PM   |
| 1-Methylnaphthalene            | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:12 PM                  |
| 2,4,5-Trichlorophenol          | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:12 PM                  |
| 2,4,6-Trichlorophenol          | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:12 PM                  |
| 2,4-Dichlorophenol             | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:12 PM                  |
| 2,4-Dimethylphenol             | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:12 PM                  |
| 2,4-Dinitrophenol              | ND     |      | 1.0                | µg/L  | 1                        | 3/6/2014 08:12 PM                  |
| 2,4-Dinitrotoluene             | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:12 PM                  |
| 2,6-Dinitrotoluene             | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:12 PM                  |
| 2-Chloronaphthalene            | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:12 PM                  |
| 2-Chlorophenol                 | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:12 PM                  |
| 2-Methylnaphthalene            | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:12 PM                  |
| 2-Methylphenol                 | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:12 PM                  |
| 2-Nitroaniline                 | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:12 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-24  
**Collection Date:** 2/27/2014 10:59 AM

**Work Order:** 14030008  
**Lab ID:** 14030008-14  
**Matrix:** GROUNDWATER

| Analyses                    | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed     |
|-----------------------------|--------|------|--------------|-------|-----------------|-------------------|
| 2-Nitrophenol               | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| 3&4-Methylphenol            | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| 3,3'-Dichlorobenzidine      | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| 3-Nitroaniline              | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| 4,6-Dinitro-2-methylphenol  | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| 4-Bromophenyl phenyl ether  | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| 4-Chloro-3-methylphenol     | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| 4-Chloroaniline             | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| 4-Chlorophenyl phenyl ether | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| 4-Nitroaniline              | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| 4-Nitrophenol               | ND     |      | 1.0          | µg/L  | 1               | 3/6/2014 08:12 PM |
| Acenaphthene                | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Acenaphthylene              | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Acetophenone                | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Anthracene                  | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Atrazine                    | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Benz(a)anthracene           | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Benzaldehyde                | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Benzo(a)pyrene              | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Benzo(b)fluoranthene        | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Benzo(g,h,i)perylene        | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Benzo(k)fluoranthene        | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Bis(2-chloroethoxy)methane  | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Bis(2-chloroethyl)ether     | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Bis(2-chloroisopropyl)ether | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Bis(2-ethylhexyl)phthalate  | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Butyl benzyl phthalate      | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Caprolactam                 | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Carbazole                   | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Chrysene                    | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Dibenz(a,h)anthracene       | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Dibenzofuran                | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Diethyl phthalate           | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Dimethyl phthalate          | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Di-n-butyl phthalate        | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Di-n-octyl phthalate        | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Fluoranthene                | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Fluorene                    | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Hexachlorobenzene           | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |
| Hexachlorobutadiene         | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 08:12 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-24  
**Collection Date:** 2/27/2014 10:59 AM

**Work Order:** 14030008  
**Lab ID:** 14030008-14  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:12 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:12 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:12 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:12 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:12 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:12 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:12 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:12 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:12 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:12 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:12 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:12 PM |
| Surr: 2,4,6-Tribromophenol | 81.1   |      | 34-129        | %REC  | 1                  | 3/6/2014 08:12 PM |
| Surr: 2-Fluorobiphenyl     | 66.2   |      | 40-125        | %REC  | 1                  | 3/6/2014 08:12 PM |
| Surr: 2-Fluorophenol       | 67.6   |      | 20-120        | %REC  | 1                  | 3/6/2014 08:12 PM |
| Surr: 4-Terphenyl-d14      | 77.6   |      | 40-135        | %REC  | 1                  | 3/6/2014 08:12 PM |
| Surr: Nitrobenzene-d5      | 68.2   |      | 41-120        | %REC  | 1                  | 3/6/2014 08:12 PM |
| Surr: Phenol-d6            | 64.3   |      | 20-120        | %REC  | 1                  | 3/6/2014 08:12 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:04 AM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:04 AM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:04 AM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:04 AM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:04 AM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:04 AM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:04 AM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:04 AM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:04 AM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:04 AM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 09:04 AM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 09:04 AM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:04 AM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 09:04 AM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 09:04 AM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:04 AM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:04 AM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:04 AM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:04 AM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 09:04 AM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:04 AM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-24  
**Collection Date:** 2/27/2014 10:59 AM

**Work Order:** 14030008  
**Lab ID:** 14030008-14  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed      |
|------------------------------------|--------|------|----------------|-------|-----------------|--------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:04 AM  |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:04 AM  |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:04 AM  |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:04 AM  |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:04 AM  |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:04 AM  |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:04 AM  |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:04 AM  |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:04 AM  |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 09:04 AM  |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:04 AM  |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 09:04 AM  |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:04 AM  |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:04 AM  |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:04 AM  |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:04 AM  |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:04 AM  |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:04 AM  |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:04 AM  |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:04 AM  |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:04 AM  |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:04 AM  |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:04 AM  |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/4/2014 09:04 AM  |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/4/2014 09:04 AM  |
| Surr: 1,2-Dichloroethane-d4        | 94.5   |      | 70-125         | %REC  | 1               | 3/4/2014 09:04 AM  |
| Surr: 4-Bromofluorobenzene         | 96.8   |      | 72-125         | %REC  | 1               | 3/4/2014 09:04 AM  |
| Surr: Dibromofluoromethane         | 96.2   |      | 71-125         | %REC  | 1               | 3/4/2014 09:04 AM  |
| Surr: Toluene-d8                   | 93.2   |      | 75-125         | %REC  | 1               | 3/4/2014 09:04 AM  |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       | Analyst: JKP    |                    |
| Chloride                           | 37.3   |      | 0.500          | mg/L  | 1               | 3/14/2014 06:05 AM |
| Fluoride                           | 2.28   |      | 0.100          | mg/L  | 1               | 3/14/2014 06:05 AM |
| Nitrogen, Nitrate (As N)           | 2.11   |      | 0.500          | mg/L  | 5               | 3/16/2014 11:37 PM |
| Sulfate                            | 51.3   |      | 0.500          | mg/L  | 1               | 3/14/2014 06:05 AM |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       | Analyst: PPM    |                    |
| Alkalinity, Bicarbonate (As CaCO3) | 238    |      | 10.0           | mg/L  | 1               | 3/4/2014 12:00 PM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 12:00 PM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 12:00 PM  |
| Alkalinity, Total (As CaCO3)       | 238    |      | 10.0           | mg/L  | 1               | 3/4/2014 12:00 PM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental**

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-24  
**Collection Date:** 2/27/2014 10:59 AM

**Work Order:** 14030008  
**Lab ID:** 14030008-14  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 661    |      | 5.00              | µmhos/cm | 1               | 3/4/2014 12:00 PM   |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 7.06   | H    | 0.100             | pH Units | 1               | 3/4/2014 12:00 PM   |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 396    |      | 10.0              | mg/L     | 1               | 3/5/2014 10:40 AM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-13  
**Collection Date:** 2/27/2014 01:28 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-15  
**Matrix:** GROUNDWATER

| Analyses                       | Result  | Qual | Report Limit       | Units | Dilution Factor          | Date Analyzed                      |
|--------------------------------|---------|------|--------------------|-------|--------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |         |      |                    |       |                          |                                    |
| Mercury                        | ND      |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: OFO<br>3/7/2014 02:19 PM  |
| <b>DISSOLVED METALS</b>        |         |      |                    |       |                          |                                    |
| Aluminum                       | 0.0110  |      | SW6020<br>0.0100   | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: SKS<br>3/10/2014 04:06 PM |
| Arsenic                        | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:06 PM                 |
| Barium                         | 0.191   |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:06 PM                 |
| Boron                          | 0.258   |      | 0.0200             | mg/L  | 1                        | 3/10/2014 04:06 PM                 |
| Cadmium                        | ND      |      | 0.00200            | mg/L  | 1                        | 3/10/2014 04:06 PM                 |
| Calcium                        | 373     |      | 5.00               | mg/L  | 10                       | 3/11/2014 03:56 PM                 |
| Chromium                       | 0.0140  |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:06 PM                 |
| Cobalt                         | 0.00541 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:06 PM                 |
| Copper                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:06 PM                 |
| Iron                           | 0.321   |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:06 PM                 |
| Lead                           | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:06 PM                 |
| Magnesium                      | 44.7    |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:06 PM                 |
| Manganese                      | 1.01    |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:06 PM                 |
| Molybdenum                     | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:06 PM                 |
| Nickel                         | 0.0300  |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:06 PM                 |
| Potassium                      | 5.06    |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:06 PM                 |
| Selenium                       | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:06 PM                 |
| Silver                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:06 PM                 |
| Sodium                         | 99.5    |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:06 PM                 |
| Uranium                        | 0.0173  |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:06 PM                 |
| Zinc                           | 0.0291  |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:06 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |         |      |                    |       |                          |                                    |
| 1,1'-Biphenyl                  | 2.4     |      | SW8270<br>0.20     | µg/L  | Prep Date: 3/4/2014<br>1 | Analyst: LG<br>3/6/2014 08:32 PM   |
| 1-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:32 PM                  |
| 2,4,5-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:32 PM                  |
| 2,4,6-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:32 PM                  |
| 2,4-Dichlorophenol             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:32 PM                  |
| 2,4-Dimethylphenol             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:32 PM                  |
| 2,4-Dinitrophenol              | ND      |      | 1.0                | µg/L  | 1                        | 3/6/2014 08:32 PM                  |
| 2,4-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:32 PM                  |
| 2,6-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:32 PM                  |
| 2-Chloronaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:32 PM                  |
| 2-Chlorophenol                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:32 PM                  |
| 2-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:32 PM                  |
| 2-Methylphenol                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:32 PM                  |
| 2-Nitroaniline                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:32 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-13  
**Collection Date:** 2/27/2014 01:28 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-15  
**Matrix:** GROUNDWATER

| Analyses                          | Result      | Qual | Report Limit | Units       | Dilution Factor | Date Analyzed     |
|-----------------------------------|-------------|------|--------------|-------------|-----------------|-------------------|
| 2-Nitrophenol                     | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| 3&4-Methylphenol                  | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| 3,3'-Dichlorobenzidine            | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| 3-Nitroaniline                    | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| 4,6-Dinitro-2-methylphenol        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| 4-Bromophenyl phenyl ether        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| 4-Chloro-3-methylphenol           | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| 4-Chloroaniline                   | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| 4-Chlorophenyl phenyl ether       | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| 4-Nitroaniline                    | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| 4-Nitrophenol                     | ND          |      | 1.0          | µg/L        | 1               | 3/6/2014 08:32 PM |
| Acenaphthene                      | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| Acenaphthylene                    | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| Acetophenone                      | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| Anthracene                        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| Atrazine                          | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| Benz(a)anthracene                 | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| Benzaldehyde                      | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| Benzo(a)pyrene                    | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| Benzo(b)fluoranthene              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| Benzo(g,h,i)perylene              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| Benzo(k)fluoranthene              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| Bis(2-chloroethoxy)methane        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| Bis(2-chloroethyl)ether           | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| Bis(2-chloroisopropyl)ether       | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>4.8</b>  |      | <b>0.20</b>  | <b>µg/L</b> | 1               | 3/6/2014 08:32 PM |
| Butyl benzyl phthalate            | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| Caprolactam                       | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| Carbazole                         | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| Chrysene                          | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| Dibenz(a,h)anthracene             | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| <b>Dibenzofuran</b>               | <b>0.49</b> |      | <b>0.20</b>  | <b>µg/L</b> | 1               | 3/6/2014 08:32 PM |
| Diethyl phthalate                 | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| Dimethyl phthalate                | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| Di-n-butyl phthalate              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| Di-n-octyl phthalate              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| Fluoranthene                      | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| Fluorene                          | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| Hexachlorobenzene                 | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |
| Hexachlorobutadiene               | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:32 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-13  
**Collection Date:** 2/27/2014 01:28 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-15  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:32 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:32 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:32 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:32 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:32 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:32 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:32 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:32 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:32 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:32 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:32 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:32 PM |
| Surr: 2,4,6-Tribromophenol | 82.2   |      | 34-129        | %REC  | 1                  | 3/6/2014 08:32 PM |
| Surr: 2-Fluorobiphenyl     | 69.9   |      | 40-125        | %REC  | 1                  | 3/6/2014 08:32 PM |
| Surr: 2-Fluorophenol       | 71.1   |      | 20-120        | %REC  | 1                  | 3/6/2014 08:32 PM |
| Surr: 4-Terphenyl-d14      | 83.2   |      | 40-135        | %REC  | 1                  | 3/6/2014 08:32 PM |
| Surr: Nitrobenzene-d5      | 72.8   |      | 41-120        | %REC  | 1                  | 3/6/2014 08:32 PM |
| Surr: Phenol-d6            | 70.2   |      | 20-120        | %REC  | 1                  | 3/6/2014 08:32 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:30 AM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:30 AM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:30 AM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:30 AM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:30 AM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:30 AM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:30 AM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:30 AM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:30 AM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:30 AM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 09:30 AM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 09:30 AM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:30 AM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 09:30 AM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 09:30 AM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:30 AM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:30 AM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:30 AM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:30 AM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 09:30 AM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:30 AM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-13  
**Collection Date:** 2/27/2014 01:28 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-15  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed      |
|------------------------------------|--------|------|----------------|-------|-----------------|--------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:30 AM  |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:30 AM  |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:30 AM  |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:30 AM  |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:30 AM  |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:30 AM  |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:30 AM  |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:30 AM  |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:30 AM  |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 09:30 AM  |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:30 AM  |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 09:30 AM  |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:30 AM  |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:30 AM  |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:30 AM  |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:30 AM  |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:30 AM  |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:30 AM  |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:30 AM  |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:30 AM  |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:30 AM  |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:30 AM  |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:30 AM  |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/4/2014 09:30 AM  |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/4/2014 09:30 AM  |
| Surr: 1,2-Dichloroethane-d4        | 98.5   |      | 70-125         | %REC  | 1               | 3/4/2014 09:30 AM  |
| Surr: 4-Bromofluorobenzene         | 96.2   |      | 72-125         | %REC  | 1               | 3/4/2014 09:30 AM  |
| Surr: Dibromofluoromethane         | 99.8   |      | 71-125         | %REC  | 1               | 3/4/2014 09:30 AM  |
| Surr: Toluene-d8                   | 92.9   |      | 75-125         | %REC  | 1               | 3/4/2014 09:30 AM  |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       | Analyst: JKP    |                    |
| Chloride                           | 588    |      | 5.00           | mg/L  | 10              | 3/14/2014 03:50 PM |
| Fluoride                           | 0.282  |      | 0.100          | mg/L  | 1               | 3/14/2014 06:19 AM |
| Nitrogen, Nitrate (As N)           | ND     |      | 0.500          | mg/L  | 5               | 3/17/2014 12:03 AM |
| Sulfate                            | 106    |      | 5.00           | mg/L  | 10              | 3/14/2014 03:50 PM |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       | Analyst: PPM    |                    |
| Alkalinity, Bicarbonate (As CaCO3) | 436    |      | 10.0           | mg/L  | 1               | 3/4/2014 12:05 PM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 12:05 PM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 12:05 PM  |
| Alkalinity, Total (As CaCO3)       | 436    |      | 10.0           | mg/L  | 1               | 3/4/2014 12:05 PM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental**

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-13  
**Collection Date:** 2/27/2014 01:28 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-15  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 2,790  |      | 5.00              | µmhos/cm | 1               | 3/4/2014 12:05 PM   |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 6.84   | H    | 0.100             | pH Units | 1               | 3/4/2014 12:05 PM   |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 2,380  |      | 10.0              | mg/L     | 1               | 3/5/2014 10:40 AM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-27  
**Collection Date:** 2/27/2014 12:20 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-16  
**Matrix:** GROUNDWATER

| Analyses                       | Result  | Qual | Report Limit       | Units | Dilution Factor          | Date Analyzed                      |
|--------------------------------|---------|------|--------------------|-------|--------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |         |      |                    |       |                          |                                    |
| Mercury                        | ND      |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: OFO<br>3/7/2014 02:24 PM  |
| <b>DISSOLVED METALS</b>        |         |      |                    |       |                          |                                    |
| Aluminum                       | ND      |      | SW6020<br>0.0100   | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: SKS<br>3/10/2014 04:16 PM |
| Arsenic                        | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:16 PM                 |
| Barium                         | 0.139   |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:16 PM                 |
| Boron                          | 0.232   |      | 0.0200             | mg/L  | 1                        | 3/10/2014 04:16 PM                 |
| Cadmium                        | ND      |      | 0.00200            | mg/L  | 1                        | 3/10/2014 04:16 PM                 |
| Calcium                        | 203     |      | 5.00               | mg/L  | 10                       | 3/11/2014 03:58 PM                 |
| Chromium                       | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:16 PM                 |
| Cobalt                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:16 PM                 |
| Copper                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:16 PM                 |
| Iron                           | ND      |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:16 PM                 |
| Lead                           | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:16 PM                 |
| Magnesium                      | 26.0    |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:16 PM                 |
| Manganese                      | 0.0134  |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:16 PM                 |
| Molybdenum                     | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:16 PM                 |
| Nickel                         | 0.0286  |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:16 PM                 |
| Potassium                      | 3.72    |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:16 PM                 |
| Selenium                       | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:16 PM                 |
| Silver                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:16 PM                 |
| Sodium                         | 127     |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:16 PM                 |
| Uranium                        | 0.00680 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:16 PM                 |
| Zinc                           | 0.00624 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:16 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |         |      |                    |       |                          |                                    |
| 1,1'-Biphenyl                  | ND      |      | SW8270<br>0.20     | µg/L  | Prep Date: 3/4/2014<br>1 | Analyst: LG<br>3/6/2014 08:51 PM   |
| 1-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:51 PM                  |
| 2,4,5-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:51 PM                  |
| 2,4,6-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:51 PM                  |
| 2,4-Dichlorophenol             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:51 PM                  |
| 2,4-Dimethylphenol             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:51 PM                  |
| 2,4-Dinitrophenol              | ND      |      | 1.0                | µg/L  | 1                        | 3/6/2014 08:51 PM                  |
| 2,4-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:51 PM                  |
| 2,6-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:51 PM                  |
| 2-Chloronaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:51 PM                  |
| 2-Chlorophenol                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:51 PM                  |
| 2-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:51 PM                  |
| 2-Methylphenol                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:51 PM                  |
| 2-Nitroaniline                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 08:51 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-27  
**Collection Date:** 2/27/2014 12:20 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-16  
**Matrix:** GROUNDWATER

| Analyses                    | Result      | Qual | Report Limit | Units       | Dilution Factor | Date Analyzed     |
|-----------------------------|-------------|------|--------------|-------------|-----------------|-------------------|
| 2-Nitrophenol               | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| 3&4-Methylphenol            | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| 3,3'-Dichlorobenzidine      | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| 3-Nitroaniline              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| 4,6-Dinitro-2-methylphenol  | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| 4-Bromophenyl phenyl ether  | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| 4-Chloro-3-methylphenol     | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| 4-Chloroaniline             | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| 4-Chlorophenyl phenyl ether | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| 4-Nitroaniline              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| 4-Nitrophenol               | ND          |      | 1.0          | µg/L        | 1               | 3/6/2014 08:51 PM |
| Acenaphthene                | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| Acenaphthylene              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| Acetophenone                | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| Anthracene                  | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| Atrazine                    | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| Benz(a)anthracene           | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| Benzaldehyde                | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| Benzo(a)pyrene              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| Benzo(b)fluoranthene        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| Benzo(g,h,i)perylene        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| Benzo(k)fluoranthene        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| Bis(2-chloroethoxy)methane  | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| Bis(2-chloroethyl)ether     | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| Bis(2-chloroisopropyl)ether | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| Bis(2-ethylhexyl)phthalate  | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| Butyl benzyl phthalate      | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| Caprolactam                 | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| Carbazole                   | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| Chrysene                    | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| Dibenz(a,h)anthracene       | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| Dibenzofuran                | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| Diethyl phthalate           | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| Dimethyl phthalate          | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| Di-n-butyl phthalate        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| <b>Di-n-octyl phthalate</b> | <b>0.29</b> |      | <b>0.20</b>  | <b>µg/L</b> | <b>1</b>        | 3/6/2014 08:51 PM |
| Fluoranthene                | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| Fluorene                    | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| Hexachlorobenzene           | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |
| Hexachlorobutadiene         | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 08:51 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-27  
**Collection Date:** 2/27/2014 12:20 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-16  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:51 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:51 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:51 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:51 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:51 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:51 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:51 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:51 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:51 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:51 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:51 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 08:51 PM |
| Surr: 2,4,6-Tribromophenol | 82.3   |      | 34-129        | %REC  | 1                  | 3/6/2014 08:51 PM |
| Surr: 2-Fluorobiphenyl     | 61.5   |      | 40-125        | %REC  | 1                  | 3/6/2014 08:51 PM |
| Surr: 2-Fluorophenol       | 61.3   |      | 20-120        | %REC  | 1                  | 3/6/2014 08:51 PM |
| Surr: 4-Terphenyl-d14      | 75.9   |      | 40-135        | %REC  | 1                  | 3/6/2014 08:51 PM |
| Surr: Nitrobenzene-d5      | 65.2   |      | 41-120        | %REC  | 1                  | 3/6/2014 08:51 PM |
| Surr: Phenol-d6            | 57.1   |      | 20-120        | %REC  | 1                  | 3/6/2014 08:51 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:55 AM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:55 AM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:55 AM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:55 AM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:55 AM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:55 AM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:55 AM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:55 AM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:55 AM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:55 AM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 09:55 AM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 09:55 AM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:55 AM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 09:55 AM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 09:55 AM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:55 AM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:55 AM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:55 AM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:55 AM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 09:55 AM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 09:55 AM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-27  
**Collection Date:** 2/27/2014 12:20 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-16  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed      |
|------------------------------------|--------|------|----------------|-------|-----------------|--------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:55 AM  |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:55 AM  |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:55 AM  |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:55 AM  |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:55 AM  |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:55 AM  |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:55 AM  |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:55 AM  |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:55 AM  |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 09:55 AM  |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:55 AM  |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 09:55 AM  |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:55 AM  |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:55 AM  |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:55 AM  |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:55 AM  |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:55 AM  |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:55 AM  |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:55 AM  |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:55 AM  |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:55 AM  |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:55 AM  |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 09:55 AM  |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/4/2014 09:55 AM  |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/4/2014 09:55 AM  |
| Surr: 1,2-Dichloroethane-d4        | 95.7   |      | 70-125         | %REC  | 1               | 3/4/2014 09:55 AM  |
| Surr: 4-Bromofluorobenzene         | 95.3   |      | 72-125         | %REC  | 1               | 3/4/2014 09:55 AM  |
| Surr: Dibromofluoromethane         | 97.7   |      | 71-125         | %REC  | 1               | 3/4/2014 09:55 AM  |
| Surr: Toluene-d8                   | 92.4   |      | 75-125         | %REC  | 1               | 3/4/2014 09:55 AM  |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       |                 | Analyst: JKP       |
| Chloride                           | 298    |      | 5.00           | mg/L  | 10              | 3/14/2014 04:04 PM |
| Fluoride                           | 0.415  |      | 0.100          | mg/L  | 1               | 3/14/2014 06:34 AM |
| Nitrogen, Nitrate (As N)           | 8.00   |      | 0.500          | mg/L  | 5               | 3/17/2014 12:29 AM |
| Sulfate                            | 89.3   |      | 0.500          | mg/L  | 1               | 3/14/2014 06:34 AM |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       |                 | Analyst: PPM       |
| Alkalinity, Bicarbonate (As CaCO3) | 401    |      | 10.0           | mg/L  | 1               | 3/4/2014 12:11 PM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 12:11 PM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 12:11 PM  |
| Alkalinity, Total (As CaCO3)       | 401    |      | 10.0           | mg/L  | 1               | 3/4/2014 12:11 PM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental**

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-27  
**Collection Date:** 2/27/2014 12:20 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-16  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 1,870  |      | 5.00              | µmhos/cm | 1               | 3/4/2014 12:11 PM   |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 6.84   | H    | 0.100             | pH Units | 1               | 3/4/2014 12:11 PM   |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 1,150  |      | 10.0              | mg/L     | 1               | 3/5/2014 10:40 AM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-8  
**Collection Date:** 2/27/2014 03:05 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-17  
**Matrix:** GROUNDWATER

| Analyses                       | Result  | Qual | Report Limit       | Units | Dilution Factor          | Date Analyzed                      |
|--------------------------------|---------|------|--------------------|-------|--------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |         |      |                    |       |                          |                                    |
| Mercury                        | ND      |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: OFO<br>3/7/2014 02:26 PM  |
| <b>DISSOLVED METALS</b>        |         |      |                    |       |                          |                                    |
| Aluminum                       | 0.747   |      | SW6020<br>0.0100   | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: SKS<br>3/10/2014 04:18 PM |
| Arsenic                        | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:18 PM                 |
| Barium                         | 0.233   |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:18 PM                 |
| Boron                          | 0.284   |      | 0.0200             | mg/L  | 1                        | 3/10/2014 04:18 PM                 |
| Cadmium                        | ND      |      | 0.00200            | mg/L  | 1                        | 3/10/2014 04:18 PM                 |
| Calcium                        | 246     |      | 5.00               | mg/L  | 10                       | 3/11/2014 04:01 PM                 |
| Chromium                       | 0.0417  |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:18 PM                 |
| Cobalt                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:18 PM                 |
| Copper                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:18 PM                 |
| Iron                           | 0.541   |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:18 PM                 |
| Lead                           | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:18 PM                 |
| Magnesium                      | 30.3    |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:18 PM                 |
| Manganese                      | 0.0240  |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:18 PM                 |
| Molybdenum                     | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:18 PM                 |
| Nickel                         | 0.0339  |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:18 PM                 |
| Potassium                      | 4.90    |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:18 PM                 |
| Selenium                       | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:18 PM                 |
| Silver                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:18 PM                 |
| Sodium                         | 135     |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:18 PM                 |
| Uranium                        | 0.00916 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:18 PM                 |
| Zinc                           | 0.0102  |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:18 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |         |      |                    |       |                          |                                    |
| 1,1'-Biphenyl                  | ND      |      | SW8270<br>0.20     | µg/L  | Prep Date: 3/4/2014<br>1 | Analyst: LG<br>3/6/2014 09:10 PM   |
| 1-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:10 PM                  |
| 2,4,5-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:10 PM                  |
| 2,4,6-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:10 PM                  |
| 2,4-Dichlorophenol             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:10 PM                  |
| 2,4-Dimethylphenol             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:10 PM                  |
| 2,4-Dinitrophenol              | ND      |      | 1.0                | µg/L  | 1                        | 3/6/2014 09:10 PM                  |
| 2,4-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:10 PM                  |
| 2,6-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:10 PM                  |
| 2-Chloronaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:10 PM                  |
| 2-Chlorophenol                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:10 PM                  |
| 2-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:10 PM                  |
| 2-Methylphenol                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:10 PM                  |
| 2-Nitroaniline                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:10 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-8  
**Collection Date:** 2/27/2014 03:05 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-17  
**Matrix:** GROUNDWATER

| Analyses                          | Result     | Qual | Report Limit | Units       | Dilution Factor | Date Analyzed            |
|-----------------------------------|------------|------|--------------|-------------|-----------------|--------------------------|
| 2-Nitrophenol                     | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| 3&4-Methylphenol                  | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| 3,3'-Dichlorobenzidine            | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| 3-Nitroaniline                    | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| 4,6-Dinitro-2-methylphenol        | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| 4-Bromophenyl phenyl ether        | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| 4-Chloro-3-methylphenol           | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| 4-Chloroaniline                   | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| 4-Chlorophenyl phenyl ether       | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| 4-Nitroaniline                    | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| 4-Nitrophenol                     | ND         |      | 1.0          | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Acenaphthene                      | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Acenaphthylene                    | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Acetophenone                      | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Anthracene                        | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Atrazine                          | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Benz(a)anthracene                 | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Benzaldehyde                      | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Benzo(a)pyrene                    | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Benzo(b)fluoranthene              | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Benzo(g,h,i)perylene              | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Benzo(k)fluoranthene              | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Bis(2-chloroethoxy)methane        | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Bis(2-chloroethyl)ether           | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Bis(2-chloroisopropyl)ether       | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>7.2</b> |      | <b>0.20</b>  | <b>µg/L</b> | <b>1</b>        | <b>3/6/2014 09:10 PM</b> |
| Butyl benzyl phthalate            | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Caprolactam                       | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Carbazole                         | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Chrysene                          | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Dibenz(a,h)anthracene             | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Dibenzofuran                      | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Diethyl phthalate                 | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Dimethyl phthalate                | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Di-n-butyl phthalate              | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Di-n-octyl phthalate              | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Fluoranthene                      | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Fluorene                          | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Hexachlorobenzene                 | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |
| Hexachlorobutadiene               | ND         |      | 0.20         | µg/L        | 1               | 3/6/2014 09:10 PM        |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-8  
**Collection Date:** 2/27/2014 03:05 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-17  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:10 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:10 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:10 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:10 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:10 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:10 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:10 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:10 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:10 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:10 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:10 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:10 PM |
| Surr: 2,4,6-Tribromophenol | 73.8   |      | 34-129        | %REC  | 1                  | 3/6/2014 09:10 PM |
| Surr: 2-Fluorobiphenyl     | 61.2   |      | 40-125        | %REC  | 1                  | 3/6/2014 09:10 PM |
| Surr: 2-Fluorophenol       | 53.0   |      | 20-120        | %REC  | 1                  | 3/6/2014 09:10 PM |
| Surr: 4-Terphenyl-d14      | 73.3   |      | 40-135        | %REC  | 1                  | 3/6/2014 09:10 PM |
| Surr: Nitrobenzene-d5      | 57.8   |      | 41-120        | %REC  | 1                  | 3/6/2014 09:10 PM |
| Surr: Phenol-d6            | 51.6   |      | 20-120        | %REC  | 1                  | 3/6/2014 09:10 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:18 AM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:18 AM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:18 AM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:18 AM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:18 AM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:18 AM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:18 AM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:18 AM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:18 AM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:18 AM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 10:18 AM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 10:18 AM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:18 AM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 10:18 AM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 10:18 AM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:18 AM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:18 AM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:18 AM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:18 AM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 10:18 AM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:18 AM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-8  
**Collection Date:** 2/27/2014 03:05 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-17  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed      |
|------------------------------------|--------|------|----------------|-------|-----------------|--------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:18 AM  |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:18 AM  |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:18 AM  |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:18 AM  |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:18 AM  |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:18 AM  |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:18 AM  |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:18 AM  |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:18 AM  |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 10:18 AM  |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:18 AM  |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 10:18 AM  |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:18 AM  |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:18 AM  |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:18 AM  |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:18 AM  |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:18 AM  |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:18 AM  |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:18 AM  |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:18 AM  |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:18 AM  |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:18 AM  |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:18 AM  |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/4/2014 10:18 AM  |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/4/2014 10:18 AM  |
| Surr: 1,2-Dichloroethane-d4        | 97.3   |      | 70-125         | %REC  | 1               | 3/4/2014 10:18 AM  |
| Surr: 4-Bromofluorobenzene         | 95.7   |      | 72-125         | %REC  | 1               | 3/4/2014 10:18 AM  |
| Surr: Dibromofluoromethane         | 97.1   |      | 71-125         | %REC  | 1               | 3/4/2014 10:18 AM  |
| Surr: Toluene-d8                   | 93.1   |      | 75-125         | %REC  | 1               | 3/4/2014 10:18 AM  |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       | Analyst: JKP    |                    |
| Chloride                           | 368    |      | 5.00           | mg/L  | 10              | 3/14/2014 04:19 PM |
| Fluoride                           | 0.417  |      | 0.100          | mg/L  | 1               | 3/14/2014 07:18 AM |
| Nitrogen, Nitrate (As N)           | 1.43   |      | 0.500          | mg/L  | 5               | 3/17/2014 01:46 AM |
| Sulfate                            | 88.1   |      | 5.00           | mg/L  | 10              | 3/14/2014 04:19 PM |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       | Analyst: PPM    |                    |
| Alkalinity, Bicarbonate (As CaCO3) | 424    |      | 10.0           | mg/L  | 1               | 3/4/2014 12:17 PM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 12:17 PM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 12:17 PM  |
| Alkalinity, Total (As CaCO3)       | 424    |      | 10.0           | mg/L  | 1               | 3/4/2014 12:17 PM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental**

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-8  
**Collection Date:** 2/27/2014 03:05 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-17  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 2,130  |      | 5.00              | µmhos/cm | 1               | 3/4/2014 12:17 PM   |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 6.86   | H    | 0.100             | pH Units | 1               | 3/4/2014 12:17 PM   |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 1,440  |      | 10.0              | mg/L     | 1               | 3/5/2014 10:40 AM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-17R  
**Collection Date:** 2/27/2014 05:42 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-18  
**Matrix:** GROUNDWATER

| Analyses                       | Result | Qual | Report Limit       | Units | Dilution Factor          | Date Analyzed                      |
|--------------------------------|--------|------|--------------------|-------|--------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |        |      |                    |       |                          |                                    |
| Mercury                        | ND     |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: OFO<br>3/7/2014 02:28 PM  |
| <b>DISSOLVED METALS</b>        |        |      |                    |       |                          |                                    |
| Aluminum                       | 0.254  |      | SW6020<br>0.0100   | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: SKS<br>3/10/2014 04:21 PM |
| Arsenic                        | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:21 PM                 |
| Barium                         | 0.121  |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:21 PM                 |
| Boron                          | 0.193  |      | 0.0200             | mg/L  | 1                        | 3/10/2014 04:21 PM                 |
| Cadmium                        | ND     |      | 0.00200            | mg/L  | 1                        | 3/10/2014 04:21 PM                 |
| Calcium                        | 172    |      | 0.500              | mg/L  | 1                        | 3/10/2014 04:21 PM                 |
| Chromium                       | 0.0121 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:21 PM                 |
| Cobalt                         | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:21 PM                 |
| Copper                         | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:21 PM                 |
| Iron                           | ND     |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:21 PM                 |
| Lead                           | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:21 PM                 |
| Magnesium                      | 19.1   |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:21 PM                 |
| Manganese                      | 0.0342 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:21 PM                 |
| Molybdenum                     | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:21 PM                 |
| Nickel                         | 0.0273 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:21 PM                 |
| Potassium                      | 2.67   |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:21 PM                 |
| Selenium                       | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:21 PM                 |
| Silver                         | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:21 PM                 |
| Sodium                         | 48.6   |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:21 PM                 |
| Uranium                        | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:21 PM                 |
| Zinc                           | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:21 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |        |      |                    |       |                          |                                    |
| 1,1'-Biphenyl                  | ND     |      | SW8270<br>0.20     | µg/L  | Prep Date: 3/4/2014<br>1 | Analyst: LG<br>3/6/2014 09:29 PM   |
| 1-Methylnaphthalene            | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:29 PM                  |
| 2,4,5-Trichlorophenol          | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:29 PM                  |
| 2,4,6-Trichlorophenol          | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:29 PM                  |
| 2,4-Dichlorophenol             | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:29 PM                  |
| 2,4-Dimethylphenol             | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:29 PM                  |
| 2,4-Dinitrophenol              | ND     |      | 1.0                | µg/L  | 1                        | 3/6/2014 09:29 PM                  |
| 2,4-Dinitrotoluene             | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:29 PM                  |
| 2,6-Dinitrotoluene             | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:29 PM                  |
| 2-Chloronaphthalene            | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:29 PM                  |
| 2-Chlorophenol                 | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:29 PM                  |
| 2-Methylnaphthalene            | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:29 PM                  |
| 2-Methylphenol                 | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:29 PM                  |
| 2-Nitroaniline                 | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:29 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-17R  
**Collection Date:** 2/27/2014 05:42 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-18  
**Matrix:** GROUNDWATER

| Analyses                          | Result      | Qual | Report Limit | Units       | Dilution Factor | Date Analyzed            |
|-----------------------------------|-------------|------|--------------|-------------|-----------------|--------------------------|
| 2-Nitrophenol                     | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| 3&4-Methylphenol                  | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| 3,3'-Dichlorobenzidine            | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| 3-Nitroaniline                    | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| 4,6-Dinitro-2-methylphenol        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| 4-Bromophenyl phenyl ether        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| 4-Chloro-3-methylphenol           | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| 4-Chloroaniline                   | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| 4-Chlorophenyl phenyl ether       | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| 4-Nitroaniline                    | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| 4-Nitrophenol                     | ND          |      | 1.0          | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Acenaphthene                      | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Acenaphthylene                    | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Acetophenone                      | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Anthracene                        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Atrazine                          | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Benz(a)anthracene                 | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Benzaldehyde                      | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Benzo(a)pyrene                    | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Benzo(b)fluoranthene              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Benzo(g,h,i)perylene              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Benzo(k)fluoranthene              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Bis(2-chloroethoxy)methane        | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Bis(2-chloroethyl)ether           | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Bis(2-chloroisopropyl)ether       | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>0.29</b> |      | <b>0.20</b>  | <b>µg/L</b> | <b>1</b>        | <b>3/6/2014 09:29 PM</b> |
| Butyl benzyl phthalate            | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Caprolactam                       | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Carbazole                         | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Chrysene                          | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Dibenz(a,h)anthracene             | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Dibenzofuran                      | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Diethyl phthalate                 | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Dimethyl phthalate                | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Di-n-butyl phthalate              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Di-n-octyl phthalate              | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Fluoranthene                      | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Fluorene                          | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Hexachlorobenzene                 | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |
| Hexachlorobutadiene               | ND          |      | 0.20         | µg/L        | 1               | 3/6/2014 09:29 PM        |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-17R  
**Collection Date:** 2/27/2014 05:42 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-18  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:29 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:29 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:29 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:29 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:29 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:29 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:29 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:29 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:29 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:29 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:29 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:29 PM |
| Surr: 2,4,6-Tribromophenol | 50.7   |      | 34-129        | %REC  | 1                  | 3/6/2014 09:29 PM |
| Surr: 2-Fluorobiphenyl     | 48.4   |      | 40-125        | %REC  | 1                  | 3/6/2014 09:29 PM |
| Surr: 2-Fluorophenol       | 50.2   |      | 20-120        | %REC  | 1                  | 3/6/2014 09:29 PM |
| Surr: 4-Terphenyl-d14      | 64.9   |      | 40-135        | %REC  | 1                  | 3/6/2014 09:29 PM |
| Surr: Nitrobenzene-d5      | 51.6   |      | 41-120        | %REC  | 1                  | 3/6/2014 09:29 PM |
| Surr: Phenol-d6            | 44.6   |      | 20-120        | %REC  | 1                  | 3/6/2014 09:29 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:40 AM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:40 AM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:40 AM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:40 AM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:40 AM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:40 AM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:40 AM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:40 AM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:40 AM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:40 AM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 10:40 AM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 10:40 AM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:40 AM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 10:40 AM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 10:40 AM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:40 AM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:40 AM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:40 AM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:40 AM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 10:40 AM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:40 AM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-17R  
**Collection Date:** 2/27/2014 05:42 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-18  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed      |
|------------------------------------|--------|------|----------------|-------|-----------------|--------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:40 AM  |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:40 AM  |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:40 AM  |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:40 AM  |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:40 AM  |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:40 AM  |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:40 AM  |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:40 AM  |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:40 AM  |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 10:40 AM  |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:40 AM  |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 10:40 AM  |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:40 AM  |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:40 AM  |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:40 AM  |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:40 AM  |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:40 AM  |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:40 AM  |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:40 AM  |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:40 AM  |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:40 AM  |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:40 AM  |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 10:40 AM  |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/4/2014 10:40 AM  |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/4/2014 10:40 AM  |
| Surr: 1,2-Dichloroethane-d4        | 96.0   |      | 70-125         | %REC  | 1               | 3/4/2014 10:40 AM  |
| Surr: 4-Bromofluorobenzene         | 95.7   |      | 72-125         | %REC  | 1               | 3/4/2014 10:40 AM  |
| Surr: Dibromofluoromethane         | 99.5   |      | 71-125         | %REC  | 1               | 3/4/2014 10:40 AM  |
| Surr: Toluene-d8                   | 92.5   |      | 75-125         | %REC  | 1               | 3/4/2014 10:40 AM  |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       | Analyst: JKP    |                    |
| Chloride                           | 184    |      | 5.00           | mg/L  | 10              | 3/14/2014 04:33 PM |
| Fluoride                           | 0.425  |      | 0.100          | mg/L  | 1               | 3/14/2014 07:32 AM |
| Nitrogen, Nitrate (As N)           | 0.629  |      | 0.500          | mg/L  | 5               | 3/17/2014 02:12 AM |
| Sulfate                            | 92.5   |      | 0.500          | mg/L  | 1               | 3/14/2014 07:32 AM |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       | Analyst: PPM    |                    |
| Alkalinity, Bicarbonate (As CaCO3) | 308    |      | 10.0           | mg/L  | 1               | 3/4/2014 12:22 PM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 12:22 PM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 12:22 PM  |
| Alkalinity, Total (As CaCO3)       | 308    |      | 10.0           | mg/L  | 1               | 3/4/2014 12:22 PM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental**

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-17R  
**Collection Date:** 2/27/2014 05:42 PM

**Work Order:** 14030008  
**Lab ID:** 14030008-18  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 1,320  |      | 5.00              | µmhos/cm | 1               | 3/4/2014 12:22 PM   |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 6.88   | H    | 0.100             | pH Units | 1               | 3/4/2014 12:22 PM   |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 904    |      | 10.0              | mg/L     | 1               | 3/5/2014 10:40 AM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** WW-South  
**Collection Date:** 2/28/2014 09:55 AM

**Work Order:** 14030008  
**Lab ID:** 14030008-19  
**Matrix:** GROUNDWATER

| Analyses                       | Result  | Qual | Report Limit       | Units | Dilution Factor          | Date Analyzed                      |
|--------------------------------|---------|------|--------------------|-------|--------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |         |      |                    |       |                          |                                    |
| Mercury                        | ND      |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: OFO<br>3/7/2014 02:29 PM  |
| <b>DISSOLVED METALS</b>        |         |      |                    |       |                          |                                    |
| Aluminum                       | ND      |      | SW6020<br>0.0100   | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: SKS<br>3/10/2014 04:23 PM |
| Arsenic                        | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:23 PM                 |
| Barium                         | 0.131   |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:23 PM                 |
| Boron                          | 0.195   |      | 0.0200             | mg/L  | 1                        | 3/10/2014 04:23 PM                 |
| Cadmium                        | ND      |      | 0.00200            | mg/L  | 1                        | 3/10/2014 04:23 PM                 |
| Calcium                        | 157     |      | 0.500              | mg/L  | 1                        | 3/10/2014 04:23 PM                 |
| Chromium                       | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:23 PM                 |
| Cobalt                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:23 PM                 |
| Copper                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:23 PM                 |
| Iron                           | ND      |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:23 PM                 |
| Lead                           | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:23 PM                 |
| Magnesium                      | 20.0    |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:23 PM                 |
| Manganese                      | 0.00571 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:23 PM                 |
| Molybdenum                     | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:23 PM                 |
| Nickel                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:23 PM                 |
| Potassium                      | 2.96    |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:23 PM                 |
| Selenium                       | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:23 PM                 |
| Silver                         | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:23 PM                 |
| Sodium                         | 119     |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:23 PM                 |
| Uranium                        | ND      |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:23 PM                 |
| Zinc                           | 0.0155  |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:23 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |         |      |                    |       |                          |                                    |
| 1,1'-Biphenyl                  | ND      |      | SW8270<br>0.20     | µg/L  | Prep Date: 3/4/2014<br>1 | Analyst: LG<br>3/6/2014 09:48 PM   |
| 1-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:48 PM                  |
| 2,4,5-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:48 PM                  |
| 2,4,6-Trichlorophenol          | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:48 PM                  |
| 2,4-Dichlorophenol             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:48 PM                  |
| 2,4-Dimethylphenol             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:48 PM                  |
| 2,4-Dinitrophenol              | ND      |      | 1.0                | µg/L  | 1                        | 3/6/2014 09:48 PM                  |
| 2,4-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:48 PM                  |
| 2,6-Dinitrotoluene             | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:48 PM                  |
| 2-Chloronaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:48 PM                  |
| 2-Chlorophenol                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:48 PM                  |
| 2-Methylnaphthalene            | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:48 PM                  |
| 2-Methylphenol                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:48 PM                  |
| 2-Nitroaniline                 | ND      |      | 0.20               | µg/L  | 1                        | 3/6/2014 09:48 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** WW-South  
**Collection Date:** 2/28/2014 09:55 AM

**Work Order:** 14030008  
**Lab ID:** 14030008-19  
**Matrix:** GROUNDWATER

| Analyses                    | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed     |
|-----------------------------|--------|------|--------------|-------|-----------------|-------------------|
| 2-Nitrophenol               | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| 3&4-Methylphenol            | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| 3,3'-Dichlorobenzidine      | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| 3-Nitroaniline              | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| 4,6-Dinitro-2-methylphenol  | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| 4-Bromophenyl phenyl ether  | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| 4-Chloro-3-methylphenol     | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| 4-Chloroaniline             | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| 4-Chlorophenyl phenyl ether | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| 4-Nitroaniline              | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| 4-Nitrophenol               | ND     |      | 1.0          | µg/L  | 1               | 3/6/2014 09:48 PM |
| Acenaphthene                | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Acenaphthylene              | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Acetophenone                | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Anthracene                  | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Atrazine                    | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Benz(a)anthracene           | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Benzaldehyde                | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Benzo(a)pyrene              | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Benzo(b)fluoranthene        | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Benzo(g,h,i)perylene        | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Benzo(k)fluoranthene        | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Bis(2-chloroethoxy)methane  | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Bis(2-chloroethyl)ether     | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Bis(2-chloroisopropyl)ether | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Bis(2-ethylhexyl)phthalate  | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Butyl benzyl phthalate      | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Caprolactam                 | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Carbazole                   | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Chrysene                    | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Dibenz(a,h)anthracene       | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Dibenzofuran                | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Diethyl phthalate           | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Dimethyl phthalate          | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Di-n-butyl phthalate        | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Di-n-octyl phthalate        | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Fluoranthene                | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Fluorene                    | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Hexachlorobenzene           | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |
| Hexachlorobutadiene         | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 09:48 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** WW-South  
**Collection Date:** 2/28/2014 09:55 AM

**Work Order:** 14030008  
**Lab ID:** 14030008-19  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:48 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:48 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:48 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:48 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:48 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:48 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:48 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:48 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:48 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:48 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:48 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 09:48 PM |
| Surr: 2,4,6-Tribromophenol | 64.3   |      | 34-129        | %REC  | 1                  | 3/6/2014 09:48 PM |
| Surr: 2-Fluorobiphenyl     | 69.1   |      | 40-125        | %REC  | 1                  | 3/6/2014 09:48 PM |
| Surr: 2-Fluorophenol       | 67.7   |      | 20-120        | %REC  | 1                  | 3/6/2014 09:48 PM |
| Surr: 4-Terphenyl-d14      | 77.0   |      | 40-135        | %REC  | 1                  | 3/6/2014 09:48 PM |
| Surr: Nitrobenzene-d5      | 71.4   |      | 41-120        | %REC  | 1                  | 3/6/2014 09:48 PM |
| Surr: Phenol-d6            | 58.3   |      | 20-120        | %REC  | 1                  | 3/6/2014 09:48 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:03 AM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:03 AM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:03 AM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:03 AM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:03 AM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:03 AM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:03 AM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:03 AM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:03 AM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:03 AM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 11:03 AM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 11:03 AM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:03 AM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 11:03 AM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 11:03 AM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:03 AM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:03 AM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:03 AM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:03 AM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 11:03 AM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:03 AM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** WW-South  
**Collection Date:** 2/28/2014 09:55 AM

**Work Order:** 14030008  
**Lab ID:** 14030008-19  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed      |
|------------------------------------|--------|------|----------------|-------|-----------------|--------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:03 AM  |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:03 AM  |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:03 AM  |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:03 AM  |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:03 AM  |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:03 AM  |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:03 AM  |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:03 AM  |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:03 AM  |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 11:03 AM  |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:03 AM  |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 11:03 AM  |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:03 AM  |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:03 AM  |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:03 AM  |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:03 AM  |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:03 AM  |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:03 AM  |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:03 AM  |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:03 AM  |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:03 AM  |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:03 AM  |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:03 AM  |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/4/2014 11:03 AM  |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/4/2014 11:03 AM  |
| Surr: 1,2-Dichloroethane-d4        | 97.3   |      | 70-125         | %REC  | 1               | 3/4/2014 11:03 AM  |
| Surr: 4-Bromofluorobenzene         | 95.8   |      | 72-125         | %REC  | 1               | 3/4/2014 11:03 AM  |
| Surr: Dibromofluoromethane         | 96.9   |      | 71-125         | %REC  | 1               | 3/4/2014 11:03 AM  |
| Surr: Toluene-d8                   | 92.3   |      | 75-125         | %REC  | 1               | 3/4/2014 11:03 AM  |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       |                 | Analyst: JKP       |
| Chloride                           | 352    |      | 5.00           | mg/L  | 10              | 3/14/2014 04:48 PM |
| Fluoride                           | 0.575  |      | 0.100          | mg/L  | 1               | 3/14/2014 07:47 AM |
| Nitrogen, Nitrate (As N)           | 0.660  |      | 0.500          | mg/L  | 5               | 3/17/2014 02:38 AM |
| Sulfate                            | 99.2   |      | 0.500          | mg/L  | 1               | 3/14/2014 07:47 AM |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       |                 | Analyst: PPM       |
| Alkalinity, Bicarbonate (As CaCO3) | 222    |      | 10.0           | mg/L  | 1               | 3/4/2014 12:28 PM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 12:28 PM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 12:28 PM  |
| Alkalinity, Total (As CaCO3)       | 222    |      | 10.0           | mg/L  | 1               | 3/4/2014 12:28 PM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental**

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** WW-South  
**Collection Date:** 2/28/2014 09:55 AM

**Work Order:** 14030008  
**Lab ID:** 14030008-19  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 1,700  |      | 5.00              | µmhos/cm | 1               | 3/4/2014 12:28 PM   |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 6.93   | H    | 0.100             | pH Units | 1               | 3/4/2014 12:28 PM   |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 1,210  |      | 10.0              | mg/L     | 1               | 3/6/2014 04:45 PM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** WW-East  
**Collection Date:** 2/28/2014 10:35 AM

**Work Order:** 14030008  
**Lab ID:** 14030008-20  
**Matrix:** GROUNDWATER

| Analyses                       | Result | Qual | Report Limit       | Units | Dilution Factor          | Date Analyzed                      |
|--------------------------------|--------|------|--------------------|-------|--------------------------|------------------------------------|
| <b>MERCURY-SW7470A</b>         |        |      |                    |       |                          |                                    |
| Mercury                        | ND     |      | SW7470<br>0.000200 | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: OFO<br>3/7/2014 02:31 PM  |
| <b>DISSOLVED METALS</b>        |        |      |                    |       |                          |                                    |
| Aluminum                       | 0.0104 |      | SW6020<br>0.0100   | mg/L  | Prep Date: 3/7/2014<br>1 | Analyst: SKS<br>3/10/2014 04:26 PM |
| Arsenic                        | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:26 PM                 |
| Barium                         | 0.116  |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:26 PM                 |
| Boron                          | 0.158  |      | 0.0200             | mg/L  | 1                        | 3/10/2014 04:26 PM                 |
| Cadmium                        | ND     |      | 0.00200            | mg/L  | 1                        | 3/10/2014 04:26 PM                 |
| Calcium                        | 114    |      | 0.500              | mg/L  | 1                        | 3/10/2014 04:26 PM                 |
| Chromium                       | 0.0139 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:26 PM                 |
| Cobalt                         | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:26 PM                 |
| Copper                         | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:26 PM                 |
| Iron                           | ND     |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:26 PM                 |
| Lead                           | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:26 PM                 |
| Magnesium                      | 15.7   |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:26 PM                 |
| Manganese                      | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:26 PM                 |
| Molybdenum                     | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:26 PM                 |
| Nickel                         | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:26 PM                 |
| Potassium                      | 2.06   |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:26 PM                 |
| Selenium                       | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:26 PM                 |
| Silver                         | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:26 PM                 |
| Sodium                         | 50.5   |      | 0.200              | mg/L  | 1                        | 3/10/2014 04:26 PM                 |
| Uranium                        | ND     |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:26 PM                 |
| Zinc                           | 0.0317 |      | 0.00500            | mg/L  | 1                        | 3/10/2014 04:26 PM                 |
| <b>LOW-LEVEL SEMIVOLATILES</b> |        |      |                    |       |                          |                                    |
| 1,1'-Biphenyl                  | ND     |      | SW8270<br>0.20     | µg/L  | Prep Date: 3/4/2014<br>1 | Analyst: LG<br>3/6/2014 10:08 PM   |
| 1-Methylnaphthalene            | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:08 PM                  |
| 2,4,5-Trichlorophenol          | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:08 PM                  |
| 2,4,6-Trichlorophenol          | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:08 PM                  |
| 2,4-Dichlorophenol             | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:08 PM                  |
| 2,4-Dimethylphenol             | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:08 PM                  |
| 2,4-Dinitrophenol              | ND     |      | 1.0                | µg/L  | 1                        | 3/6/2014 10:08 PM                  |
| 2,4-Dinitrotoluene             | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:08 PM                  |
| 2,6-Dinitrotoluene             | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:08 PM                  |
| 2-Chloronaphthalene            | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:08 PM                  |
| 2-Chlorophenol                 | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:08 PM                  |
| 2-Methylnaphthalene            | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:08 PM                  |
| 2-Methylphenol                 | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:08 PM                  |
| 2-Nitroaniline                 | ND     |      | 0.20               | µg/L  | 1                        | 3/6/2014 10:08 PM                  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** WW-East  
**Collection Date:** 2/28/2014 10:35 AM

**Work Order:** 14030008  
**Lab ID:** 14030008-20  
**Matrix:** GROUNDWATER

| Analyses                    | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed     |
|-----------------------------|--------|------|--------------|-------|-----------------|-------------------|
| 2-Nitrophenol               | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| 3&4-Methylphenol            | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| 3,3'-Dichlorobenzidine      | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| 3-Nitroaniline              | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| 4,6-Dinitro-2-methylphenol  | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| 4-Bromophenyl phenyl ether  | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| 4-Chloro-3-methylphenol     | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| 4-Chloroaniline             | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| 4-Chlorophenyl phenyl ether | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| 4-Nitroaniline              | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| 4-Nitrophenol               | ND     |      | 1.0          | µg/L  | 1               | 3/6/2014 10:08 PM |
| Acenaphthene                | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Acenaphthylene              | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Acetophenone                | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Anthracene                  | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Atrazine                    | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Benz(a)anthracene           | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Benzaldehyde                | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Benzo(a)pyrene              | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Benzo(b)fluoranthene        | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Benzo(g,h,i)perylene        | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Benzo(k)fluoranthene        | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Bis(2-chloroethoxy)methane  | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Bis(2-chloroethyl)ether     | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Bis(2-chloroisopropyl)ether | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Bis(2-ethylhexyl)phthalate  | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Butyl benzyl phthalate      | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Caprolactam                 | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Carbazole                   | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Chrysene                    | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Dibenz(a,h)anthracene       | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Dibenzofuran                | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Diethyl phthalate           | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Dimethyl phthalate          | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Di-n-butyl phthalate        | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Di-n-octyl phthalate        | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Fluoranthene                | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Fluorene                    | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Hexachlorobenzene           | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |
| Hexachlorobutadiene         | ND     |      | 0.20         | µg/L  | 1               | 3/6/2014 10:08 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** WW-East  
**Collection Date:** 2/28/2014 10:35 AM

**Work Order:** 14030008  
**Lab ID:** 14030008-20  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|--------------------|-------------------|
| Hexachlorocyclopentadiene  | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 10:08 PM |
| Hexachloroethane           | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 10:08 PM |
| Indeno(1,2,3-cd)pyrene     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 10:08 PM |
| Isophorone                 | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 10:08 PM |
| Naphthalene                | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 10:08 PM |
| Nitrobenzene               | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 10:08 PM |
| N-Nitrosodi-n-propylamine  | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 10:08 PM |
| N-Nitrosodiphenylamine     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 10:08 PM |
| Pentachlorophenol          | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 10:08 PM |
| Phenanthrene               | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 10:08 PM |
| Phenol                     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 10:08 PM |
| Pyrene                     | ND     |      | 0.20          | µg/L  | 1                  | 3/6/2014 10:08 PM |
| Surr: 2,4,6-Tribromophenol | 63.0   |      | 34-129        | %REC  | 1                  | 3/6/2014 10:08 PM |
| Surr: 2-Fluorobiphenyl     | 72.2   |      | 40-125        | %REC  | 1                  | 3/6/2014 10:08 PM |
| Surr: 2-Fluorophenol       | 66.4   |      | 20-120        | %REC  | 1                  | 3/6/2014 10:08 PM |
| Surr: 4-Terphenyl-d14      | 75.2   |      | 40-135        | %REC  | 1                  | 3/6/2014 10:08 PM |
| Surr: Nitrobenzene-d5      | 72.2   |      | 41-120        | %REC  | 1                  | 3/6/2014 10:08 PM |
| Surr: Phenol-d6            | 58.6   |      | 20-120        | %REC  | 1                  | 3/6/2014 10:08 PM |
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                   |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:28 AM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:28 AM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:28 AM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:28 AM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:28 AM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:28 AM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:28 AM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:28 AM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:28 AM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:28 AM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 11:28 AM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 11:28 AM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:28 AM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 11:28 AM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 11:28 AM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:28 AM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:28 AM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:28 AM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:28 AM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1                  | 3/4/2014 11:28 AM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 11:28 AM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** WW-East  
**Collection Date:** 2/28/2014 10:35 AM

**Work Order:** 14030008  
**Lab ID:** 14030008-20  
**Matrix:** GROUNDWATER

| Analyses                           | Result | Qual | Report Limit   | Units | Dilution Factor | Date Analyzed      |
|------------------------------------|--------|------|----------------|-------|-----------------|--------------------|
| Chlorobenzene                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:28 AM  |
| Chloroethane                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:28 AM  |
| Chloroform                         | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:28 AM  |
| Chloromethane                      | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:28 AM  |
| cis-1,2-Dichloroethene             | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:28 AM  |
| cis-1,3-Dichloropropene            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:28 AM  |
| Dibromochloromethane               | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:28 AM  |
| Ethylbenzene                       | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:28 AM  |
| Isopropylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:28 AM  |
| m,p-Xylene                         | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 11:28 AM  |
| Methyl tert-butyl ether            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:28 AM  |
| Methylene chloride                 | ND     |      | 0.010          | mg/L  | 1               | 3/4/2014 11:28 AM  |
| Naphthalene                        | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:28 AM  |
| n-Butylbenzene                     | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:28 AM  |
| n-Propylbenzene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:28 AM  |
| o-Xylene                           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:28 AM  |
| sec-Butylbenzene                   | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:28 AM  |
| Styrene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:28 AM  |
| Tetrachloroethene                  | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:28 AM  |
| Toluene                            | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:28 AM  |
| trans-1,2-Dichloroethene           | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:28 AM  |
| trans-1,3-Dichloropropene          | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:28 AM  |
| Trichloroethene                    | ND     |      | 0.0050         | mg/L  | 1               | 3/4/2014 11:28 AM  |
| Vinyl chloride                     | ND     |      | 0.0020         | mg/L  | 1               | 3/4/2014 11:28 AM  |
| Xylenes, Total                     | ND     |      | 0.015          | mg/L  | 1               | 3/4/2014 11:28 AM  |
| Surr: 1,2-Dichloroethane-d4        | 96.3   |      | 70-125         | %REC  | 1               | 3/4/2014 11:28 AM  |
| Surr: 4-Bromofluorobenzene         | 95.6   |      | 72-125         | %REC  | 1               | 3/4/2014 11:28 AM  |
| Surr: Dibromofluoromethane         | 96.6   |      | 71-125         | %REC  | 1               | 3/4/2014 11:28 AM  |
| Surr: Toluene-d8                   | 92.6   |      | 75-125         | %REC  | 1               | 3/4/2014 11:28 AM  |
| <b>ANIONS - EPA 300.0 (1993)</b>   |        |      | <b>E300</b>    |       |                 | Analyst: JKP       |
| Chloride                           | 138    |      | 2.50           | mg/L  | 5               | 3/14/2014 05:02 PM |
| Fluoride                           | 0.899  |      | 0.100          | mg/L  | 1               | 3/14/2014 08:01 AM |
| Nitrogen, Nitrate (As N)           | 0.564  |      | 0.500          | mg/L  | 5               | 3/17/2014 03:04 AM |
| Sulfate                            | 80.6   |      | 0.500          | mg/L  | 1               | 3/14/2014 08:01 AM |
| <b>ALKALINITY-SM2320B</b>          |        |      | <b>SM2320B</b> |       |                 | Analyst: PPM       |
| Alkalinity, Bicarbonate (As CaCO3) | 805    |      | 10.0           | mg/L  | 1               | 3/4/2014 12:38 PM  |
| Alkalinity, Carbonate (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 12:38 PM  |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |      | 10.0           | mg/L  | 1               | 3/4/2014 12:38 PM  |
| Alkalinity, Total (As CaCO3)       | 805    |      | 10.0           | mg/L  | 1               | 3/4/2014 12:38 PM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



**ALS Environmental****Date:** 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** WW-East  
**Collection Date:** 2/28/2014 10:35 AM

**Work Order:** 14030008  
**Lab ID:** 14030008-20  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 979    |      | 5.00              | µmhos/cm | 1               | 3/4/2014 12:38 PM   |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 7.17   | H    | 0.100             | pH Units | 1               | 3/4/2014 12:38 PM   |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | 658    |      | 10.0              | mg/L     | 1               | 3/6/2014 04:45 PM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** TB-2-28-14  
**Collection Date:** 2/26/2014

**Work Order:** 14030008  
**Lab ID:** 14030008-21  
**Matrix:** WATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor | Date Analyzed      |
|----------------------------|--------|------|---------------|-------|-----------------|--------------------|
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       |                 | Analyst: <b>PC</b> |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 08:09 PM  |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 08:09 PM  |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 08:09 PM  |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 08:09 PM  |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 08:09 PM  |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| Chlorobenzene              | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| Chloroethane               | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| Chloroform                 | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| Chloromethane              | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| cis-1,2-Dichloroethene     | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| cis-1,3-Dichloropropene    | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| Dibromochloromethane       | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| Ethylbenzene               | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| Isopropylbenzene           | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| m,p-Xylene                 | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 08:09 PM  |
| Methyl tert-butyl ether    | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| Methylene chloride         | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 08:09 PM  |
| Naphthalene                | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| n-Butylbenzene             | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| n-Propylbenzene            | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| o-Xylene                   | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| sec-Butylbenzene           | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |
| Styrene                    | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:09 PM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**ALS Environmental**

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** TB-2-28-14  
**Collection Date:** 2/26/2014

**Work Order:** 14030008  
**Lab ID:** 14030008-21  
**Matrix:** WATER

| Analyses                    | Result | Qual | Report<br>Limit | Units | Dilution<br>Factor | Date Analyzed     |
|-----------------------------|--------|------|-----------------|-------|--------------------|-------------------|
| Tetrachloroethene           | ND     |      | 0.0050          | mg/L  | 1                  | 3/4/2014 08:09 PM |
| Toluene                     | ND     |      | 0.0050          | mg/L  | 1                  | 3/4/2014 08:09 PM |
| trans-1,2-Dichloroethene    | ND     |      | 0.0050          | mg/L  | 1                  | 3/4/2014 08:09 PM |
| trans-1,3-Dichloropropene   | ND     |      | 0.0050          | mg/L  | 1                  | 3/4/2014 08:09 PM |
| Trichloroethene             | ND     |      | 0.0050          | mg/L  | 1                  | 3/4/2014 08:09 PM |
| Vinyl chloride              | ND     |      | 0.0020          | mg/L  | 1                  | 3/4/2014 08:09 PM |
| Xylenes, Total              | ND     |      | 0.015           | mg/L  | 1                  | 3/4/2014 08:09 PM |
| Surr: 1,2-Dichloroethane-d4 | 83.7   |      | 70-125          | %REC  | 1                  | 3/4/2014 08:09 PM |
| Surr: 4-Bromofluorobenzene  | 90.3   |      | 72-125          | %REC  | 1                  | 3/4/2014 08:09 PM |
| Surr: Dibromofluoromethane  | 87.6   |      | 71-125          | %REC  | 1                  | 3/4/2014 08:09 PM |
| Surr: Toluene-d8            | 96.2   |      | 75-125          | %REC  | 1                  | 3/4/2014 08:09 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**Work Order:** 14030008  
**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual

## DATES REPORT

| Sample ID             | Client Sample ID | Matrix                                    | Collection Date       | TCLP Date | Prep Date         | Analysis Date      |
|-----------------------|------------------|-------------------------------------------|-----------------------|-----------|-------------------|--------------------|
| <b>Batch ID</b> 77152 |                  | <b>Test Name:</b> Low-Level Semivolatiles |                       |           |                   |                    |
| 14030008-01F          | MW-18            | Groundwater                               | 2/26/2014 3:35:00 PM  |           | 3/4/2014 07:47 AM | 3/6/2014 10:27 PM  |
| 14030008-02F          | MW-19            |                                           | 2/26/2014 1:15:00 PM  |           | 3/4/2014 07:47 AM | 3/6/2014 10:46 PM  |
| 14030008-03F          | MW-25            |                                           | 2/26/2014 5:12:00 PM  |           | 3/4/2014 07:47 AM | 3/5/2014 10:59 PM  |
| 14030008-04F          | Dup-3            |                                           | 2/26/2014 1:15:00 PM  |           | 3/4/2014 07:47 AM | 3/5/2014 11:18 PM  |
| 14030008-05F          | Dup-4            |                                           | 2/26/2014 5:12:00 PM  |           | 3/4/2014 07:47 AM | 3/6/2014 11:05 PM  |
| 14030008-06F          | MW-12R           |                                           | 2/27/2014 8:33:00 AM  |           | 3/4/2014 07:47 AM | 3/5/2014 11:56 PM  |
| 14030008-07F          | MW-7             |                                           | 2/27/2014 11:15:00 AM |           | 3/4/2014 07:47 AM | 3/6/2014 11:24 PM  |
| 14030008-08F          | RW-1             |                                           | 2/27/2014 1:10:00 PM  |           | 3/4/2014 07:47 AM | 3/6/2014 12:35 AM  |
|                       |                  |                                           |                       |           | 3/4/2014 07:47 AM | 3/10/2014 06:21 PM |
| 14030008-09F          | MW-1             |                                           | 2/27/2014 2:20:00 PM  |           | 3/4/2014 07:47 AM | 3/6/2014 06:56 PM  |
| 14030008-10F          | MW-6             |                                           | 2/27/2014 4:05:00 PM  |           | 3/4/2014 07:47 AM | 3/6/2014 07:15 PM  |
| 14030008-11F          | MW-29            |                                           | 2/27/2014 6:05:00 PM  |           | 3/4/2014 07:47 AM | 3/5/2014 02:08 PM  |
| 14030008-12F          | Dup-2            |                                           |                       |           | 3/4/2014 07:47 AM | 3/6/2014 07:34 PM  |
| 14030008-13F          | MW-30            |                                           | 2/27/2014 7:50:00 PM  |           | 3/4/2014 07:47 AM | 3/6/2014 07:53 PM  |
| 14030008-14F          | MW-24            |                                           | 2/27/2014 10:59:00 AM |           | 3/4/2014 07:47 AM | 3/6/2014 08:12 PM  |
| 14030008-15F          | MW-13            |                                           | 2/27/2014 1:28:00 PM  |           | 3/4/2014 07:47 AM | 3/6/2014 08:32 PM  |
| 14030008-16F          | MW-27            |                                           | 2/27/2014 12:20:00 PM |           | 3/4/2014 07:47 AM | 3/6/2014 08:51 PM  |
| 14030008-17F          | MW-8             |                                           | 2/27/2014 3:05:00 PM  |           | 3/4/2014 07:47 AM | 3/6/2014 09:10 PM  |
| 14030008-18F          | MW-17R           |                                           | 2/27/2014 5:42:00 PM  |           | 3/4/2014 07:47 AM | 3/6/2014 09:29 PM  |
| 14030008-19F          | WW-South         |                                           | 2/28/2014 9:55:00 AM  |           | 3/4/2014 07:47 AM | 3/6/2014 09:48 PM  |
| 14030008-20F          | WW-East          |                                           | 2/28/2014 10:35:00 AM |           | 3/4/2014 07:47 AM | 3/6/2014 10:08 PM  |

**Work Order:** 14030008  
**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual

**DATES REPORT**

| Sample ID             | Client Sample ID | Matrix                             | Collection Date       | TCLP Date | Prep Date         | Analysis Date      |
|-----------------------|------------------|------------------------------------|-----------------------|-----------|-------------------|--------------------|
| <b>Batch ID</b> 77235 |                  | <b>Test Name:</b> Dissolved Metals |                       |           |                   |                    |
| 14030008-01           | MW-18            | Groundwater                        | 2/26/2014 3:35:00 PM  |           | 3/7/2014 08:00 AM | 3/10/2014 01:11 PM |
| 14030008-02           | MW-19            |                                    | 2/26/2014 1:15:00 PM  |           | 3/7/2014 08:00 AM | 3/10/2014 01:19 PM |
| 14030008-03           | MW-25            |                                    | 2/26/2014 5:12:00 PM  |           | 3/7/2014 08:00 AM | 3/10/2014 01:21 PM |
|                       |                  |                                    |                       |           | 3/7/2014 08:00 AM | 3/11/2014 03:53 PM |
| 14030008-04           | Dup-3            |                                    | 2/26/2014 1:15:00 PM  |           | 3/7/2014 08:00 AM | 3/10/2014 01:24 PM |
| 14030008-05           | Dup-4            |                                    | 2/26/2014 5:12:00 PM  |           | 3/7/2014 08:00 AM | 3/10/2014 01:26 PM |
| 14030008-06           | MW-12R           |                                    | 2/27/2014 8:33:00 AM  |           | 3/7/2014 08:00 AM | 3/10/2014 01:29 PM |
| 14030008-07           | MW-7             |                                    | 2/27/2014 11:15:00 AM |           | 3/7/2014 08:00 AM | 3/10/2014 03:27 PM |
| 14030008-08           | RW-1             |                                    | 2/27/2014 1:10:00 PM  |           | 3/7/2014 08:00 AM | 3/10/2014 03:29 PM |
| 14030008-09           | MW-1             |                                    | 2/27/2014 2:20:00 PM  |           | 3/7/2014 08:00 AM | 3/10/2014 03:31 PM |
| 14030008-10           | MW-6             |                                    | 2/27/2014 4:05:00 PM  |           | 3/7/2014 08:00 AM | 3/10/2014 03:34 PM |
| 14030008-11           | MW-29            |                                    | 2/27/2014 6:05:00 PM  |           | 3/7/2014 08:00 AM | 3/10/2014 03:44 PM |
| 14030008-12           | Dup-2            |                                    |                       |           | 3/7/2014 08:00 AM | 3/10/2014 03:59 PM |
| 14030008-13           | MW-30            |                                    | 2/27/2014 7:50:00 PM  |           | 3/7/2014 08:00 AM | 3/10/2014 04:01 PM |
| 14030008-14           | MW-24            |                                    | 2/27/2014 10:59:00 AM |           | 3/7/2014 08:00 AM | 3/10/2014 04:04 PM |
| 14030008-15           | MW-13            |                                    | 2/27/2014 1:28:00 PM  |           | 3/7/2014 08:00 AM | 3/10/2014 04:06 PM |
|                       |                  |                                    |                       |           | 3/7/2014 08:00 AM | 3/11/2014 03:56 PM |
| 14030008-16           | MW-27            |                                    | 2/27/2014 12:20:00 PM |           | 3/7/2014 08:00 AM | 3/10/2014 04:16 PM |
|                       |                  |                                    |                       |           | 3/7/2014 08:00 AM | 3/11/2014 03:58 PM |
| 14030008-17           | MW-8             |                                    | 2/27/2014 3:05:00 PM  |           | 3/7/2014 08:00 AM | 3/10/2014 04:18 PM |
|                       |                  |                                    |                       |           | 3/7/2014 08:00 AM | 3/11/2014 04:01 PM |
| 14030008-18           | MW-17R           |                                    | 2/27/2014 5:42:00 PM  |           | 3/7/2014 08:00 AM | 3/10/2014 04:21 PM |
| 14030008-19           | WW-South         |                                    | 2/28/2014 9:55:00 AM  |           | 3/7/2014 08:00 AM | 3/10/2014 04:23 PM |
| 14030008-20           | WW-East          |                                    | 2/28/2014 10:35:00 AM |           | 3/7/2014 08:00 AM | 3/10/2014 04:26 PM |

**Work Order:** 14030008  
**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual

**DATES REPORT**

| Sample ID                    | Client Sample ID | Matrix                                   | Collection Date       | TCLP Date | Prep Date         | Analysis Date     |
|------------------------------|------------------|------------------------------------------|-----------------------|-----------|-------------------|-------------------|
| <b><u>Batch ID</u> 77254</b> |                  | <b><u>Test Name:</u> Mercury-SW7470A</b> |                       |           |                   |                   |
| 14030008-01C                 | MW-18            | Groundwater                              | 2/26/2014 3:35:00 PM  |           | 3/7/2014 10:22 AM | 3/7/2014 01:54 PM |
| 14030008-02C                 | MW-19            |                                          | 2/26/2014 1:15:00 PM  |           | 3/7/2014 10:22 AM | 3/7/2014 01:55 PM |
| 14030008-03C                 | MW-25            |                                          | 2/26/2014 5:12:00 PM  |           | 3/7/2014 10:22 AM | 3/7/2014 01:57 PM |
| 14030008-04C                 | Dup-3            |                                          | 2/26/2014 1:15:00 PM  |           | 3/7/2014 10:22 AM | 3/7/2014 01:59 PM |
| 14030008-05C                 | Dup-4            |                                          | 2/26/2014 5:12:00 PM  |           | 3/7/2014 10:22 AM | 3/7/2014 02:04 PM |
| 14030008-06C                 | MW-12R           |                                          | 2/27/2014 8:33:00 AM  |           | 3/7/2014 10:22 AM | 3/7/2014 02:06 PM |
| 14030008-07C                 | MW-7             |                                          | 2/27/2014 11:15:00 AM |           | 3/7/2014 10:22 AM | 3/7/2014 02:07 PM |
| 14030008-08C                 | RW-1             |                                          | 2/27/2014 1:10:00 PM  |           | 3/7/2014 10:22 AM | 3/7/2014 02:09 PM |
| 14030008-09C                 | MW-1             |                                          | 2/27/2014 2:20:00 PM  |           | 3/7/2014 10:22 AM | 3/7/2014 02:11 PM |
| 14030008-10C                 | MW-6             |                                          | 2/27/2014 4:05:00 PM  |           | 3/7/2014 10:22 AM | 3/7/2014 02:12 PM |
| 14030008-11C                 | MW-29            |                                          | 2/27/2014 6:05:00 PM  |           | 3/7/2014 10:22 AM | 3/7/2014 01:47 PM |
| 14030008-12C                 | Dup-2            |                                          |                       |           | 3/7/2014 10:22 AM | 3/7/2014 02:14 PM |
| 14030008-13C                 | MW-30            |                                          | 2/27/2014 7:50:00 PM  |           | 3/7/2014 10:22 AM | 3/7/2014 02:16 PM |
| 14030008-14C                 | MW-24            |                                          | 2/27/2014 10:59:00 AM |           | 3/7/2014 10:22 AM | 3/7/2014 02:17 PM |
| 14030008-15C                 | MW-13            |                                          | 2/27/2014 1:28:00 PM  |           | 3/7/2014 10:22 AM | 3/7/2014 02:19 PM |
| 14030008-16C                 | MW-27            |                                          | 2/27/2014 12:20:00 PM |           | 3/7/2014 10:22 AM | 3/7/2014 02:24 PM |
| 14030008-17C                 | MW-8             |                                          | 2/27/2014 3:05:00 PM  |           | 3/7/2014 10:22 AM | 3/7/2014 02:26 PM |
| 14030008-18C                 | MW-17R           |                                          | 2/27/2014 5:42:00 PM  |           | 3/7/2014 10:22 AM | 3/7/2014 02:28 PM |
| 14030008-19C                 | WW-South         |                                          | 2/28/2014 9:55:00 AM  |           | 3/7/2014 10:22 AM | 3/7/2014 02:29 PM |
| 14030008-20C                 | WW-East          |                                          | 2/28/2014 10:35:00 AM |           | 3/7/2014 10:22 AM | 3/7/2014 02:31 PM |

**Batch ID R162237** **Test Name: Volatiles - SW8260C**

|             |       |             |                      |  |  |                   |
|-------------|-------|-------------|----------------------|--|--|-------------------|
| 14030008-01 | MW-18 | Groundwater | 2/26/2014 3:35:00 PM |  |  | 3/3/2014 09:51 PM |
|-------------|-------|-------------|----------------------|--|--|-------------------|

**Work Order:** 14030008  
**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual

**DATES REPORT**

| Sample ID                                                                   | Client Sample ID | Matrix      | Collection Date       | TCLP Date | Prep Date | Analysis Date     |
|-----------------------------------------------------------------------------|------------------|-------------|-----------------------|-----------|-----------|-------------------|
| <b>Batch ID</b> <u>R162271</u> <b>Test Name:</b> <u>Volatiles - SW8260C</u> |                  |             |                       |           |           |                   |
| 14030008-02                                                                 | MW-19            | Groundwater | 2/26/2014 1:15:00 PM  |           |           | 3/4/2014 04:20 AM |
| 14030008-03                                                                 | MW-25            |             | 2/26/2014 5:12:00 PM  |           |           | 3/4/2014 04:46 AM |
| 14030008-04                                                                 | Dup-3            |             | 2/26/2014 1:15:00 PM  |           |           | 3/4/2014 05:11 AM |
| 14030008-05                                                                 | Dup-4            |             | 2/26/2014 5:12:00 PM  |           |           | 3/4/2014 05:37 AM |
| 14030008-06                                                                 | MW-12R           |             | 2/27/2014 8:33:00 AM  |           |           | 3/4/2014 06:03 AM |
| 14030008-07                                                                 | MW-7             |             | 2/27/2014 11:15:00 AM |           |           | 3/4/2014 06:29 AM |
| 14030008-08                                                                 | RW-1             |             | 2/27/2014 1:10:00 PM  |           |           | 3/4/2014 06:55 AM |
| 14030008-09                                                                 | MW-1             |             | 2/27/2014 2:20:00 PM  |           |           | 3/4/2014 07:21 AM |
| 14030008-10                                                                 | MW-6             |             | 2/27/2014 4:05:00 PM  |           |           | 3/4/2014 07:46 AM |
| 14030008-11                                                                 | MW-29            |             | 2/27/2014 6:05:00 PM  |           |           | 3/4/2014 02:10 AM |
| 14030008-12                                                                 | Dup-2            |             |                       |           |           | 3/4/2014 08:38 AM |
| 14030008-13                                                                 | MW-30            |             | 2/27/2014 7:50:00 PM  |           |           | 3/4/2014 08:12 AM |
| 14030008-14                                                                 | MW-24            |             | 2/27/2014 10:59:00 AM |           |           | 3/4/2014 09:04 AM |
| 14030008-15                                                                 | MW-13            |             | 2/27/2014 1:28:00 PM  |           |           | 3/4/2014 09:30 AM |
| 14030008-16                                                                 | MW-27            |             | 2/27/2014 12:20:00 PM |           |           | 3/4/2014 09:55 AM |
| 14030008-17                                                                 | MW-8             |             | 2/27/2014 3:05:00 PM  |           |           | 3/4/2014 10:18 AM |
| 14030008-18                                                                 | MW-17R           |             | 2/27/2014 5:42:00 PM  |           |           | 3/4/2014 10:40 AM |
| 14030008-19                                                                 | WW-South         |             | 2/28/2014 9:55:00 AM  |           |           | 3/4/2014 11:03 AM |
| 14030008-20                                                                 | WW-East          |             | 2/28/2014 10:35:00 AM |           |           | 3/4/2014 11:28 AM |

**Batch ID** R162292 **Test Name:** Volatiles - SW8260C

|             |            |       |           |  |  |                   |
|-------------|------------|-------|-----------|--|--|-------------------|
| 14030008-21 | TB-2-28-14 | Water | 2/26/2014 |  |  | 3/4/2014 08:09 PM |
|-------------|------------|-------|-----------|--|--|-------------------|

**Work Order:** 14030008  
**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual

## DATES REPORT

| Sample ID                                                              | Client Sample ID | Matrix      | Collection Date       | TCLP Date | Prep Date | Analysis Date     |
|------------------------------------------------------------------------|------------------|-------------|-----------------------|-----------|-----------|-------------------|
| <b><u>Batch ID</u> R162305    <u>Test Name:</u> Alkalinity-SM2320B</b> |                  |             |                       |           |           |                   |
| 14030008-01E                                                           | MW-18            | Groundwater | 2/26/2014 3:35:00 PM  |           |           | 3/4/2014 10:33 AM |
| 14030008-02E                                                           | MW-19            |             | 2/26/2014 1:15:00 PM  |           |           | 3/4/2014 10:38 AM |
| 14030008-03E                                                           | MW-25            |             | 2/26/2014 5:12:00 PM  |           |           | 3/4/2014 10:55 AM |
| 14030008-04E                                                           | Dup-3            |             | 2/26/2014 1:15:00 PM  |           |           | 3/4/2014 11:00 AM |
| 14030008-05E                                                           | Dup-4            |             | 2/26/2014 5:12:00 PM  |           |           | 3/4/2014 11:05 AM |
| 14030008-06E                                                           | MW-12R           |             | 2/27/2014 8:33:00 AM  |           |           | 3/4/2014 11:11 AM |
| 14030008-07E                                                           | MW-7             |             | 2/27/2014 11:15:00 AM |           |           | 3/4/2014 11:16 AM |
| 14030008-08E                                                           | RW-1             |             | 2/27/2014 1:10:00 PM  |           |           | 3/4/2014 11:22 AM |
| 14030008-09E                                                           | MW-1             |             | 2/27/2014 2:20:00 PM  |           |           | 3/4/2014 11:27 AM |
| 14030008-10E                                                           | MW-6             |             | 2/27/2014 4:05:00 PM  |           |           | 3/4/2014 11:33 AM |
| 14030008-11E                                                           | MW-29            |             | 2/27/2014 6:05:00 PM  |           |           | 3/4/2014 11:39 AM |
| 14030008-12E                                                           | Dup-2            |             |                       |           |           | 3/4/2014 11:49 AM |
| 14030008-13E                                                           | MW-30            |             | 2/27/2014 7:50:00 PM  |           |           | 3/4/2014 11:54 AM |
| 14030008-14E                                                           | MW-24            |             | 2/27/2014 10:59:00 AM |           |           | 3/4/2014 12:00 PM |
| 14030008-15E                                                           | MW-13            |             | 2/27/2014 1:28:00 PM  |           |           | 3/4/2014 12:05 PM |
| 14030008-16E                                                           | MW-27            |             | 2/27/2014 12:20:00 PM |           |           | 3/4/2014 12:11 PM |
| 14030008-17E                                                           | MW-8             |             | 2/27/2014 3:05:00 PM  |           |           | 3/4/2014 12:17 PM |
| 14030008-18E                                                           | MW-17R           |             | 2/27/2014 5:42:00 PM  |           |           | 3/4/2014 12:22 PM |
| 14030008-19E                                                           | WW-South         |             | 2/28/2014 9:55:00 AM  |           |           | 3/4/2014 12:28 PM |
| 14030008-20E                                                           | WW-East          |             | 2/28/2014 10:35:00 AM |           |           | 3/4/2014 12:38 PM |



**Work Order:** 14030008  
**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual

**DATES REPORT**

| Sample ID                                                           | Client Sample ID | Matrix      | Collection Date       | TCLP Date | Prep Date | Analysis Date     |
|---------------------------------------------------------------------|------------------|-------------|-----------------------|-----------|-----------|-------------------|
| <b><u>Batch ID</u> R162308    <u>Test Name:</u> pH - SM4500H+ B</b> |                  |             |                       |           |           |                   |
| 14030008-01E                                                        | MW-18            | Groundwater | 2/26/2014 3:35:00 PM  |           |           | 3/4/2014 10:33 AM |
| 14030008-02E                                                        | MW-19            |             | 2/26/2014 1:15:00 PM  |           |           | 3/4/2014 10:38 AM |
| 14030008-03E                                                        | MW-25            |             | 2/26/2014 5:12:00 PM  |           |           | 3/4/2014 10:55 AM |
| 14030008-04E                                                        | Dup-3            |             | 2/26/2014 1:15:00 PM  |           |           | 3/4/2014 11:00 AM |
| 14030008-05E                                                        | Dup-4            |             | 2/26/2014 5:12:00 PM  |           |           | 3/4/2014 11:05 AM |
| 14030008-06E                                                        | MW-12R           |             | 2/27/2014 8:33:00 AM  |           |           | 3/4/2014 11:11 AM |
| 14030008-07E                                                        | MW-7             |             | 2/27/2014 11:15:00 AM |           |           | 3/4/2014 11:16 AM |
| 14030008-08E                                                        | RW-1             |             | 2/27/2014 1:10:00 PM  |           |           | 3/4/2014 11:22 AM |
| 14030008-09E                                                        | MW-1             |             | 2/27/2014 2:20:00 PM  |           |           | 3/4/2014 11:27 AM |
| 14030008-10E                                                        | MW-6             |             | 2/27/2014 4:05:00 PM  |           |           | 3/4/2014 11:33 AM |
| 14030008-11E                                                        | MW-29            |             | 2/27/2014 6:05:00 PM  |           |           | 3/4/2014 11:39 AM |
| 14030008-12E                                                        | Dup-2            |             |                       |           |           | 3/4/2014 11:49 AM |
| 14030008-13E                                                        | MW-30            |             | 2/27/2014 7:50:00 PM  |           |           | 3/4/2014 11:54 AM |
| 14030008-14E                                                        | MW-24            |             | 2/27/2014 10:59:00 AM |           |           | 3/4/2014 12:00 PM |
| 14030008-15E                                                        | MW-13            |             | 2/27/2014 1:28:00 PM  |           |           | 3/4/2014 12:05 PM |
| 14030008-16E                                                        | MW-27            |             | 2/27/2014 12:20:00 PM |           |           | 3/4/2014 12:11 PM |
| 14030008-17E                                                        | MW-8             |             | 2/27/2014 3:05:00 PM  |           |           | 3/4/2014 12:17 PM |
| 14030008-18E                                                        | MW-17R           |             | 2/27/2014 5:42:00 PM  |           |           | 3/4/2014 12:22 PM |
| 14030008-19E                                                        | WW-South         |             | 2/28/2014 9:55:00 AM  |           |           | 3/4/2014 12:28 PM |
| 14030008-20E                                                        | WW-East          |             | 2/28/2014 10:35:00 AM |           |           | 3/4/2014 12:38 PM |

**Work Order:** 14030008  
**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual

**DATES REPORT**

| Sample ID                                                                 | Client Sample ID | Matrix      | Collection Date       | TCLP Date | Prep Date | Analysis Date     |
|---------------------------------------------------------------------------|------------------|-------------|-----------------------|-----------|-----------|-------------------|
| <b><u>Batch ID</u> R162309    <u>Test Name:</u> Specific Conductivity</b> |                  |             |                       |           |           |                   |
| 14030008-01E                                                              | MW-18            | Groundwater | 2/26/2014 3:35:00 PM  |           |           | 3/4/2014 10:33 AM |
| 14030008-02E                                                              | MW-19            |             | 2/26/2014 1:15:00 PM  |           |           | 3/4/2014 10:38 AM |
| 14030008-03E                                                              | MW-25            |             | 2/26/2014 5:12:00 PM  |           |           | 3/4/2014 10:55 AM |
| 14030008-04E                                                              | Dup-3            |             | 2/26/2014 1:15:00 PM  |           |           | 3/4/2014 11:00 AM |
| 14030008-05E                                                              | Dup-4            |             | 2/26/2014 5:12:00 PM  |           |           | 3/4/2014 11:05 AM |
| 14030008-06E                                                              | MW-12R           |             | 2/27/2014 8:33:00 AM  |           |           | 3/4/2014 11:11 AM |
| 14030008-07E                                                              | MW-7             |             | 2/27/2014 11:15:00 AM |           |           | 3/4/2014 11:16 AM |
| 14030008-08E                                                              | RW-1             |             | 2/27/2014 1:10:00 PM  |           |           | 3/4/2014 11:22 AM |
| 14030008-09E                                                              | MW-1             |             | 2/27/2014 2:20:00 PM  |           |           | 3/4/2014 11:27 AM |
| 14030008-10E                                                              | MW-6             |             | 2/27/2014 4:05:00 PM  |           |           | 3/4/2014 11:33 AM |
| 14030008-11E                                                              | MW-29            |             | 2/27/2014 6:05:00 PM  |           |           | 3/4/2014 11:39 AM |
| 14030008-12E                                                              | Dup-2            |             |                       |           |           | 3/4/2014 11:49 AM |
| 14030008-13E                                                              | MW-30            |             | 2/27/2014 7:50:00 PM  |           |           | 3/4/2014 11:54 AM |
| 14030008-14E                                                              | MW-24            |             | 2/27/2014 10:59:00 AM |           |           | 3/4/2014 12:00 PM |
| 14030008-15E                                                              | MW-13            |             | 2/27/2014 1:28:00 PM  |           |           | 3/4/2014 12:05 PM |
| 14030008-16E                                                              | MW-27            |             | 2/27/2014 12:20:00 PM |           |           | 3/4/2014 12:11 PM |
| 14030008-17E                                                              | MW-8             |             | 2/27/2014 3:05:00 PM  |           |           | 3/4/2014 12:17 PM |
| 14030008-18E                                                              | MW-17R           |             | 2/27/2014 5:42:00 PM  |           |           | 3/4/2014 12:22 PM |
| 14030008-19E                                                              | WW-South         |             | 2/28/2014 9:55:00 AM  |           |           | 3/4/2014 12:28 PM |
| 14030008-20E                                                              | WW-East          |             | 2/28/2014 10:35:00 AM |           |           | 3/4/2014 12:38 PM |

**Work Order:** 14030008  
**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual

**DATES REPORT**

| Sample ID                                                                  | Client Sample ID | Matrix      | Collection Date       | TCLP Date | Prep Date | Analysis Date     |
|----------------------------------------------------------------------------|------------------|-------------|-----------------------|-----------|-----------|-------------------|
| <b><u>Batch ID R162437</u>    <u>Test Name:</u> Total Dissolved Solids</b> |                  |             |                       |           |           |                   |
| 14030008-01E                                                               | MW-18            | Groundwater | 2/26/2014 3:35:00 PM  |           |           | 3/5/2014 10:40 AM |
| 14030008-02E                                                               | MW-19            |             | 2/26/2014 1:15:00 PM  |           |           | 3/5/2014 10:40 AM |
| 14030008-03E                                                               | MW-25            |             | 2/26/2014 5:12:00 PM  |           |           | 3/5/2014 10:40 AM |
| 14030008-04E                                                               | Dup-3            |             | 2/26/2014 1:15:00 PM  |           |           | 3/5/2014 10:40 AM |
| 14030008-05E                                                               | Dup-4            |             | 2/26/2014 5:12:00 PM  |           |           | 3/5/2014 10:40 AM |
| 14030008-06E                                                               | MW-12R           |             | 2/27/2014 8:33:00 AM  |           |           | 3/5/2014 10:40 AM |
| 14030008-07E                                                               | MW-7             |             | 2/27/2014 11:15:00 AM |           |           | 3/5/2014 10:40 AM |
| 14030008-08E                                                               | RW-1             |             | 2/27/2014 1:10:00 PM  |           |           | 3/5/2014 10:40 AM |
| 14030008-09E                                                               | MW-1             |             | 2/27/2014 2:20:00 PM  |           |           | 3/5/2014 10:40 AM |
| 14030008-10E                                                               | MW-6             |             | 2/27/2014 4:05:00 PM  |           |           | 3/5/2014 10:40 AM |
| 14030008-14E                                                               | MW-24            |             | 2/27/2014 10:59:00 AM |           |           | 3/5/2014 10:40 AM |
| 14030008-15E                                                               | MW-13            |             | 2/27/2014 1:28:00 PM  |           |           | 3/5/2014 10:40 AM |
| 14030008-16E                                                               | MW-27            |             | 2/27/2014 12:20:00 PM |           |           | 3/5/2014 10:40 AM |
| 14030008-17E                                                               | MW-8             |             | 2/27/2014 3:05:00 PM  |           |           | 3/5/2014 10:40 AM |
| 14030008-18E                                                               | MW-17R           |             | 2/27/2014 5:42:00 PM  |           |           | 3/5/2014 10:40 AM |
| <b><u>Batch ID R162534</u>    <u>Test Name:</u> Total Dissolved Solids</b> |                  |             |                       |           |           |                   |
| 14030008-11E                                                               | MW-29            | Groundwater | 2/27/2014 6:05:00 PM  |           |           | 3/6/2014 04:45 PM |
| 14030008-12E                                                               | Dup-2            |             |                       |           |           | 3/6/2014 04:45 PM |
| 14030008-13E                                                               | MW-30            |             | 2/27/2014 7:50:00 PM  |           |           | 3/6/2014 04:45 PM |
| 14030008-19E                                                               | WW-South         |             | 2/28/2014 9:55:00 AM  |           |           | 3/6/2014 04:45 PM |
| 14030008-20E                                                               | WW-East          |             | 2/28/2014 10:35:00 AM |           |           | 3/6/2014 04:45 PM |

**Work Order:** 14030008  
**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual

**DATES REPORT**

| Sample ID                                                                     | Client Sample ID | Matrix      | Collection Date       | TCLP Date | Prep Date | Analysis Date      |
|-------------------------------------------------------------------------------|------------------|-------------|-----------------------|-----------|-----------|--------------------|
| <b><u>Batch ID</u> R162903    <u>Test Name:</u> Anions - EPA 300.0 (1993)</b> |                  |             |                       |           |           |                    |
| 14030008-01E                                                                  | MW-18            | Groundwater | 2/26/2014 3:35:00 PM  |           |           | 3/14/2014 01:58 AM |
|                                                                               |                  |             |                       |           |           | 3/14/2014 11:21 AM |
| 14030008-02E                                                                  | MW-19            |             | 2/26/2014 1:15:00 PM  |           |           | 3/14/2014 02:12 AM |
|                                                                               |                  |             |                       |           |           | 3/14/2014 11:36 AM |
| 14030008-03E                                                                  | MW-25            |             | 2/26/2014 5:12:00 PM  |           |           | 3/14/2014 02:27 AM |
|                                                                               |                  |             |                       |           |           | 3/14/2014 11:51 AM |
| 14030008-04E                                                                  | Dup-3            |             | 2/26/2014 1:15:00 PM  |           |           | 3/14/2014 02:41 AM |
|                                                                               |                  |             |                       |           |           | 3/14/2014 12:05 PM |
| 14030008-05E                                                                  | Dup-4            |             | 2/26/2014 5:12:00 PM  |           |           | 3/14/2014 02:56 AM |
|                                                                               |                  |             |                       |           |           | 3/14/2014 12:20 PM |
| 14030008-06E                                                                  | MW-12R           |             | 2/27/2014 8:33:00 AM  |           |           | 3/14/2014 03:10 AM |
| 14030008-07E                                                                  | MW-7             |             | 2/27/2014 11:15:00 AM |           |           | 3/14/2014 03:25 AM |
| 14030008-08E                                                                  | RW-1             |             | 2/27/2014 1:10:00 PM  |           |           | 3/14/2014 03:39 AM |
| 14030008-09E                                                                  | MW-1             |             | 2/27/2014 2:20:00 PM  |           |           | 3/14/2014 04:23 AM |
| 14030008-10E                                                                  | MW-6             |             | 2/27/2014 4:05:00 PM  |           |           | 3/14/2014 04:38 AM |
|                                                                               |                  |             |                       |           |           | 3/14/2014 02:37 PM |
| 14030008-11E                                                                  | MW-29            |             | 2/27/2014 6:05:00 PM  |           |           | 3/14/2014 04:52 AM |
|                                                                               |                  |             |                       |           |           | 3/14/2014 02:52 PM |
| 14030008-12E                                                                  | Dup-2            |             |                       |           |           | 3/14/2014 05:36 AM |
|                                                                               |                  |             |                       |           |           | 3/14/2014 03:35 PM |
| 14030008-13E                                                                  | MW-30            |             | 2/27/2014 7:50:00 PM  |           |           | 3/14/2014 05:50 AM |
| 14030008-14E                                                                  | MW-24            |             | 2/27/2014 10:59:00 AM |           |           | 3/14/2014 06:05 AM |
| 14030008-15E                                                                  | MW-13            |             | 2/27/2014 1:28:00 PM  |           |           | 3/14/2014 06:19 AM |
|                                                                               |                  |             |                       |           |           | 3/14/2014 03:50 PM |
| 14030008-16E                                                                  | MW-27            |             | 2/27/2014 12:20:00 PM |           |           | 3/14/2014 06:34 AM |

**Work Order:** 14030008  
**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual

**DATES REPORT**

| Sample ID    | Client Sample ID | Matrix      | Collection Date       | TCLP Date | Prep Date | Analysis Date      |
|--------------|------------------|-------------|-----------------------|-----------|-----------|--------------------|
| 14030008-16E | MW-27            | Groundwater | 2/27/2014 12:20:00 PM |           |           | 3/14/2014 04:04 PM |
| 14030008-17E | MW-8             |             | 2/27/2014 3:05:00 PM  |           |           | 3/14/2014 07:18 AM |
|              |                  |             |                       |           |           | 3/14/2014 04:19 PM |
| 14030008-18E | MW-17R           |             | 2/27/2014 5:42:00 PM  |           |           | 3/14/2014 07:32 AM |
|              |                  |             |                       |           |           | 3/14/2014 04:33 PM |
| 14030008-19E | WW-South         |             | 2/28/2014 9:55:00 AM  |           |           | 3/14/2014 07:47 AM |
|              |                  |             |                       |           |           | 3/14/2014 04:48 PM |
| 14030008-20E | WW-East          |             | 2/28/2014 10:35:00 AM |           |           | 3/14/2014 08:01 AM |
|              |                  |             |                       |           |           | 3/14/2014 05:02 PM |

**Work Order:** 14030008  
**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual

**DATES REPORT**

| Sample ID                                                                     | Client Sample ID | Matrix      | Collection Date       | TCLP Date | Prep Date | Analysis Date      |
|-------------------------------------------------------------------------------|------------------|-------------|-----------------------|-----------|-----------|--------------------|
| <b><u>Batch ID</u> R162945    <u>Test Name:</u> Anions - EPA 300.0 (1993)</b> |                  |             |                       |           |           |                    |
| 14030008-01B                                                                  | MW-18            | Groundwater | 2/26/2014 3:35:00 PM  |           |           | 3/16/2014 04:18 PM |
| 14030008-02B                                                                  | MW-19            |             | 2/26/2014 1:15:00 PM  |           |           | 3/16/2014 04:44 PM |
| 14030008-03B                                                                  | MW-25            |             | 2/26/2014 5:12:00 PM  |           |           | 3/16/2014 05:10 PM |
| 14030008-04B                                                                  | Dup-3            |             | 2/26/2014 1:15:00 PM  |           |           | 3/16/2014 05:36 PM |
| 14030008-05B                                                                  | Dup-4            |             | 2/26/2014 5:12:00 PM  |           |           | 3/16/2014 06:02 PM |
| 14030008-06B                                                                  | MW-12R           |             | 2/27/2014 8:33:00 AM  |           |           | 3/16/2014 06:27 PM |
| 14030008-07B                                                                  | MW-7             |             | 2/27/2014 11:15:00 AM |           |           | 3/16/2014 06:53 PM |
| 14030008-08B                                                                  | RW-1             |             | 2/27/2014 1:10:00 PM  |           |           | 3/16/2014 07:19 PM |
| 14030008-09B                                                                  | MW-1             |             | 2/27/2014 2:20:00 PM  |           |           | 3/16/2014 08:36 PM |
| 14030008-10B                                                                  | MW-6             |             | 2/27/2014 4:05:00 PM  |           |           | 3/16/2014 09:02 PM |
| 14030008-11B                                                                  | MW-29            |             | 2/27/2014 6:05:00 PM  |           |           | 3/16/2014 09:28 PM |
| 14030008-12B                                                                  | Dup-2            |             |                       |           |           | 3/16/2014 10:46 PM |
| 14030008-13B                                                                  | MW-30            |             | 2/27/2014 7:50:00 PM  |           |           | 3/16/2014 11:11 PM |
| 14030008-14B                                                                  | MW-24            |             | 2/27/2014 10:59:00 AM |           |           | 3/16/2014 11:37 PM |
| 14030008-15B                                                                  | MW-13            |             | 2/27/2014 1:28:00 PM  |           |           | 3/17/2014 12:03 AM |
| 14030008-16B                                                                  | MW-27            |             | 2/27/2014 12:20:00 PM |           |           | 3/17/2014 12:29 AM |
| 14030008-17B                                                                  | MW-8             |             | 2/27/2014 3:05:00 PM  |           |           | 3/17/2014 01:46 AM |
| 14030008-18B                                                                  | MW-17R           |             | 2/27/2014 5:42:00 PM  |           |           | 3/17/2014 02:12 AM |
| 14030008-19B                                                                  | WW-South         |             | 2/28/2014 9:55:00 AM  |           |           | 3/17/2014 02:38 AM |
| 14030008-20B                                                                  | WW-East          |             | 2/28/2014 10:35:00 AM |           |           | 3/17/2014 03:04 AM |

# ALS Environmental

Date: 18-Mar-14

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **77235** Instrument ID **ICPMS05** Method: **SW6020** **(Dissolve)**

| MBLK       |        | Sample ID: <b>MBLKW1-030714-77235</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/11/2014 03:48 PM</b> |           |              |
|------------|--------|---------------------------------------|---------|---------------|------|-----------------------|---------------|------------------------------------------|-----------|--------------|
| Client ID: |        | Run ID: <b>ICPMS05_140311A</b>        |         |               |      | SeqNo: <b>3561104</b> |               | Prep Date: <b>3/7/2014</b>               |           | DF: <b>1</b> |
| Analyte    | Result | PQL                                   | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                     | RPD Limit | Qual         |
| Aluminum   | ND     | 0.0100                                |         |               |      |                       |               |                                          |           |              |
| Arsenic    | ND     | 0.00500                               |         |               |      |                       |               |                                          |           |              |
| Barium     | ND     | 0.00500                               |         |               |      |                       |               |                                          |           |              |
| Boron      | ND     | 0.0500                                |         |               |      |                       |               |                                          |           |              |
| Cadmium    | ND     | 0.00200                               |         |               |      |                       |               |                                          |           |              |
| Calcium    | ND     | 0.500                                 |         |               |      |                       |               |                                          |           |              |
| Chromium   | ND     | 0.00500                               |         |               |      |                       |               |                                          |           |              |
| Cobalt     | ND     | 0.00500                               |         |               |      |                       |               |                                          |           |              |
| Copper     | ND     | 0.00500                               |         |               |      |                       |               |                                          |           |              |
| Iron       | ND     | 0.200                                 |         |               |      |                       |               |                                          |           |              |
| Lead       | ND     | 0.00500                               |         |               |      |                       |               |                                          |           |              |
| Magnesium  | ND     | 0.200                                 |         |               |      |                       |               |                                          |           |              |
| Manganese  | ND     | 0.00500                               |         |               |      |                       |               |                                          |           |              |
| Molybdenum | ND     | 0.00500                               |         |               |      |                       |               |                                          |           |              |
| Nickel     | ND     | 0.00500                               |         |               |      |                       |               |                                          |           |              |
| Potassium  | ND     | 0.200                                 |         |               |      |                       |               |                                          |           |              |
| Selenium   | ND     | 0.00500                               |         |               |      |                       |               |                                          |           |              |
| Silver     | ND     | 0.00500                               |         |               |      |                       |               |                                          |           |              |
| Sodium     | ND     | 0.200                                 |         |               |      |                       |               |                                          |           |              |
| Uranium    | ND     | 0.00500                               |         |               |      |                       |               |                                          |           |              |
| Zinc       | ND     | 0.00500                               |         |               |      |                       |               |                                          |           |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **77235** Instrument ID **ICPMS05** Method: **SW6020** **(Dissolve)**

| <b>LCS</b> |         | Sample ID: <b>MLCSW1-030714-77235</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/10/2014 01:09 PM</b> |           |              |
|------------|---------|---------------------------------------|---------|---------------|------|-----------------------|---------------|------------------------------------------|-----------|--------------|
| Client ID: |         | Run ID: <b>ICPMS05_140310A</b>        |         |               |      | SeqNo: <b>3558689</b> |               | Prep Date: <b>3/7/2014</b>               |           | DF: <b>1</b> |
| Analyte    | Result  | PQL                                   | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                     | RPD Limit | Qual         |
| Aluminum   | 0.1013  | 0.0100                                | 0.1     | 0             | 101  | 80-120                |               |                                          |           |              |
| Arsenic    | 0.04881 | 0.00500                               | 0.05    | 0             | 97.6 | 80-120                |               |                                          |           |              |
| Barium     | 0.04522 | 0.00500                               | 0.05    | 0             | 90.4 | 80-120                |               |                                          |           |              |
| Boron      | 0.4298  | 0.0500                                | 0.5     | 0             | 86   | 80-120                |               |                                          |           |              |
| Cadmium    | 0.04501 | 0.00200                               | 0.05    | 0             | 90   | 80-120                |               |                                          |           |              |
| Calcium    | 4.723   | 0.500                                 | 5       | 0             | 94.5 | 80-120                |               |                                          |           |              |
| Chromium   | 0.04737 | 0.00500                               | 0.05    | 0             | 94.7 | 80-120                |               |                                          |           |              |
| Cobalt     | 0.04737 | 0.00500                               | 0.05    | 0             | 94.7 | 80-120                |               |                                          |           |              |
| Copper     | 0.05    | 0.00500                               | 0.05    | 0             | 100  | 80-120                |               |                                          |           |              |
| Iron       | 4.871   | 0.200                                 | 5       | 0             | 97.4 | 80-120                |               |                                          |           |              |
| Lead       | 0.04112 | 0.00500                               | 0.05    | 0             | 82.2 | 80-120                |               |                                          |           |              |
| Magnesium  | 4.941   | 0.200                                 | 5       | 0             | 98.8 | 80-120                |               |                                          |           |              |
| Manganese  | 0.04916 | 0.00500                               | 0.05    | 0             | 98.3 | 80-120                |               |                                          |           |              |
| Molybdenum | 0.04685 | 0.00500                               | 0.05    | 0             | 93.7 | 80-120                |               |                                          |           |              |
| Nickel     | 0.04825 | 0.00500                               | 0.05    | 0             | 96.5 | 80-120                |               |                                          |           |              |
| Potassium  | 4.753   | 0.200                                 | 5       | 0             | 95.1 | 80-120                |               |                                          |           |              |
| Selenium   | 0.05099 | 0.00500                               | 0.05    | 0             | 102  | 80-120                |               |                                          |           |              |
| Silver     | 0.04675 | 0.00500                               | 0.05    | 0             | 93.5 | 80-120                |               |                                          |           |              |
| Sodium     | 4.862   | 0.200                                 | 5       | 0             | 97.2 | 80-120                |               |                                          |           |              |
| Zinc       | 0.05824 | 0.00500                               | 0.05    | 0             | 116  | 80-120                |               |                                          |           |              |

| <b>LCS</b> |         | Sample ID: <b>MLCSW1-030714-77235</b> |         |               |      | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/11/2014 03:51 PM</b> |           |              |
|------------|---------|---------------------------------------|---------|---------------|------|-----------------------|---------------|------------------------------------------|-----------|--------------|
| Client ID: |         | Run ID: <b>ICPMS05_140311A</b>        |         |               |      | SeqNo: <b>3561105</b> |               | Prep Date: <b>3/7/2014</b>               |           | DF: <b>1</b> |
| Analyte    | Result  | PQL                                   | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                     | RPD Limit | Qual         |
| Uranium    | 0.09323 | 0.00500                               | 0.1     | 0             | 93.2 | 80-120                |               |                                          |           |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **77235** Instrument ID **ICPMS05** Method: **SW6020** **(Dissolve)**

**MS** Sample ID: **14030008-11DMS** Units: **mg/L** Analysis Date: **3/10/2014 03:49 PM**  
 Client ID: **MW-29** Run ID: **ICPMS05\_140310A** SeqNo: **3559487** Prep Date: **3/7/2014** DF: **1**

| Analyte    | Result  | PQL     | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|------------|---------|---------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Aluminum   | 0.1178  | 0.0100  | 0.1     | 0.007394      | 110  | 75-125        |               |      |           |      |
| Arsenic    | 0.05348 | 0.00500 | 0.05    | 0.002645      | 102  | 75-125        |               |      |           |      |
| Barium     | 0.1236  | 0.00500 | 0.05    | 0.07252       | 102  | 75-125        |               |      |           |      |
| Boron      | 0.6743  | 0.0500  | 0.5     | 0.1706        | 101  | 75-125        |               |      |           |      |
| Cadmium    | 0.04954 | 0.00200 | 0.05    | 0.000064      | 99   | 75-125        |               |      |           |      |
| Calcium    | 125.9   | 0.500   | 5       | 122.3         | 71.5 | 75-125        |               |      |           | SO   |
| Chromium   | 0.3142  | 0.00500 | 0.05    | 0.2504        | 128  | 75-125        |               |      |           | SO   |
| Cobalt     | 0.04979 | 0.00500 | 0.05    | 0.000172      | 99.2 | 75-125        |               |      |           |      |
| Copper     | 0.05126 | 0.00500 | 0.05    | 0.000438      | 102  | 75-125        |               |      |           |      |
| Iron       | 5.281   | 0.200   | 5       | 0.04338       | 105  | 75-125        |               |      |           |      |
| Lead       | 0.04644 | 0.00500 | 0.05    | 0.000168      | 92.5 | 75-125        |               |      |           |      |
| Magnesium  | 21.78   | 0.200   | 5       | 16.26         | 110  | 75-125        |               |      |           |      |
| Manganese  | 0.05497 | 0.00500 | 0.05    | 0.003743      | 102  | 75-125        |               |      |           |      |
| Molybdenum | 0.05274 | 0.00500 | 0.05    | 0.00312       | 99.2 | 75-125        |               |      |           |      |
| Nickel     | 0.05772 | 0.00500 | 0.05    | 0.004864      | 106  | 75-125        |               |      |           |      |
| Potassium  | 7.227   | 0.200   | 5       | 2.373         | 97.1 | 75-125        |               |      |           |      |
| Selenium   | 0.05449 | 0.00500 | 0.05    | 0.002164      | 105  | 75-125        |               |      |           |      |
| Silver     | 0.04807 | 0.00500 | 0.05    | 0.000059      | 96   | 75-125        |               |      |           |      |
| Sodium     | 66.51   | 0.200   | 5       | 59.32         | 144  | 75-125        |               |      |           | SO   |
| Uranium    | 0.1028  | 0.00500 | 0.1     | 0.002899      | 99.9 | 75-125        |               |      |           |      |
| Zinc       | 0.05945 | 0.00500 | 0.05    | 0.01148       | 95.9 | 75-125        |               |      |           |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **77235** Instrument ID **ICPMS05** Method: **SW6020** **(Dissolve)**

**MSD** Sample ID: **14030008-11DMSD** Units: **mg/L** Analysis Date: **3/10/2014 03:51 PM**  
 Client ID: **MW-29** Run ID: **ICPMS05\_140310A** SeqNo: **3559488** Prep Date: **3/7/2014** DF: **1**

| Analyte    | Result  | PQL     | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD  | RPD Limit | Qual |
|------------|---------|---------|---------|---------------|------|---------------|---------------|-------|-----------|------|
| Aluminum   | 0.1142  | 0.0100  | 0.1     | 0.007394      | 107  | 75-125        | 0.1178        | 3.15  | 25        |      |
| Arsenic    | 0.05463 | 0.00500 | 0.05    | 0.002645      | 104  | 75-125        | 0.05348       | 2.12  | 25        |      |
| Barium     | 0.1261  | 0.00500 | 0.05    | 0.07252       | 107  | 75-125        | 0.1236        | 1.97  | 25        |      |
| Boron      | 0.6919  | 0.0500  | 0.5     | 0.1706        | 104  | 75-125        | 0.6743        | 2.58  | 25        |      |
| Cadmium    | 0.05024 | 0.00200 | 0.05    | 0.000064      | 100  | 75-125        | 0.04954       | 1.4   | 25        |      |
| Calcium    | 128.7   | 0.500   | 5       | 122.3         | 127  | 75-125        | 125.9         | 2.17  | 25        | SO   |
| Chromium   | 0.3053  | 0.00500 | 0.05    | 0.2504        | 110  | 75-125        | 0.3142        | 2.87  | 25        | O    |
| Cobalt     | 0.04872 | 0.00500 | 0.05    | 0.000172      | 97.1 | 75-125        | 0.04979       | 2.17  | 25        |      |
| Copper     | 0.05107 | 0.00500 | 0.05    | 0.000438      | 101  | 75-125        | 0.05126       | 0.383 | 25        |      |
| Iron       | 5.204   | 0.200   | 5       | 0.04338       | 103  | 75-125        | 5.281         | 1.47  | 25        |      |
| Lead       | 0.0479  | 0.00500 | 0.05    | 0.000168      | 95.5 | 75-125        | 0.04644       | 3.09  | 25        |      |
| Magnesium  | 21.26   | 0.200   | 5       | 16.26         | 100  | 75-125        | 21.78         | 2.39  | 25        |      |
| Manganese  | 0.05423 | 0.00500 | 0.05    | 0.003743      | 101  | 75-125        | 0.05497       | 1.35  | 25        |      |
| Molybdenum | 0.05471 | 0.00500 | 0.05    | 0.00312       | 103  | 75-125        | 0.05274       | 3.67  | 25        |      |
| Nickel     | 0.05528 | 0.00500 | 0.05    | 0.004864      | 101  | 75-125        | 0.05772       | 4.32  | 25        |      |
| Potassium  | 7.369   | 0.200   | 5       | 2.373         | 99.9 | 75-125        | 7.227         | 1.94  | 25        |      |
| Selenium   | 0.05473 | 0.00500 | 0.05    | 0.002164      | 105  | 75-125        | 0.05449       | 0.438 | 25        |      |
| Silver     | 0.04898 | 0.00500 | 0.05    | 0.000059      | 97.8 | 75-125        | 0.04807       | 1.89  | 25        |      |
| Sodium     | 65.16   | 0.200   | 5       | 59.32         | 117  | 75-125        | 66.51         | 2.05  | 25        | O    |
| Uranium    | 0.1048  | 0.00500 | 0.1     | 0.002899      | 102  | 75-125        | 0.1028        | 1.95  | 25        |      |
| Zinc       | 0.05977 | 0.00500 | 0.05    | 0.01148       | 96.6 | 75-125        | 0.05945       | 0.545 | 25        |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **77235** Instrument ID **ICPMS05** Method: **SW6020** **(Dissolve)**

**DUP** Sample ID: **14030008-11DDUP** Units: **mg/L** Analysis Date: **3/10/2014 03:46 PM**  
 Client ID: **MW-29** Run ID: **ICPMS05\_140310A** SeqNo: **3559486** Prep Date: **3/7/2014** DF: **1**

| Analyte    | Result  | PQL     | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD  | RPD Limit | Qual |
|------------|---------|---------|---------|---------------|------|---------------|---------------|-------|-----------|------|
| Aluminum   | ND      | 0.0100  |         |               |      |               | 0.007394      | 0     | 25        |      |
| Arsenic    | ND      | 0.00500 |         |               |      |               | 0.002645      | 0     | 25        |      |
| Barium     | 0.07658 | 0.00500 |         |               |      |               | 0.07252       | 5.44  | 25        |      |
| Boron      | 0.1709  | 0.0500  |         |               |      |               | 0.1706        | 0.183 | 25        |      |
| Cadmium    | ND      | 0.00200 |         |               |      |               | 0.000064      | 0     | 25        |      |
| Calcium    | 122.6   | 0.500   |         |               |      |               | 122.3         | 0.22  | 25        |      |
| Chromium   | 0.2541  | 0.00500 |         |               |      |               | 0.2504        | 1.46  | 25        |      |
| Cobalt     | ND      | 0.00500 |         |               |      |               | 0.000172      | 0     | 25        |      |
| Copper     | ND      | 0.00500 |         |               |      |               | 0.000438      | 0     | 25        |      |
| Iron       | ND      | 0.200   |         |               |      |               | 0.04338       | 0     | 25        |      |
| Lead       | ND      | 0.00500 |         |               |      |               | 0.000168      | 0     | 25        |      |
| Magnesium  | 16.31   | 0.200   |         |               |      |               | 16.26         | 0.267 | 25        |      |
| Manganese  | ND      | 0.00500 |         |               |      |               | 0.003743      | 0     | 25        |      |
| Molybdenum | ND      | 0.00500 |         |               |      |               | 0.00312       | 0     | 25        |      |
| Nickel     | ND      | 0.00500 |         |               |      |               | 0.004864      | 0     | 25        |      |
| Potassium  | 2.341   | 0.200   |         |               |      |               | 2.373         | 1.4   | 25        |      |
| Selenium   | ND      | 0.00500 |         |               |      |               | 0.002164      | 0     | 25        |      |
| Silver     | ND      | 0.00500 |         |               |      |               | 0.000059      | 0     | 25        |      |
| Sodium     | 60.31   | 0.200   |         |               |      |               | 59.32         | 1.66  | 25        |      |
| Uranium    | ND      | 0.00500 |         |               |      |               | 0.002899      | 0     | 25        |      |
| Zinc       | 0.03072 | 0.00500 |         |               |      |               | 0.01148       | 91.2  | 25        | R    |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14030008-01D | 14030008-02D | 14030008-03D | 14030008-04D |
| 14030008-05D | 14030008-06D | 14030008-07D | 14030008-08D |
| 14030008-09D | 14030008-10D | 14030008-11D | 14030008-12D |
| 14030008-13D | 14030008-14D | 14030008-15D | 14030008-16D |
| 14030008-17D | 14030008-18D | 14030008-19D | 14030008-20D |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **77254** Instrument ID **HG03** Method: **SW7470**

|             |                                       |          |         |               |                       |               |                                         |      |              |      |
|-------------|---------------------------------------|----------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>MBLK</b> | Sample ID: <b>GBLKW2-030714-77254</b> |          |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/7/2014 01:43 PM</b> |      |              |      |
| Client ID:  | Run ID: <b>HG03_140305A</b>           |          |         |               | SeqNo: <b>3557111</b> |               | Prep Date: <b>3/7/2014</b>              |      | DF: <b>1</b> |      |
| Analyte     | Result                                | PQL      | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Mercury     | ND                                    | 0.000200 |         |               |                       |               |                                         |      |              |      |

|            |                                       |          |         |               |                       |               |                                         |      |              |      |
|------------|---------------------------------------|----------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>LCS</b> | Sample ID: <b>GLCSW2-030714-77254</b> |          |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/7/2014 01:45 PM</b> |      |              |      |
| Client ID: | Run ID: <b>HG03_140305A</b>           |          |         |               | SeqNo: <b>3557112</b> |               | Prep Date: <b>3/7/2014</b>              |      | DF: <b>1</b> |      |
| Analyte    | Result                                | PQL      | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Mercury    | 0.00545                               | 0.000200 | 0.005   | 0             | 109                   | 80-124        |                                         |      |              |      |

|                         |                                  |          |         |               |                       |               |                                         |      |              |      |
|-------------------------|----------------------------------|----------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>MS</b>               | Sample ID: <b>14030008-11CMS</b> |          |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/7/2014 01:50 PM</b> |      |              |      |
| Client ID: <b>MW-29</b> | Run ID: <b>HG03_140305A</b>      |          |         |               | SeqNo: <b>3557115</b> |               | Prep Date: <b>3/7/2014</b>              |      | DF: <b>1</b> |      |
| Analyte                 | Result                           | PQL      | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Mercury                 | 0.00537                          | 0.000200 | 0.005   | -0.000036     | 108                   | 80-124        |                                         |      |              |      |

|                         |                                   |          |         |               |                       |               |                                         |      |              |      |
|-------------------------|-----------------------------------|----------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>MSD</b>              | Sample ID: <b>14030008-11CMSD</b> |          |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/7/2014 01:52 PM</b> |      |              |      |
| Client ID: <b>MW-29</b> | Run ID: <b>HG03_140305A</b>       |          |         |               | SeqNo: <b>3557116</b> |               | Prep Date: <b>3/7/2014</b>              |      | DF: <b>1</b> |      |
| Analyte                 | Result                            | PQL      | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Mercury                 | 0.00526                           | 0.000200 | 0.005   | -0.000036     | 106                   | 80-124        | 0.00537                                 | 2.07 | 20           |      |

|                         |                                   |          |         |               |                       |               |                                         |      |              |      |
|-------------------------|-----------------------------------|----------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>DUP</b>              | Sample ID: <b>14030008-11CDUP</b> |          |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/7/2014 01:48 PM</b> |      |              |      |
| Client ID: <b>MW-29</b> | Run ID: <b>HG03_140305A</b>       |          |         |               | SeqNo: <b>3557114</b> |               | Prep Date: <b>3/7/2014</b>              |      | DF: <b>1</b> |      |
| Analyte                 | Result                            | PQL      | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Mercury                 | ND                                | 0.000200 |         |               |                       |               | -0.000036                               | 0    | 20           |      |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14030008-01C | 14030008-02C | 14030008-03C | 14030008-04C |
| 14030008-05C | 14030008-06C | 14030008-07C | 14030008-08C |
| 14030008-09C | 14030008-10C | 14030008-11C | 14030008-12C |
| 14030008-13C | 14030008-14C | 14030008-15C | 14030008-16C |
| 14030008-17C | 14030008-18C | 14030008-19C | 14030008-20C |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **77152** Instrument ID **SV-6** Method: **SW8270**

**MBLK** Sample ID: **SBLKW1-140304-77152** Units: **µg/L** Analysis Date: **3/5/2014 01:30 PM**

Client ID: Run ID: **SV-6\_140305A** SeqNo: **3559269** Prep Date: **3/4/2014** DF: **1**

| Analyte                     | Result | PQL  | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|-----------------------------|--------|------|---------|---------------|------|---------------|---------------|------|-----------|------|
| 1,1'-Biphenyl               | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 1-Methylnaphthalene         | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2,4,5-Trichlorophenol       | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2,4,6-Trichlorophenol       | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2,4-Dichlorophenol          | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2,4-Dimethylphenol          | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2,4-Dinitrophenol           | ND     | 1.0  |         |               |      |               |               |      |           |      |
| 2,4-Dinitrotoluene          | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2,6-Dinitrotoluene          | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2-Chloronaphthalene         | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2-Chlorophenol              | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2-Methylnaphthalene         | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2-Methylphenol              | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2-Nitroaniline              | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2-Nitrophenol               | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 3&4-Methylphenol            | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 3,3'-Dichlorobenzidine      | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 3-Nitroaniline              | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 4,6-Dinitro-2-methylphenol  | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 4-Bromophenyl phenyl ether  | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 4-Chloro-3-methylphenol     | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 4-Chloroaniline             | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 4-Chlorophenyl phenyl ether | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 4-Nitroaniline              | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 4-Nitrophenol               | ND     | 1.0  |         |               |      |               |               |      |           |      |
| Acenaphthene                | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Acenaphthylene              | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Acetophenone                | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Anthracene                  | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Atrazine                    | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Benz(a)anthracene           | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Benzaldehyde                | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Benzo(a)pyrene              | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Benzo(b)fluoranthene        | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Benzo(g,h,i)perylene        | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Benzo(k)fluoranthene        | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Bis(2-chloroethoxy)methane  | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Bis(2-chloroethyl)ether     | ND     | 0.20 |         |               |      |               |               |      |           |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

| Batch ID: <b>77152</b>            |       | Instrument ID <b>SV-6</b> |   | Method: <b>SW8270</b> |      |        |   |  |
|-----------------------------------|-------|---------------------------|---|-----------------------|------|--------|---|--|
| Bis(2-chloroisopropyl)ether       | ND    | 0.20                      |   |                       |      |        |   |  |
| Bis(2-ethylhexyl)phthalate        | ND    | 0.20                      |   |                       |      |        |   |  |
| Butyl benzyl phthalate            | ND    | 0.20                      |   |                       |      |        |   |  |
| Caprolactam                       | ND    | 0.20                      |   |                       |      |        |   |  |
| Carbazole                         | ND    | 0.20                      |   |                       |      |        |   |  |
| Chrysene                          | ND    | 0.20                      |   |                       |      |        |   |  |
| Dibenz(a,h)anthracene             | ND    | 0.20                      |   |                       |      |        |   |  |
| Dibenzofuran                      | ND    | 0.20                      |   |                       |      |        |   |  |
| Diethyl phthalate                 | ND    | 0.20                      |   |                       |      |        |   |  |
| Dimethyl phthalate                | ND    | 0.20                      |   |                       |      |        |   |  |
| Di-n-butyl phthalate              | ND    | 0.20                      |   |                       |      |        |   |  |
| Di-n-octyl phthalate              | ND    | 0.20                      |   |                       |      |        |   |  |
| Fluoranthene                      | ND    | 0.20                      |   |                       |      |        |   |  |
| Fluorene                          | ND    | 0.20                      |   |                       |      |        |   |  |
| Hexachlorobenzene                 | ND    | 0.20                      |   |                       |      |        |   |  |
| Hexachlorobutadiene               | ND    | 0.20                      |   |                       |      |        |   |  |
| Hexachlorocyclopentadiene         | ND    | 0.20                      |   |                       |      |        |   |  |
| Hexachloroethane                  | ND    | 0.20                      |   |                       |      |        |   |  |
| Indeno(1,2,3-cd)pyrene            | ND    | 0.20                      |   |                       |      |        |   |  |
| Isophorone                        | ND    | 0.20                      |   |                       |      |        |   |  |
| Naphthalene                       | ND    | 0.20                      |   |                       |      |        |   |  |
| Nitrobenzene                      | ND    | 0.20                      |   |                       |      |        |   |  |
| N-Nitrosodi-n-propylamine         | ND    | 0.20                      |   |                       |      |        |   |  |
| N-Nitrosodiphenylamine            | ND    | 0.20                      |   |                       |      |        |   |  |
| Pentachlorophenol                 | ND    | 0.20                      |   |                       |      |        |   |  |
| Phenanthrene                      | ND    | 0.20                      |   |                       |      |        |   |  |
| Phenol                            | ND    | 0.20                      |   |                       |      |        |   |  |
| Pyrene                            | ND    | 0.20                      |   |                       |      |        |   |  |
| <i>Surr: 2,4,6-Tribromophenol</i> | 3.848 | 0.20                      | 5 | 0                     | 77   | 34-129 | 0 |  |
| <i>Surr: 2-Fluorobiphenyl</i>     | 3.78  | 0.20                      | 5 | 0                     | 75.6 | 40-125 | 0 |  |
| <i>Surr: 2-Fluorophenol</i>       | 3.678 | 0.20                      | 5 | 0                     | 73.6 | 20-120 | 0 |  |
| <i>Surr: 4-Terphenyl-d14</i>      | 3.928 | 0.20                      | 5 | 0                     | 78.6 | 40-135 | 0 |  |
| <i>Surr: Nitrobenzene-d5</i>      | 3.6   | 0.20                      | 5 | 0                     | 72   | 41-120 | 0 |  |
| <i>Surr: Phenol-d6</i>            | 3.486 | 0.20                      | 5 | 0                     | 69.7 | 20-120 | 0 |  |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **77152** Instrument ID **SV-6** Method: **SW8270**

**LCS** Sample ID: **SLCSW1-140304-77152** Units: **µg/L** Analysis Date: **3/5/2014 01:49 PM**

Client ID: Run ID: **SV-6\_140305A** SeqNo: **3559270** Prep Date: **3/4/2014** DF: **1**

| Analyte                     | Result | PQL  | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|-----------------------------|--------|------|---------|---------------|------|---------------|---------------|------|-----------|------|
| 1,1'-Biphenyl               | 3.321  | 0.20 | 5       | 0             | 66.4 | 45-125        |               |      |           |      |
| 1-Methylnaphthalene         | 3.311  | 0.20 | 5       | 0             | 66.2 | 45-120        |               |      |           |      |
| 2,4,5-Trichlorophenol       | 3.197  | 0.20 | 5       | 0             | 63.9 | 46-120        |               |      |           |      |
| 2,4,6-Trichlorophenol       | 3.357  | 0.20 | 5       | 0             | 67.1 | 42-120        |               |      |           |      |
| 2,4-Dichlorophenol          | 3.339  | 0.20 | 5       | 0             | 66.8 | 49-120        |               |      |           |      |
| 2,4-Dimethylphenol          | 3.32   | 0.20 | 5       | 0             | 66.4 | 35-120        |               |      |           |      |
| 2,4-Dinitrophenol           | 2.424  | 1.0  | 5       | 0             | 48.5 | 15-120        |               |      |           |      |
| 2,4-Dinitrotoluene          | 3.743  | 0.20 | 5       | 0             | 74.9 | 50-122        |               |      |           |      |
| 2,6-Dinitrotoluene          | 3.697  | 0.20 | 5       | 0             | 73.9 | 50-120        |               |      |           |      |
| 2-Chloronaphthalene         | 3.215  | 0.20 | 5       | 0             | 64.3 | 50-120        |               |      |           |      |
| 2-Chlorophenol              | 3.379  | 0.20 | 5       | 0             | 67.6 | 40-120        |               |      |           |      |
| 2-Methylnaphthalene         | 3.521  | 0.20 | 5       | 0             | 70.4 | 50-120        |               |      |           |      |
| 2-Methylphenol              | 3.228  | 0.20 | 5       | 0             | 64.6 | 45-120        |               |      |           |      |
| 2-Nitroaniline              | 4.18   | 0.20 | 5       | 0             | 83.6 | 28-139        |               |      |           |      |
| 2-Nitrophenol               | 3.416  | 0.20 | 5       | 0             | 68.3 | 40-120        |               |      |           |      |
| 3&4-Methylphenol            | 3.256  | 0.20 | 5       | 0             | 65.1 | 35-120        |               |      |           |      |
| 3,3'-Dichlorobenzidine      | 3.087  | 0.20 | 5       | 0             | 61.7 | 15-120        |               |      |           |      |
| 3-Nitroaniline              | 3.775  | 0.20 | 5       | 0             | 75.5 | 30-120        |               |      |           |      |
| 4,6-Dinitro-2-methylphenol  | 3.435  | 0.20 | 5       | 0             | 68.7 | 25-121        |               |      |           |      |
| 4-Bromophenyl phenyl ether  | 3.317  | 0.20 | 5       | 0             | 66.3 | 45-120        |               |      |           |      |
| 4-Chloro-3-methylphenol     | 3.185  | 0.20 | 5       | 0             | 63.7 | 47-120        |               |      |           |      |
| 4-Chloroaniline             | 3.384  | 0.20 | 5       | 0             | 67.7 | 20-120        |               |      |           |      |
| 4-Chlorophenyl phenyl ether | 3.394  | 0.20 | 5       | 0             | 67.9 | 50-120        |               |      |           |      |
| 4-Nitroaniline              | 3.825  | 0.20 | 5       | 0             | 76.5 | 30-133        |               |      |           |      |
| 4-Nitrophenol               | 3.73   | 1.0  | 5       | 0             | 74.6 | 30-130        |               |      |           |      |
| Acenaphthene                | 3.297  | 0.20 | 5       | 0             | 65.9 | 45-120        |               |      |           |      |
| Acenaphthylene              | 3.477  | 0.20 | 5       | 0             | 69.5 | 47-120        |               |      |           |      |
| Acetophenone                | 3.147  | 0.20 | 5       | 0             | 62.9 | 40-120        |               |      |           |      |
| Anthracene                  | 3.429  | 0.20 | 5       | 0             | 68.6 | 45-120        |               |      |           |      |
| Atrazine                    | 3.387  | 0.20 | 5       | 0             | 67.7 | 40-130        |               |      |           |      |
| Benz(a)anthracene           | 3.567  | 0.20 | 5       | 0             | 71.3 | 40-120        |               |      |           |      |
| Benzaldehyde                | 0.8728 | 0.20 | 5       | 0             | 17.5 | 15-120        |               |      |           |      |
| Benzo(a)pyrene              | 3.439  | 0.20 | 5       | 0             | 68.8 | 45-120        |               |      |           |      |
| Benzo(b)fluoranthene        | 3.664  | 0.20 | 5       | 0             | 73.3 | 50-120        |               |      |           |      |
| Benzo(g,h,i)perylene        | 3.437  | 0.20 | 5       | 0             | 68.7 | 42-127        |               |      |           |      |
| Benzo(k)fluoranthene        | 3.639  | 0.20 | 5       | 0             | 72.8 | 45-127        |               |      |           |      |
| Bis(2-chloroethoxy)methane  | 3.359  | 0.20 | 5       | 0             | 67.2 | 45-120        |               |      |           |      |
| Bis(2-chloroethyl)ether     | 3.393  | 0.20 | 5       | 0             | 67.9 | 37-121        |               |      |           |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

| Batch ID: <b>77152</b>      |       | Instrument ID <b>SV-6</b> |   | Method: <b>SW8270</b> |      |        |   |
|-----------------------------|-------|---------------------------|---|-----------------------|------|--------|---|
| Bis(2-chloroisopropyl)ether | 3.444 | 0.20                      | 5 | 0                     | 68.9 | 40-120 |   |
| Bis(2-ethylhexyl)phthalate  | 4.045 | 0.20                      | 5 | 0                     | 80.9 | 40-139 |   |
| Butyl benzyl phthalate      | 3.989 | 0.20                      | 5 | 0                     | 79.8 | 47-123 |   |
| Caprolactam                 | 3.636 | 0.20                      | 5 | 0                     | 72.7 | 35-134 |   |
| Carbazole                   | 3.613 | 0.20                      | 5 | 0                     | 72.3 | 42-128 |   |
| Chrysene                    | 3.536 | 0.20                      | 5 | 0                     | 70.7 | 43-120 |   |
| Dibenz(a,h)anthracene       | 3.451 | 0.20                      | 5 | 0                     | 69   | 45-125 |   |
| Dibenzofuran                | 3.433 | 0.20                      | 5 | 0                     | 68.7 | 50-120 |   |
| Diethyl phthalate           | 3.636 | 0.20                      | 5 | 0                     | 72.7 | 41-120 |   |
| Dimethyl phthalate          | 3.547 | 0.20                      | 5 | 0                     | 70.9 | 40-122 |   |
| Di-n-butyl phthalate        | 3.678 | 0.20                      | 5 | 0                     | 73.6 | 45-123 |   |
| Di-n-octyl phthalate        | 3.96  | 0.20                      | 5 | 0                     | 79.2 | 45-129 |   |
| Fluoranthene                | 3.473 | 0.20                      | 5 | 0                     | 69.5 | 45-125 |   |
| Fluorene                    | 3.489 | 0.20                      | 5 | 0                     | 69.8 | 49-120 |   |
| Hexachlorobenzene           | 3.41  | 0.20                      | 5 | 0                     | 68.2 | 48-120 |   |
| Hexachlorobutadiene         | 3.24  | 0.20                      | 5 | 0                     | 64.8 | 40-120 |   |
| Hexachlorocyclopentadiene   | 3.404 | 0.20                      | 5 | 0                     | 68.1 | 34-136 |   |
| Hexachloroethane            | 3.47  | 0.20                      | 5 | 0                     | 69.4 | 40-120 |   |
| Indeno(1,2,3-cd)pyrene      | 3.394 | 0.20                      | 5 | 0                     | 67.9 | 41-128 |   |
| Isophorone                  | 3.182 | 0.20                      | 5 | 0                     | 63.6 | 40-121 |   |
| Naphthalene                 | 3.311 | 0.20                      | 5 | 0                     | 66.2 | 45-120 |   |
| Nitrobenzene                | 3.321 | 0.20                      | 5 | 0                     | 66.4 | 44-120 |   |
| N-Nitrosodi-n-propylamine   | 3.343 | 0.20                      | 5 | 0                     | 66.9 | 40-120 |   |
| N-Nitrosodiphenylamine      | 3.444 | 0.20                      | 5 | 0                     | 68.9 | 40-125 |   |
| Pentachlorophenol           | 2.625 | 0.20                      | 5 | 0                     | 52.5 | 19-121 |   |
| Phenanthrene                | 3.416 | 0.20                      | 5 | 0                     | 68.3 | 45-121 |   |
| Phenol                      | 3.112 | 0.20                      | 5 | 0                     | 62.2 | 20-124 |   |
| Pyrene                      | 3.693 | 0.20                      | 5 | 0                     | 73.9 | 40-130 |   |
| Surr: 2,4,6-Tribromophenol  | 3.668 | 0.20                      | 5 | 0                     | 73.4 | 34-129 | 0 |
| Surr: 2-Fluorobiphenyl      | 3.43  | 0.20                      | 5 | 0                     | 68.6 | 40-125 | 0 |
| Surr: 2-Fluorophenol        | 3.342 | 0.20                      | 5 | 0                     | 66.8 | 20-120 | 0 |
| Surr: 4-Terphenyl-d14       | 3.58  | 0.20                      | 5 | 0                     | 71.6 | 40-135 | 0 |
| Surr: Nitrobenzene-d5       | 3.377 | 0.20                      | 5 | 0                     | 67.5 | 41-120 | 0 |
| Surr: Phenol-d6             | 3.156 | 0.20                      | 5 | 0                     | 63.1 | 20-120 | 0 |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **77152** Instrument ID **SV-6** Method: **SW8270**

| MS                          |        | Sample ID: <b>14030008-11FMS</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>3/5/2014 02:27 PM</b> |           |              |
|-----------------------------|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|-----------------------------------------|-----------|--------------|
| Client ID: <b>MW-29</b>     |        | Run ID: <b>SV-6_140305A</b>      |         |               |      | SeqNo: <b>3559272</b> |               | Prep Date: <b>3/4/2014</b>              |           | DF: <b>1</b> |
| Analyte                     | Result | PQL                              | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                    | RPD Limit | Qual         |
| 1,1'-Biphenyl               | 3.505  | 0.20                             | 5       | 0             | 70.1 | 45-125                |               |                                         |           |              |
| 1-Methylnaphthalene         | 3.461  | 0.20                             | 5       | 0             | 69.2 | 45-120                |               |                                         |           |              |
| 2,4,5-Trichlorophenol       | 3.44   | 0.20                             | 5       | 0             | 68.8 | 46-120                |               |                                         |           |              |
| 2,4,6-Trichlorophenol       | 3.624  | 0.20                             | 5       | 0             | 72.5 | 42-120                |               |                                         |           |              |
| 2,4-Dichlorophenol          | 3.473  | 0.20                             | 5       | 0             | 69.5 | 49-120                |               |                                         |           |              |
| 2,4-Dimethylphenol          | 3.35   | 0.20                             | 5       | 0             | 67   | 35-120                |               |                                         |           |              |
| 2,4-Dinitrophenol           | 2.771  | 1.0                              | 5       | 0             | 55.4 | 15-120                |               |                                         |           |              |
| 2,4-Dinitrotoluene          | 3.948  | 0.20                             | 5       | 0             | 79   | 50-122                |               |                                         |           |              |
| 2,6-Dinitrotoluene          | 5.94   | 0.20                             | 5       | 0             | 119  | 50-120                |               |                                         |           |              |
| 2-Chloronaphthalene         | 3.338  | 0.20                             | 5       | 0             | 66.8 | 50-120                |               |                                         |           |              |
| 2-Chlorophenol              | 3.407  | 0.20                             | 5       | 0             | 68.1 | 40-120                |               |                                         |           |              |
| 2-Methylnaphthalene         | 3.631  | 0.20                             | 5       | 0             | 72.6 | 50-120                |               |                                         |           |              |
| 2-Methylphenol              | 3.324  | 0.20                             | 5       | 0             | 66.5 | 45-120                |               |                                         |           |              |
| 2-Nitroaniline              | 4.453  | 0.20                             | 5       | 0             | 89.1 | 28-139                |               |                                         |           |              |
| 2-Nitrophenol               | 3.787  | 0.20                             | 5       | 0             | 75.7 | 40-120                |               |                                         |           |              |
| 3&4-Methylphenol            | 3.349  | 0.20                             | 5       | 0             | 67   | 35-120                |               |                                         |           |              |
| 3,3'-Dichlorobenzidine      | 1.54   | 0.20                             | 5       | 0             | 30.8 | 15-120                |               |                                         |           |              |
| 3-Nitroaniline              | 3.758  | 0.20                             | 5       | 0             | 75.2 | 30-120                |               |                                         |           |              |
| 4,6-Dinitro-2-methylphenol  | 3.603  | 0.20                             | 5       | 0             | 72.1 | 25-121                |               |                                         |           |              |
| 4-Bromophenyl phenyl ether  | 3.573  | 0.20                             | 5       | 0             | 71.5 | 45-120                |               |                                         |           |              |
| 4-Chloro-3-methylphenol     | 3.62   | 0.20                             | 5       | 0             | 72.4 | 47-120                |               |                                         |           |              |
| 4-Chloroaniline             | 3.335  | 0.20                             | 5       | 0             | 66.7 | 20-120                |               |                                         |           |              |
| 4-Chlorophenyl phenyl ether | 3.596  | 0.20                             | 5       | 0             | 71.9 | 50-120                |               |                                         |           |              |
| 4-Nitroaniline              | 4.018  | 0.20                             | 5       | 0             | 80.4 | 30-133                |               |                                         |           |              |
| 4-Nitrophenol               | 4.512  | 1.0                              | 5       | 0             | 90.2 | 30-130                |               |                                         |           |              |
| Acenaphthene                | 3.77   | 0.20                             | 5       | 0             | 75.4 | 45-120                |               |                                         |           |              |
| Acenaphthylene              | 3.643  | 0.20                             | 5       | 0             | 72.9 | 47-120                |               |                                         |           |              |
| Acetophenone                | 3.249  | 0.20                             | 5       | 0             | 65   | 40-120                |               |                                         |           |              |
| Anthracene                  | 3.714  | 0.20                             | 5       | 0             | 74.3 | 45-120                |               |                                         |           |              |
| Atrazine                    | 3.82   | 0.20                             | 5       | 0             | 76.4 | 40-130                |               |                                         |           |              |
| Benz(a)anthracene           | 3.915  | 0.20                             | 5       | 0             | 78.3 | 40-120                |               |                                         |           |              |
| Benzaldehyde                | 0.9957 | 0.20                             | 5       | 0             | 19.9 | 15-120                |               |                                         |           |              |
| Benzo(a)pyrene              | 3.729  | 0.20                             | 5       | 0             | 74.6 | 45-120                |               |                                         |           |              |
| Benzo(b)fluoranthene        | 3.861  | 0.20                             | 5       | 0             | 77.2 | 50-120                |               |                                         |           |              |
| Benzo(g,h,i)perylene        | 3.69   | 0.20                             | 5       | 0             | 73.8 | 42-127                |               |                                         |           |              |
| Benzo(k)fluoranthene        | 3.486  | 0.20                             | 5       | 0             | 69.7 | 45-127                |               |                                         |           |              |
| Bis(2-chloroethoxy)methane  | 3.534  | 0.20                             | 5       | 0             | 70.7 | 45-120                |               |                                         |           |              |
| Bis(2-chloroethyl)ether     | 3.662  | 0.20                             | 5       | 0             | 73.2 | 37-121                |               |                                         |           |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

| Batch ID: <b>77152</b>            |       | Instrument ID <b>SV-6</b> |   | Method: <b>SW8270</b> |      |        |   |
|-----------------------------------|-------|---------------------------|---|-----------------------|------|--------|---|
| Bis(2-chloroisopropyl)ether       | 3.508 | 0.20                      | 5 | 0                     | 70.2 | 40-120 |   |
| Bis(2-ethylhexyl)phthalate        | 4.495 | 0.20                      | 5 | 0.06944               | 88.5 | 40-139 |   |
| Butyl benzyl phthalate            | 4.346 | 0.20                      | 5 | 0                     | 86.9 | 47-123 |   |
| Caprolactam                       | 4.063 | 0.20                      | 5 | 0                     | 81.3 | 35-134 |   |
| Carbazole                         | 4.095 | 0.20                      | 5 | 0                     | 81.9 | 42-128 |   |
| Chrysene                          | 3.877 | 0.20                      | 5 | 0                     | 77.5 | 43-120 |   |
| Dibenz(a,h)anthracene             | 3.65  | 0.20                      | 5 | 0                     | 73   | 45-125 |   |
| Dibenzofuran                      | 3.685 | 0.20                      | 5 | 0                     | 73.7 | 50-120 |   |
| Diethyl phthalate                 | 4.045 | 0.20                      | 5 | 0.1031                | 78.8 | 41-120 |   |
| Dimethyl phthalate                | 3.789 | 0.20                      | 5 | 0                     | 75.8 | 40-122 |   |
| Di-n-butyl phthalate              | 4.131 | 0.20                      | 5 | 0                     | 82.6 | 45-123 |   |
| Di-n-octyl phthalate              | 4.343 | 0.20                      | 5 | 0                     | 86.9 | 45-129 |   |
| Fluoranthene                      | 3.783 | 0.20                      | 5 | 0                     | 75.7 | 45-125 |   |
| Fluorene                          | 3.761 | 0.20                      | 5 | 0                     | 75.2 | 49-120 |   |
| Hexachlorobenzene                 | 3.691 | 0.20                      | 5 | 0                     | 73.8 | 48-120 |   |
| Hexachlorobutadiene               | 3.347 | 0.20                      | 5 | 0                     | 66.9 | 40-120 |   |
| Hexachlorocyclopentadiene         | 3.453 | 0.20                      | 5 | 0                     | 69.1 | 34-136 |   |
| Hexachloroethane                  | 3.582 | 0.20                      | 5 | 0                     | 71.6 | 40-120 |   |
| Indeno(1,2,3-cd)pyrene            | 3.775 | 0.20                      | 5 | 0                     | 75.5 | 41-128 |   |
| Isophorone                        | 3.386 | 0.20                      | 5 | 0                     | 67.7 | 40-121 |   |
| Naphthalene                       | 3.436 | 0.20                      | 5 | 0                     | 68.7 | 45-120 |   |
| Nitrobenzene                      | 3.399 | 0.20                      | 5 | 0                     | 68   | 44-120 |   |
| N-Nitrosodi-n-propylamine         | 3.435 | 0.20                      | 5 | 0                     | 68.7 | 40-120 |   |
| N-Nitrosodiphenylamine            | 3.718 | 0.20                      | 5 | 0                     | 74.4 | 40-125 |   |
| Pentachlorophenol                 | 2.879 | 0.20                      | 5 | 0                     | 57.6 | 19-121 |   |
| Phenanthrene                      | 3.705 | 0.20                      | 5 | 0                     | 74.1 | 45-121 |   |
| Phenol                            | 3.224 | 0.20                      | 5 | 0                     | 64.5 | 20-124 |   |
| Pyrene                            | 3.967 | 0.20                      | 5 | 0                     | 79.3 | 40-130 |   |
| <i>Surr: 2,4,6-Tribromophenol</i> | 3.912 | 0.20                      | 5 | 0                     | 78.2 | 34-129 | 0 |
| <i>Surr: 2-Fluorobiphenyl</i>     | 3.699 | 0.20                      | 5 | 0                     | 74   | 40-125 | 0 |
| <i>Surr: 2-Fluorophenol</i>       | 3.474 | 0.20                      | 5 | 0                     | 69.5 | 20-120 | 0 |
| <i>Surr: 4-Terphenyl-d14</i>      | 4.008 | 0.20                      | 5 | 0                     | 80.2 | 40-135 | 0 |
| <i>Surr: Nitrobenzene-d5</i>      | 3.589 | 0.20                      | 5 | 0                     | 71.8 | 41-120 | 0 |
| <i>Surr: Phenol-d6</i>            | 3.319 | 0.20                      | 5 | 0                     | 66.4 | 20-120 | 0 |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **77152** Instrument ID **SV-6** Method: **SW8270**

| MSD                         |        | Sample ID: <b>14030008-11FMSD</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>3/5/2014 02:47 PM</b> |           |              |
|-----------------------------|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|-----------------------------------------|-----------|--------------|
| Client ID: <b>MW-29</b>     |        | Run ID: <b>SV-6_140305A</b>       |         |               |      | SeqNo: <b>3559273</b> |               | Prep Date: <b>3/4/2014</b>              |           | DF: <b>1</b> |
| Analyte                     | Result | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                    | RPD Limit | Qual         |
| 1,1'-Biphenyl               | 3.717  | 0.20                              | 5       | 0             | 74.3 | 45-125                | 3.505         | 5.85                                    | 20        |              |
| 1-Methylnaphthalene         | 3.688  | 0.20                              | 5       | 0             | 73.8 | 45-120                | 3.461         | 6.36                                    | 20        |              |
| 2,4,5-Trichlorophenol       | 3.797  | 0.20                              | 5       | 0             | 75.9 | 46-120                | 3.44          | 9.86                                    | 20        |              |
| 2,4,6-Trichlorophenol       | 3.879  | 0.20                              | 5       | 0             | 77.6 | 42-120                | 3.624         | 6.81                                    | 20        |              |
| 2,4-Dichlorophenol          | 3.731  | 0.20                              | 5       | 0             | 74.6 | 49-120                | 3.473         | 7.17                                    | 20        |              |
| 2,4-Dimethylphenol          | 3.73   | 0.20                              | 5       | 0             | 74.6 | 35-120                | 3.35          | 10.7                                    | 20        |              |
| 2,4-Dinitrophenol           | 3.106  | 1.0                               | 5       | 0             | 62.1 | 15-120                | 2.771         | 11.4                                    | 50        |              |
| 2,4-Dinitrotoluene          | 4.378  | 0.20                              | 5       | 0             | 87.6 | 50-122                | 3.948         | 10.3                                    | 20        |              |
| 2,6-Dinitrotoluene          | 5.916  | 0.20                              | 5       | 0             | 118  | 50-120                | 5.94          | 0.405                                   | 20        |              |
| 2-Chloronaphthalene         | 3.64   | 0.20                              | 5       | 0             | 72.8 | 50-120                | 3.338         | 8.66                                    | 20        |              |
| 2-Chlorophenol              | 3.672  | 0.20                              | 5       | 0             | 73.4 | 40-120                | 3.407         | 7.5                                     | 20        |              |
| 2-Methylnaphthalene         | 3.936  | 0.20                              | 5       | 0             | 78.7 | 50-120                | 3.631         | 8.04                                    | 20        |              |
| 2-Methylphenol              | 3.541  | 0.20                              | 5       | 0             | 70.8 | 45-120                | 3.324         | 6.31                                    | 20        |              |
| 2-Nitroaniline              | 4.85   | 0.20                              | 5       | 0             | 97   | 28-139                | 4.453         | 8.52                                    | 20        |              |
| 2-Nitrophenol               | 3.869  | 0.20                              | 5       | 0             | 77.4 | 40-120                | 3.787         | 2.13                                    | 20        |              |
| 3&4-Methylphenol            | 3.624  | 0.20                              | 5       | 0             | 72.5 | 35-120                | 3.349         | 7.9                                     | 20        |              |
| 3,3'-Dichlorobenzidine      | 1.994  | 0.20                              | 5       | 0             | 39.9 | 15-120                | 1.54          | 25.7                                    | 20        | R            |
| 3-Nitroaniline              | 4.246  | 0.20                              | 5       | 0             | 84.9 | 30-120                | 3.758         | 12.2                                    | 20        |              |
| 4,6-Dinitro-2-methylphenol  | 4.036  | 0.20                              | 5       | 0             | 80.7 | 25-121                | 3.603         | 11.3                                    | 20        |              |
| 4-Bromophenyl phenyl ether  | 3.687  | 0.20                              | 5       | 0             | 73.7 | 45-120                | 3.573         | 3.16                                    | 20        |              |
| 4-Chloro-3-methylphenol     | 3.911  | 0.20                              | 5       | 0             | 78.2 | 47-120                | 3.62          | 7.73                                    | 20        |              |
| 4-Chloroaniline             | 3.871  | 0.20                              | 5       | 0             | 77.4 | 20-120                | 3.335         | 14.9                                    | 20        |              |
| 4-Chlorophenyl phenyl ether | 3.851  | 0.20                              | 5       | 0             | 77   | 50-120                | 3.596         | 6.84                                    | 20        |              |
| 4-Nitroaniline              | 4.382  | 0.20                              | 5       | 0             | 87.6 | 30-133                | 4.018         | 8.67                                    | 20        |              |
| 4-Nitrophenol               | 4.751  | 1.0                               | 5       | 0             | 95   | 30-130                | 4.512         | 5.17                                    | 20        |              |
| Acenaphthene                | 3.719  | 0.20                              | 5       | 0             | 74.4 | 45-120                | 3.77          | 1.37                                    | 20        |              |
| Acenaphthylene              | 3.904  | 0.20                              | 5       | 0             | 78.1 | 47-120                | 3.643         | 6.92                                    | 20        |              |
| Acetophenone                | 3.447  | 0.20                              | 5       | 0             | 68.9 | 40-120                | 3.249         | 5.94                                    | 20        |              |
| Anthracene                  | 3.94   | 0.20                              | 5       | 0             | 78.8 | 45-120                | 3.714         | 5.91                                    | 20        |              |
| Atrazine                    | 3.757  | 0.20                              | 5       | 0             | 75.1 | 40-130                | 3.82          | 1.67                                    | 20        |              |
| Benz(a)anthracene           | 4.103  | 0.20                              | 5       | 0             | 82.1 | 40-120                | 3.915         | 4.68                                    | 20        |              |
| Benzaldehyde                | 0.9082 | 0.20                              | 5       | 0             | 18.2 | 15-120                | 0.9957        | 9.2                                     | 30        |              |
| Benzo(a)pyrene              | 3.974  | 0.20                              | 5       | 0             | 79.5 | 45-120                | 3.729         | 6.38                                    | 20        |              |
| Benzo(b)fluoranthene        | 4.495  | 0.20                              | 5       | 0             | 89.9 | 50-120                | 3.861         | 15.2                                    | 20        |              |
| Benzo(g,h,i)perylene        | 3.975  | 0.20                              | 5       | 0             | 79.5 | 42-127                | 3.69          | 7.43                                    | 20        |              |
| Benzo(k)fluoranthene        | 3.961  | 0.20                              | 5       | 0             | 79.2 | 45-127                | 3.486         | 12.8                                    | 20        |              |
| Bis(2-chloroethoxy)methane  | 3.671  | 0.20                              | 5       | 0             | 73.4 | 45-120                | 3.534         | 3.79                                    | 20        |              |
| Bis(2-chloroethyl)ether     | 3.817  | 0.20                              | 5       | 0             | 76.3 | 37-121                | 3.662         | 4.14                                    | 20        |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

| Batch ID: <b>77152</b>      |       | Instrument ID <b>SV-6</b> |   | Method: <b>SW8270</b> |      |        |       |       |    |
|-----------------------------|-------|---------------------------|---|-----------------------|------|--------|-------|-------|----|
| Bis(2-chloroisopropyl)ether | 3.776 | 0.20                      | 5 | 0                     | 75.5 | 40-120 | 3.508 | 7.38  | 20 |
| Bis(2-ethylhexyl)phthalate  | 4.772 | 0.20                      | 5 | 0.06944               | 94.1 | 40-139 | 4.495 | 5.98  | 20 |
| Butyl benzyl phthalate      | 4.71  | 0.20                      | 5 | 0                     | 94.2 | 47-123 | 4.346 | 8.04  | 20 |
| Caprolactam                 | 4.319 | 0.20                      | 5 | 0                     | 86.4 | 35-134 | 4.063 | 6.12  | 20 |
| Carbazole                   | 4.388 | 0.20                      | 5 | 0                     | 87.8 | 42-128 | 4.095 | 6.91  | 20 |
| Chrysene                    | 4.173 | 0.20                      | 5 | 0                     | 83.5 | 43-120 | 3.877 | 7.35  | 20 |
| Dibenz(a,h)anthracene       | 4     | 0.20                      | 5 | 0                     | 80   | 45-125 | 3.65  | 9.14  | 20 |
| Dibenzofuran                | 3.857 | 0.20                      | 5 | 0                     | 77.1 | 50-120 | 3.685 | 4.56  | 20 |
| Diethyl phthalate           | 4.281 | 0.20                      | 5 | 0.1031                | 83.6 | 41-120 | 4.045 | 5.67  | 20 |
| Dimethyl phthalate          | 4.014 | 0.20                      | 5 | 0                     | 80.3 | 40-122 | 3.789 | 5.78  | 20 |
| Di-n-butyl phthalate        | 4.314 | 0.20                      | 5 | 0                     | 86.3 | 45-123 | 4.131 | 4.33  | 20 |
| Di-n-octyl phthalate        | 4.704 | 0.20                      | 5 | 0                     | 94.1 | 45-129 | 4.343 | 7.99  | 20 |
| Fluoranthene                | 4.01  | 0.20                      | 5 | 0                     | 80.2 | 45-125 | 3.783 | 5.82  | 20 |
| Fluorene                    | 3.944 | 0.20                      | 5 | 0                     | 78.9 | 49-120 | 3.761 | 4.74  | 20 |
| Hexachlorobenzene           | 3.941 | 0.20                      | 5 | 0                     | 78.8 | 48-120 | 3.691 | 6.55  | 20 |
| Hexachlorobutadiene         | 3.575 | 0.20                      | 5 | 0                     | 71.5 | 40-120 | 3.347 | 6.58  | 20 |
| Hexachlorocyclopentadiene   | 3.743 | 0.20                      | 5 | 0                     | 74.9 | 34-136 | 3.453 | 8.05  | 20 |
| Hexachloroethane            | 3.73  | 0.20                      | 5 | 0                     | 74.6 | 40-120 | 3.582 | 4.05  | 20 |
| Indeno(1,2,3-cd)pyrene      | 4     | 0.20                      | 5 | 0                     | 80   | 41-128 | 3.775 | 5.78  | 20 |
| Isophorone                  | 3.593 | 0.20                      | 5 | 0                     | 71.9 | 40-121 | 3.386 | 5.93  | 20 |
| Naphthalene                 | 3.693 | 0.20                      | 5 | 0                     | 73.9 | 45-120 | 3.436 | 7.19  | 20 |
| Nitrobenzene                | 3.572 | 0.20                      | 5 | 0                     | 71.4 | 44-120 | 3.399 | 4.96  | 20 |
| N-Nitrosodi-n-propylamine   | 3.743 | 0.20                      | 5 | 0                     | 74.9 | 40-120 | 3.435 | 8.6   | 20 |
| N-Nitrosodiphenylamine      | 3.952 | 0.20                      | 5 | 0                     | 79   | 40-125 | 3.718 | 6.09  | 20 |
| Pentachlorophenol           | 3.225 | 0.20                      | 5 | 0                     | 64.5 | 19-121 | 2.879 | 11.3  | 20 |
| Phenanthrene                | 3.945 | 0.20                      | 5 | 0                     | 78.9 | 45-121 | 3.705 | 6.28  | 20 |
| Phenol                      | 3.504 | 0.20                      | 5 | 0                     | 70.1 | 20-124 | 3.224 | 8.32  | 20 |
| Pyrene                      | 4.242 | 0.20                      | 5 | 0                     | 84.8 | 40-130 | 3.967 | 6.71  | 20 |
| Surr: 2,4,6-Tribromophenol  | 4.129 | 0.20                      | 5 | 0                     | 82.6 | 34-129 | 3.912 | 5.42  | 0  |
| Surr: 2-Fluorobiphenyl      | 3.753 | 0.20                      | 5 | 0                     | 75.1 | 40-125 | 3.699 | 1.44  | 0  |
| Surr: 2-Fluorophenol        | 3.462 | 0.20                      | 5 | 0                     | 69.2 | 20-120 | 3.474 | 0.355 | 0  |
| Surr: 4-Terphenyl-d14       | 4.098 | 0.20                      | 5 | 0                     | 82   | 40-135 | 4.008 | 2.2   | 0  |
| Surr: Nitrobenzene-d5       | 3.731 | 0.20                      | 5 | 0                     | 74.6 | 41-120 | 3.589 | 3.89  | 0  |
| Surr: Phenol-d6             | 3.378 | 0.20                      | 5 | 0                     | 67.6 | 20-120 | 3.319 | 1.78  | 0  |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14030008-01F | 14030008-02F | 14030008-03F | 14030008-04F |
| 14030008-05F | 14030008-06F | 14030008-07F | 14030008-08F |
| 14030008-09F | 14030008-10F | 14030008-11F | 14030008-12F |
| 14030008-13F | 14030008-14F | 14030008-15F | 14030008-16F |
| 14030008-17F | 14030008-18F | 14030008-19F | 14030008-20F |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162237** Instrument ID **VOA6** Method: **SW8260**

**MBLK** Sample ID: **VBLKW-140303-R162237** Units: **µg/L** Analysis Date: **3/3/2014 01:00 PM**

Client ID: Run ID: **VOA6\_140303A** SeqNo: **3550801** Prep Date: DF: **1**

| Analyte                   | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---------------------------|--------|-----|---------|---------------|------|---------------|---------------|------|-----------|------|
| 1,1,1-Trichloroethane     | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,1,2,2-Tetrachloroethane | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,1,2-Trichloroethane     | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,1-Dichloroethane        | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,1-Dichloroethene        | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,2,4-Trimethylbenzene    | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,2-Dibromoethane         | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,2-Dichloroethane        | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,2-Dichloropropane       | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,3,5-Trimethylbenzene    | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 2-Butanone                | ND     | 10  |         |               |      |               |               |      |           |      |
| 2-Hexanone                | ND     | 10  |         |               |      |               |               |      |           |      |
| 4-Isopropyltoluene        | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 4-Methyl-2-pentanone      | ND     | 10  |         |               |      |               |               |      |           |      |
| Acetone                   | ND     | 10  |         |               |      |               |               |      |           |      |
| Benzene                   | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Bromodichloromethane      | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Bromoform                 | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Bromomethane              | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Carbon disulfide          | ND     | 10  |         |               |      |               |               |      |           |      |
| Carbon tetrachloride      | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Chlorobenzene             | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Chloroethane              | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Chloroform                | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Chloromethane             | ND     | 5.0 |         |               |      |               |               |      |           |      |
| cis-1,2-Dichloroethene    | ND     | 5.0 |         |               |      |               |               |      |           |      |
| cis-1,3-Dichloropropene   | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Dibromochloromethane      | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Ethylbenzene              | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Isopropylbenzene          | ND     | 5.0 |         |               |      |               |               |      |           |      |
| m,p-Xylene                | ND     | 10  |         |               |      |               |               |      |           |      |
| Methyl tert-butyl ether   | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Methylene chloride        | ND     | 10  |         |               |      |               |               |      |           |      |
| Naphthalene               | ND     | 5.0 |         |               |      |               |               |      |           |      |
| n-Butylbenzene            | ND     | 5.0 |         |               |      |               |               |      |           |      |
| n-Propylbenzene           | ND     | 5.0 |         |               |      |               |               |      |           |      |
| o-Xylene                  | ND     | 5.0 |         |               |      |               |               |      |           |      |
| sec-Butylbenzene          | ND     | 5.0 |         |               |      |               |               |      |           |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

**QC BATCH REPORT**

|                             |       |                           |    |                       |      |        |   |  |
|-----------------------------|-------|---------------------------|----|-----------------------|------|--------|---|--|
| Batch ID: <b>R162237</b>    |       | Instrument ID <b>VOA6</b> |    | Method: <b>SW8260</b> |      |        |   |  |
| Styrene                     | ND    | 5.0                       |    |                       |      |        |   |  |
| Tetrachloroethene           | ND    | 5.0                       |    |                       |      |        |   |  |
| Toluene                     | ND    | 5.0                       |    |                       |      |        |   |  |
| trans-1,2-Dichloroethene    | ND    | 5.0                       |    |                       |      |        |   |  |
| trans-1,3-Dichloropropene   | ND    | 5.0                       |    |                       |      |        |   |  |
| Trichloroethene             | ND    | 5.0                       |    |                       |      |        |   |  |
| Vinyl chloride              | ND    | 2.0                       |    |                       |      |        |   |  |
| Xylenes, Total              | ND    | 15                        |    |                       |      |        |   |  |
| Surr: 1,2-Dichloroethane-d4 | 51.65 | 5.0                       | 50 | 0                     | 103  | 70-125 | 0 |  |
| Surr: 4-Bromofluorobenzene  | 48.48 | 5.0                       | 50 | 0                     | 97   | 72-125 | 0 |  |
| Surr: Dibromofluoromethane  | 51.17 | 5.0                       | 50 | 0                     | 102  | 71-125 | 0 |  |
| Surr: Toluene-d8            | 47.28 | 5.0                       | 50 | 0                     | 94.6 | 75-125 | 0 |  |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162237** Instrument ID **VOA6** Method: **SW8260**

| LCS                       |        | Sample ID: <b>VLCSW-140303-R162237</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>3/3/2014 11:43 AM</b> |           |              |
|---------------------------|--------|----------------------------------------|---------|---------------|------|-----------------------|---------------|-----------------------------------------|-----------|--------------|
| Client ID:                |        | Run ID: <b>VOA6_140303A</b>            |         |               |      | SeqNo: <b>3550800</b> |               | Prep Date:                              |           | DF: <b>1</b> |
| Analyte                   | Result | PQL                                    | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                    | RPD Limit | Qual         |
| 1,1,1-Trichloroethane     | 54.06  | 5.0                                    | 50      | 0             | 108  | 80-120                |               |                                         |           |              |
| 1,1,2,2-Tetrachloroethane | 45.67  | 5.0                                    | 50      | 0             | 91.3 | 72-120                |               |                                         |           |              |
| 1,1,2-Trichloroethane     | 48.13  | 5.0                                    | 50      | 0             | 96.3 | 80-120                |               |                                         |           |              |
| 1,1-Dichloroethane        | 49.87  | 5.0                                    | 50      | 0             | 99.7 | 76-120                |               |                                         |           |              |
| 1,1-Dichloroethene        | 48.34  | 5.0                                    | 50      | 0             | 96.7 | 73-124                |               |                                         |           |              |
| 1,2,4-Trimethylbenzene    | 45.86  | 5.0                                    | 50      | 0             | 91.7 | 68-123                |               |                                         |           |              |
| 1,2-Dibromoethane         | 50.53  | 5.0                                    | 50      | 0             | 101  | 80-120                |               |                                         |           |              |
| 1,2-Dichloroethane        | 49.88  | 5.0                                    | 50      | 0             | 99.8 | 78-120                |               |                                         |           |              |
| 1,2-Dichloropropane       | 52.4   | 5.0                                    | 50      | 0             | 105  | 80-120                |               |                                         |           |              |
| 1,3,5-Trimethylbenzene    | 45.39  | 5.0                                    | 50      | 0             | 90.8 | 80-120                |               |                                         |           |              |
| 2-Butanone                | 105.2  | 10                                     | 100     | 0             | 105  | 58-132                |               |                                         |           |              |
| 2-Hexanone                | 93.13  | 10                                     | 100     | 0             | 93.1 | 61-130                |               |                                         |           |              |
| 4-Isopropyltoluene        | 44.58  | 5.0                                    | 50      | 0             | 89.2 | 79-120                |               |                                         |           |              |
| 4-Methyl-2-pentanone      | 92.63  | 10                                     | 100     | 0             | 92.6 | 65-127                |               |                                         |           |              |
| Acetone                   | 94.74  | 10                                     | 100     | 0             | 94.7 | 59-137                |               |                                         |           |              |
| Benzene                   | 50.93  | 5.0                                    | 50      | 0             | 102  | 73-121                |               |                                         |           |              |
| Bromodichloromethane      | 50.92  | 5.0                                    | 50      | 0             | 102  | 75-125                |               |                                         |           |              |
| Bromoform                 | 46.78  | 5.0                                    | 50      | 0             | 93.6 | 70-130                |               |                                         |           |              |
| Bromomethane              | 51.85  | 5.0                                    | 50      | 0             | 104  | 60-145                |               |                                         |           |              |
| Carbon disulfide          | 96.55  | 10                                     | 100     | 0             | 96.5 | 68-141                |               |                                         |           |              |
| Carbon tetrachloride      | 51.19  | 5.0                                    | 50      | 0             | 102  | 75-125                |               |                                         |           |              |
| Chlorobenzene             | 48.92  | 5.0                                    | 50      | 0             | 97.8 | 80-120                |               |                                         |           |              |
| Chloroethane              | 47.05  | 5.0                                    | 50      | 0             | 94.1 | 70-130                |               |                                         |           |              |
| Chloroform                | 52.26  | 5.0                                    | 50      | 0             | 105  | 70-130                |               |                                         |           |              |
| Chloromethane             | 46.02  | 5.0                                    | 50      | 0             | 92   | 67-123                |               |                                         |           |              |
| cis-1,2-Dichloroethene    | 54.52  | 5.0                                    | 50      | 0             | 109  | 78-120                |               |                                         |           |              |
| cis-1,3-Dichloropropene   | 54.15  | 5.0                                    | 50      | 0             | 108  | 80-120                |               |                                         |           |              |
| Dibromochloromethane      | 49.56  | 5.0                                    | 50      | 0             | 99.1 | 80-120                |               |                                         |           |              |
| Ethylbenzene              | 48.74  | 5.0                                    | 50      | 0             | 97.5 | 80-120                |               |                                         |           |              |
| Isopropylbenzene          | 49.19  | 5.0                                    | 50      | 0             | 98.4 | 75-130                |               |                                         |           |              |
| m,p-Xylene                | 99.62  | 10                                     | 100     | 0             | 99.6 | 78-121                |               |                                         |           |              |
| Methyl tert-butyl ether   | 50.77  | 5.0                                    | 50      | 0             | 102  | 73-121                |               |                                         |           |              |
| Methylene chloride        | 52.6   | 10                                     | 50      | 0             | 105  | 65-133                |               |                                         |           |              |
| Naphthalene               | 44.87  | 5.0                                    | 50      | 0             | 89.7 | 65-135                |               |                                         |           |              |
| n-Butylbenzene            | 44.93  | 5.0                                    | 50      | 0             | 89.9 | 77-120                |               |                                         |           |              |
| n-Propylbenzene           | 44.39  | 5.0                                    | 50      | 0             | 88.8 | 78-120                |               |                                         |           |              |
| o-Xylene                  | 49.64  | 5.0                                    | 50      | 0             | 99.3 | 80-120                |               |                                         |           |              |
| sec-Butylbenzene          | 43.34  | 5.0                                    | 50      | 0             | 86.7 | 78-120                |               |                                         |           |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

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|                                    |                           |     |                       |   |      |        |   |
|------------------------------------|---------------------------|-----|-----------------------|---|------|--------|---|
| Batch ID: <b>R162237</b>           | Instrument ID <b>VOA6</b> |     | Method: <b>SW8260</b> |   |      |        |   |
| Styrene                            | 52.04                     | 5.0 | 50                    | 0 | 104  | 80-120 |   |
| Tetrachloroethene                  | 48.01                     | 5.0 | 50                    | 0 | 96   | 79-120 |   |
| Toluene                            | 47.73                     | 5.0 | 50                    | 0 | 95.5 | 80-120 |   |
| trans-1,2-Dichloroethene           | 53.15                     | 5.0 | 50                    | 0 | 106  | 78-120 |   |
| trans-1,3-Dichloropropene          | 56.74                     | 5.0 | 50                    | 0 | 113  | 80-120 |   |
| Trichloroethene                    | 52                        | 5.0 | 50                    | 0 | 104  | 80-120 |   |
| Vinyl chloride                     | 51.44                     | 2.0 | 50                    | 0 | 103  | 70-127 |   |
| Xylenes, Total                     | 149.3                     | 15  | 150                   | 0 | 99.5 | 80-120 |   |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 48.71                     | 5.0 | 50                    | 0 | 97.4 | 70-125 | 0 |
| <i>Surr: 4-Bromofluorobenzene</i>  | 51.28                     | 5.0 | 50                    | 0 | 103  | 72-125 | 0 |
| <i>Surr: Dibromofluoromethane</i>  | 51.5                      | 5.0 | 50                    | 0 | 103  | 71-125 | 0 |
| <i>Surr: Toluene-d8</i>            | 46.91                     | 5.0 | 50                    | 0 | 93.8 | 75-125 | 0 |

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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162237** Instrument ID **VOA6** Method: **SW8260**

| MS                        |        | Sample ID: <b>14021211-17AMS</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>3/3/2014 03:16 PM</b> |           |              |
|---------------------------|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|-----------------------------------------|-----------|--------------|
| Client ID:                |        | Run ID: <b>VOA6_140303A</b>      |         |               |      | SeqNo: <b>3550804</b> |               | Prep Date:                              |           | DF: <b>1</b> |
| Analyte                   | Result | PQL                              | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                    | RPD Limit | Qual         |
| 1,1,1-Trichloroethane     | 43.3   | 5.0                              | 50      | 0             | 86.6 | 80-120                |               |                                         |           |              |
| 1,1,2,2-Tetrachloroethane | 40.45  | 5.0                              | 50      | 0             | 80.9 | 72-120                |               |                                         |           |              |
| 1,1,2-Trichloroethane     | 44.49  | 5.0                              | 50      | 0             | 89   | 80-120                |               |                                         |           |              |
| 1,1-Dichloroethane        | 43.71  | 5.0                              | 50      | 0             | 87.4 | 76-120                |               |                                         |           |              |
| 1,1-Dichloroethene        | 38.71  | 5.0                              | 50      | 0             | 77.4 | 73-124                |               |                                         |           |              |
| 1,2,4-Trimethylbenzene    | 37.63  | 5.0                              | 50      | 0             | 75.3 | 68-123                |               |                                         |           |              |
| 1,2-Dibromoethane         | 47.04  | 5.0                              | 50      | 0             | 94.1 | 80-120                |               |                                         |           |              |
| 1,2-Dichloroethane        | 45.66  | 5.0                              | 50      | 0             | 91.3 | 78-120                |               |                                         |           |              |
| 1,2-Dichloropropane       | 47.38  | 5.0                              | 50      | 0             | 94.8 | 80-120                |               |                                         |           |              |
| 1,3,5-Trimethylbenzene    | 36.19  | 5.0                              | 50      | 0             | 72.4 | 80-120                |               |                                         |           | S            |
| 2-Butanone                | 96.7   | 10                               | 100     | 0             | 96.7 | 58-132                |               |                                         |           |              |
| 2-Hexanone                | 91.16  | 10                               | 100     | 0             | 91.2 | 61-130                |               |                                         |           |              |
| 4-Isopropyltoluene        | 34.55  | 5.0                              | 50      | 0             | 69.1 | 79-120                |               |                                         |           | S            |
| 4-Methyl-2-pentanone      | 90.38  | 10                               | 100     | 0             | 90.4 | 65-127                |               |                                         |           |              |
| Acetone                   | 90.89  | 10                               | 100     | 0             | 90.9 | 59-137                |               |                                         |           |              |
| Benzene                   | 44.45  | 5.0                              | 50      | 0             | 88.9 | 73-121                |               |                                         |           |              |
| Bromodichloromethane      | 46.73  | 5.0                              | 50      | 0             | 93.5 | 75-125                |               |                                         |           |              |
| Bromoform                 | 39.84  | 5.0                              | 50      | 0             | 79.7 | 70-130                |               |                                         |           |              |
| Bromomethane              | 30.46  | 5.0                              | 50      | 0             | 60.9 | 60-145                |               |                                         |           |              |
| Carbon disulfide          | 82.7   | 10                               | 100     | 0             | 82.7 | 68-141                |               |                                         |           |              |
| Carbon tetrachloride      | 36.27  | 5.0                              | 50      | 0             | 72.5 | 75-125                |               |                                         |           | S            |
| Chlorobenzene             | 43.25  | 5.0                              | 50      | 0             | 86.5 | 80-120                |               |                                         |           |              |
| Chloroethane              | 86.23  | 5.0                              | 50      | 0             | 172  | 70-130                |               |                                         |           | S            |
| Chloroform                | 45.2   | 5.0                              | 50      | 0             | 90.4 | 70-130                |               |                                         |           |              |
| Chloromethane             | 33.56  | 5.0                              | 50      | 0             | 67.1 | 67-123                |               |                                         |           |              |
| cis-1,2-Dichloroethene    | 48.34  | 5.0                              | 50      | 0             | 96.7 | 78-120                |               |                                         |           |              |
| cis-1,3-Dichloropropene   | 47.3   | 5.0                              | 50      | 0             | 94.6 | 80-120                |               |                                         |           |              |
| Dibromochloromethane      | 44.3   | 5.0                              | 50      | 0             | 88.6 | 80-120                |               |                                         |           |              |
| Ethylbenzene              | 41.01  | 5.0                              | 50      | 0             | 82   | 80-120                |               |                                         |           |              |
| Isopropylbenzene          | 39.66  | 5.0                              | 50      | 0             | 79.3 | 75-130                |               |                                         |           |              |
| m,p-Xylene                | 83.45  | 10                               | 100     | 0             | 83.5 | 78-121                |               |                                         |           |              |
| Methyl tert-butyl ether   | 50.08  | 5.0                              | 50      | 0             | 100  | 73-121                |               |                                         |           |              |
| Methylene chloride        | 48.23  | 10                               | 50      | 0             | 96.5 | 65-133                |               |                                         |           |              |
| Naphthalene               | 39.55  | 5.0                              | 50      | 0             | 79.1 | 65-135                |               |                                         |           |              |
| n-Butylbenzene            | 34.74  | 5.0                              | 50      | 0             | 69.5 | 77-120                |               |                                         |           | S            |
| n-Propylbenzene           | 35.42  | 5.0                              | 50      | 0             | 70.8 | 78-120                |               |                                         |           | S            |
| o-Xylene                  | 42.41  | 5.0                              | 50      | 0             | 84.8 | 80-120                |               |                                         |           |              |
| sec-Butylbenzene          | 33.09  | 5.0                              | 50      | 0             | 66.2 | 78-120                |               |                                         |           | S            |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

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|                                    |                           |                       |     |   |      |        |   |
|------------------------------------|---------------------------|-----------------------|-----|---|------|--------|---|
| Batch ID: <b>R162237</b>           | Instrument ID <b>VOA6</b> | Method: <b>SW8260</b> |     |   |      |        |   |
| Styrene                            | 44.46                     | 5.0                   | 50  | 0 | 88.9 | 80-120 |   |
| Tetrachloroethene                  | 39.81                     | 5.0                   | 50  | 0 | 79.6 | 79-120 |   |
| Toluene                            | 41.22                     | 5.0                   | 50  | 0 | 82.4 | 80-120 |   |
| trans-1,2-Dichloroethene           | 45.55                     | 5.0                   | 50  | 0 | 91.1 | 78-120 |   |
| trans-1,3-Dichloropropene          | 49.86                     | 5.0                   | 50  | 0 | 99.7 | 80-120 |   |
| Trichloroethene                    | 43.58                     | 5.0                   | 50  | 0 | 87.2 | 80-120 |   |
| Vinyl chloride                     | 38.71                     | 2.0                   | 50  | 0 | 77.4 | 70-127 |   |
| Xylenes, Total                     | 125.9                     | 15                    | 150 | 0 | 83.9 | 80-120 |   |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 48.62                     | 5.0                   | 50  | 0 | 97.2 | 70-125 | 0 |
| <i>Surr: 4-Bromofluorobenzene</i>  | 51.52                     | 5.0                   | 50  | 0 | 103  | 72-125 | 0 |
| <i>Surr: Dibromofluoromethane</i>  | 48.91                     | 5.0                   | 50  | 0 | 97.8 | 71-125 | 0 |
| <i>Surr: Toluene-d8</i>            | 47.29                     | 5.0                   | 50  | 0 | 94.6 | 75-125 | 0 |

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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162237** Instrument ID **VOA6** Method: **SW8260**

| MSD                       |        |                      |         | Sample ID: 14021211-17AMSD |                |               | Units: µg/L   |       | Analysis Date: 3/3/2014 03:39 PM |      |  |
|---------------------------|--------|----------------------|---------|----------------------------|----------------|---------------|---------------|-------|----------------------------------|------|--|
| Client ID:                |        | Run ID: VOA6_140303A |         |                            | SeqNo: 3550805 |               | Prep Date:    |       | DF: 1                            |      |  |
| Analyte                   | Result | PQL                  | SPK Val | SPK Ref Value              | %REC           | Control Limit | RPD Ref Value | %RPD  | RPD Limit                        | Qual |  |
| 1,1,1-Trichloroethane     | 47.3   | 5.0                  | 50      | 0                          | 94.6           | 80-120        | 43.3          | 8.81  | 20                               |      |  |
| 1,1,2,2-Tetrachloroethane | 42.38  | 5.0                  | 50      | 0                          | 84.8           | 72-120        | 40.45         | 4.67  | 20                               |      |  |
| 1,1,2-Trichloroethane     | 45.61  | 5.0                  | 50      | 0                          | 91.2           | 80-120        | 44.49         | 2.48  | 20                               |      |  |
| 1,1-Dichloroethane        | 45.6   | 5.0                  | 50      | 0                          | 91.2           | 76-120        | 43.71         | 4.24  | 20                               |      |  |
| 1,1-Dichloroethene        | 42.22  | 5.0                  | 50      | 0                          | 84.4           | 73-124        | 38.71         | 8.67  | 20                               |      |  |
| 1,2,4-Trimethylbenzene    | 39.7   | 5.0                  | 50      | 0                          | 79.4           | 68-123        | 37.63         | 5.35  | 20                               |      |  |
| 1,2-Dibromoethane         | 47.65  | 5.0                  | 50      | 0                          | 95.3           | 80-120        | 47.04         | 1.29  | 20                               |      |  |
| 1,2-Dichloroethane        | 47.74  | 5.0                  | 50      | 0                          | 95.5           | 78-120        | 45.66         | 4.45  | 20                               |      |  |
| 1,2-Dichloropropane       | 48.53  | 5.0                  | 50      | 0                          | 97.1           | 80-120        | 47.38         | 2.39  | 20                               |      |  |
| 1,3,5-Trimethylbenzene    | 39.15  | 5.0                  | 50      | 0                          | 78.3           | 80-120        | 36.19         | 7.84  | 20                               | S    |  |
| 2-Butanone                | 102.8  | 10                   | 100     | 0                          | 103            | 58-132        | 96.7          | 6.15  | 20                               |      |  |
| 2-Hexanone                | 95.09  | 10                   | 100     | 0                          | 95.1           | 61-130        | 91.16         | 4.22  | 20                               |      |  |
| 4-Isopropyltoluene        | 39.27  | 5.0                  | 50      | 0                          | 78.5           | 79-120        | 34.55         | 12.8  | 20                               | S    |  |
| 4-Methyl-2-pentanone      | 93.27  | 10                   | 100     | 0                          | 93.3           | 65-127        | 90.38         | 3.14  | 20                               |      |  |
| Acetone                   | 87.42  | 10                   | 100     | 0                          | 87.4           | 59-137        | 90.89         | 3.89  | 20                               |      |  |
| Benzene                   | 46.02  | 5.0                  | 50      | 0                          | 92             | 73-121        | 44.45         | 3.47  | 20                               |      |  |
| Bromodichloromethane      | 48.11  | 5.0                  | 50      | 0                          | 96.2           | 75-125        | 46.73         | 2.91  | 20                               |      |  |
| Bromoform                 | 42.55  | 5.0                  | 50      | 0                          | 85.1           | 70-130        | 39.84         | 6.56  | 20                               |      |  |
| Bromomethane              | 33.42  | 5.0                  | 50      | 0                          | 66.8           | 60-145        | 30.46         | 9.27  | 20                               |      |  |
| Carbon disulfide          | 84.85  | 10                   | 100     | 0                          | 84.9           | 68-141        | 82.7          | 2.57  | 20                               |      |  |
| Carbon tetrachloride      | 43.9   | 5.0                  | 50      | 0                          | 87.8           | 75-125        | 36.27         | 19    | 20                               |      |  |
| Chlorobenzene             | 44.23  | 5.0                  | 50      | 0                          | 88.5           | 80-120        | 43.25         | 2.24  | 20                               |      |  |
| Chloroethane              | 65.62  | 5.0                  | 50      | 0                          | 131            | 76-121        | 86.23         | 27.1  | 20                               | SR   |  |
| Chloroform                | 46.74  | 5.0                  | 50      | 0                          | 93.5           | 70-130        | 45.2          | 3.36  | 20                               |      |  |
| Chloromethane             | 33.32  | 5.0                  | 50      | 0                          | 66.6           | 67-123        | 33.56         | 0.726 | 20                               | S    |  |
| cis-1,2-Dichloroethene    | 49.74  | 5.0                  | 50      | 0                          | 99.5           | 78-120        | 48.34         | 2.86  | 20                               |      |  |
| cis-1,3-Dichloropropene   | 49.36  | 5.0                  | 50      | 0                          | 98.7           | 80-120        | 47.3          | 4.27  | 20                               |      |  |
| Dibromochloromethane      | 46.16  | 5.0                  | 50      | 0                          | 92.3           | 80-120        | 44.3          | 4.12  | 20                               |      |  |
| Ethylbenzene              | 43.41  | 5.0                  | 50      | 0                          | 86.8           | 80-120        | 41.01         | 5.69  | 20                               |      |  |
| Isopropylbenzene          | 43.21  | 5.0                  | 50      | 0                          | 86.4           | 75-130        | 39.66         | 8.58  | 20                               |      |  |
| m,p-Xylene                | 88.09  | 10                   | 100     | 0                          | 88.1           | 78-121        | 83.45         | 5.41  | 20                               |      |  |
| Methyl tert-butyl ether   | 50.39  | 5.0                  | 50      | 0                          | 101            | 73-121        | 50.08         | 0.605 | 20                               |      |  |
| Methylene chloride        | 48.96  | 10                   | 50      | 0                          | 97.9           | 65-133        | 48.23         | 1.51  | 20                               |      |  |
| Naphthalene               | 43.87  | 5.0                  | 50      | 0                          | 87.7           | 65-135        | 39.55         | 10.4  | 20                               |      |  |
| n-Butylbenzene            | 39.34  | 5.0                  | 50      | 0                          | 78.7           | 77-120        | 34.74         | 12.4  | 20                               |      |  |
| n-Propylbenzene           | 38.08  | 5.0                  | 50      | 0                          | 76.2           | 78-120        | 35.42         | 7.22  | 20                               | S    |  |
| o-Xylene                  | 44.73  | 5.0                  | 50      | 0                          | 89.5           | 80-120        | 42.41         | 5.31  | 20                               |      |  |
| sec-Butylbenzene          | 37.87  | 5.0                  | 50      | 0                          | 75.7           | 78-120        | 33.09         | 13.5  | 20                               | S    |  |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

|                                    |                           |     |     |                       |      |        |       |        |    |  |
|------------------------------------|---------------------------|-----|-----|-----------------------|------|--------|-------|--------|----|--|
| Batch ID: <b>R162237</b>           | Instrument ID <b>VOA6</b> |     |     | Method: <b>SW8260</b> |      |        |       |        |    |  |
| Styrene                            | 44.45                     | 5.0 | 50  | 0                     | 88.9 | 80-120 | 44.46 | 0.0284 | 20 |  |
| Tetrachloroethene                  | 43.15                     | 5.0 | 50  | 0                     | 86.3 | 79-120 | 39.81 | 8.06   | 20 |  |
| Toluene                            | 43.04                     | 5.0 | 50  | 0                     | 86.1 | 80-120 | 41.22 | 4.32   | 20 |  |
| trans-1,2-Dichloroethene           | 47.39                     | 5.0 | 50  | 0                     | 94.8 | 78-120 | 45.55 | 3.96   | 20 |  |
| trans-1,3-Dichloropropene          | 51.7                      | 5.0 | 50  | 0                     | 103  | 80-120 | 49.86 | 3.64   | 20 |  |
| Trichloroethene                    | 46.02                     | 5.0 | 50  | 0                     | 92   | 80-120 | 43.58 | 5.44   | 20 |  |
| Vinyl chloride                     | 41.04                     | 2.0 | 50  | 0                     | 82.1 | 70-127 | 38.71 | 5.84   | 20 |  |
| Xylenes, Total                     | 132.8                     | 15  | 150 | 0                     | 88.5 | 78-121 | 125.9 | 5.38   | 20 |  |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 48.78                     | 5.0 | 50  | 0                     | 97.6 | 70-125 | 48.62 | 0.325  | 20 |  |
| <i>Surr: 4-Bromofluorobenzene</i>  | 51.21                     | 5.0 | 50  | 0                     | 102  | 72-125 | 51.52 | 0.613  | 20 |  |
| <i>Surr: Dibromofluoromethane</i>  | 50.79                     | 5.0 | 50  | 0                     | 102  | 71-125 | 48.91 | 3.77   | 20 |  |
| <i>Surr: Toluene-d8</i>            | 46.88                     | 5.0 | 50  | 0                     | 93.8 | 75-125 | 47.29 | 0.861  | 20 |  |

The following samples were analyzed in this batch:

14030008-01A

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162271** Instrument ID **VOA6** Method: **SW8260**

**MBLK** Sample ID: **VBLKW-140303-R162271** Units: **µg/L** Analysis Date: **3/4/2014 01:44 AM**

Client ID: Run ID: **VOA6\_140303D** SeqNo: **3551663** Prep Date: DF: **1**

| Analyte                   | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---------------------------|--------|-----|---------|---------------|------|---------------|---------------|------|-----------|------|
| 1,1,1-Trichloroethane     | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,1,2,2-Tetrachloroethane | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,1,2-Trichloroethane     | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,1-Dichloroethane        | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,1-Dichloroethene        | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,2,4-Trimethylbenzene    | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,2-Dibromoethane         | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,2-Dichloroethane        | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,2-Dichloropropane       | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,3,5-Trimethylbenzene    | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 2-Butanone                | ND     | 10  |         |               |      |               |               |      |           |      |
| 2-Hexanone                | ND     | 10  |         |               |      |               |               |      |           |      |
| 4-Isopropyltoluene        | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 4-Methyl-2-pentanone      | ND     | 10  |         |               |      |               |               |      |           |      |
| Acetone                   | ND     | 10  |         |               |      |               |               |      |           |      |
| Benzene                   | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Bromodichloromethane      | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Bromoform                 | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Bromomethane              | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Carbon disulfide          | ND     | 10  |         |               |      |               |               |      |           |      |
| Carbon tetrachloride      | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Chlorobenzene             | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Chloroethane              | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Chloroform                | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Chloromethane             | ND     | 5.0 |         |               |      |               |               |      |           |      |
| cis-1,2-Dichloroethene    | ND     | 5.0 |         |               |      |               |               |      |           |      |
| cis-1,3-Dichloropropene   | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Dibromochloromethane      | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Ethylbenzene              | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Isopropylbenzene          | ND     | 5.0 |         |               |      |               |               |      |           |      |
| m,p-Xylene                | ND     | 10  |         |               |      |               |               |      |           |      |
| Methyl tert-butyl ether   | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Methylene chloride        | ND     | 10  |         |               |      |               |               |      |           |      |
| Naphthalene               | ND     | 5.0 |         |               |      |               |               |      |           |      |
| n-Butylbenzene            | ND     | 5.0 |         |               |      |               |               |      |           |      |
| n-Propylbenzene           | ND     | 5.0 |         |               |      |               |               |      |           |      |
| o-Xylene                  | ND     | 5.0 |         |               |      |               |               |      |           |      |
| sec-Butylbenzene          | ND     | 5.0 |         |               |      |               |               |      |           |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company  
Work Order: 14030008  
Project: Navajo Lea Refinery Semi-Annual

QC BATCH REPORT

|                                    |                           |     |    |                       |      |        |   |  |
|------------------------------------|---------------------------|-----|----|-----------------------|------|--------|---|--|
| Batch ID: <b>R162271</b>           | Instrument ID <b>VOA6</b> |     |    | Method: <b>SW8260</b> |      |        |   |  |
| Styrene                            | ND                        | 5.0 |    |                       |      |        |   |  |
| Tetrachloroethene                  | ND                        | 5.0 |    |                       |      |        |   |  |
| Toluene                            | ND                        | 5.0 |    |                       |      |        |   |  |
| trans-1,2-Dichloroethene           | ND                        | 5.0 |    |                       |      |        |   |  |
| trans-1,3-Dichloropropene          | ND                        | 5.0 |    |                       |      |        |   |  |
| Trichloroethene                    | ND                        | 5.0 |    |                       |      |        |   |  |
| Vinyl chloride                     | ND                        | 2.0 |    |                       |      |        |   |  |
| Xylenes, Total                     | ND                        | 15  |    |                       |      |        |   |  |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 48.47                     | 5.0 | 50 | 0                     | 96.9 | 70-125 | 0 |  |
| <i>Surr: 4-Bromofluorobenzene</i>  | 47.91                     | 5.0 | 50 | 0                     | 95.8 | 72-125 | 0 |  |
| <i>Surr: Dibromofluoromethane</i>  | 49.16                     | 5.0 | 50 | 0                     | 98.3 | 71-125 | 0 |  |
| <i>Surr: Toluene-d8</i>            | 46.63                     | 5.0 | 50 | 0                     | 93.3 | 75-125 | 0 |  |

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162271** Instrument ID **VOA6** Method: **SW8260**

| LCS                       |        | Sample ID: <b>VLCSW-140303-R162271</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>3/4/2014 12:27 AM</b> |           |              |
|---------------------------|--------|----------------------------------------|---------|---------------|------|-----------------------|---------------|-----------------------------------------|-----------|--------------|
| Client ID:                |        | Run ID: <b>VOA6_140303D</b>            |         |               |      | SeqNo: <b>3551662</b> |               | Prep Date:                              |           | DF: <b>1</b> |
| Analyte                   | Result | PQL                                    | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                    | RPD Limit | Qual         |
| 1,1,1-Trichloroethane     | 48.74  | 5.0                                    | 50      | 0             | 97.5 | 80-120                |               |                                         |           |              |
| 1,1,2,2-Tetrachloroethane | 40.37  | 5.0                                    | 50      | 0             | 80.7 | 72-120                |               |                                         |           |              |
| 1,1,2-Trichloroethane     | 45.68  | 5.0                                    | 50      | 0             | 91.4 | 80-120                |               |                                         |           |              |
| 1,1-Dichloroethane        | 46.47  | 5.0                                    | 50      | 0             | 92.9 | 76-120                |               |                                         |           |              |
| 1,1-Dichloroethene        | 44.36  | 5.0                                    | 50      | 0             | 88.7 | 73-124                |               |                                         |           |              |
| 1,2,4-Trimethylbenzene    | 41.29  | 5.0                                    | 50      | 0             | 82.6 | 68-123                |               |                                         |           |              |
| 1,2-Dibromoethane         | 47.31  | 5.0                                    | 50      | 0             | 94.6 | 80-120                |               |                                         |           |              |
| 1,2-Dichloroethane        | 46.3   | 5.0                                    | 50      | 0             | 92.6 | 78-120                |               |                                         |           |              |
| 1,2-Dichloropropane       | 48.57  | 5.0                                    | 50      | 0             | 97.1 | 80-120                |               |                                         |           |              |
| 1,3,5-Trimethylbenzene    | 40.97  | 5.0                                    | 50      | 0             | 81.9 | 80-120                |               |                                         |           |              |
| 2-Butanone                | 90.86  | 10                                     | 100     | 0             | 90.9 | 58-132                |               |                                         |           |              |
| 2-Hexanone                | 80.84  | 10                                     | 100     | 0             | 80.8 | 61-130                |               |                                         |           |              |
| 4-Isopropyltoluene        | 40.47  | 5.0                                    | 50      | 0             | 80.9 | 79-120                |               |                                         |           |              |
| 4-Methyl-2-pentanone      | 81.44  | 10                                     | 100     | 0             | 81.4 | 65-127                |               |                                         |           |              |
| Acetone                   | 82.93  | 10                                     | 100     | 0             | 82.9 | 59-137                |               |                                         |           |              |
| Benzene                   | 48.71  | 5.0                                    | 50      | 0             | 97.4 | 73-121                |               |                                         |           |              |
| Bromodichloromethane      | 48.24  | 5.0                                    | 50      | 0             | 96.5 | 75-125                |               |                                         |           |              |
| Bromoform                 | 43.26  | 5.0                                    | 50      | 0             | 86.5 | 70-130                |               |                                         |           |              |
| Bromomethane              | 44.36  | 5.0                                    | 50      | 0             | 88.7 | 60-145                |               |                                         |           |              |
| Carbon disulfide          | 88.78  | 10                                     | 100     | 0             | 88.8 | 68-141                |               |                                         |           |              |
| Carbon tetrachloride      | 46.93  | 5.0                                    | 50      | 0             | 93.9 | 75-125                |               |                                         |           |              |
| Chlorobenzene             | 46.09  | 5.0                                    | 50      | 0             | 92.2 | 80-120                |               |                                         |           |              |
| Chloroethane              | 42.43  | 5.0                                    | 50      | 0             | 84.9 | 70-130                |               |                                         |           |              |
| Chloroform                | 48.42  | 5.0                                    | 50      | 0             | 96.8 | 70-130                |               |                                         |           |              |
| Chloromethane             | 40.45  | 5.0                                    | 50      | 0             | 80.9 | 67-123                |               |                                         |           |              |
| cis-1,2-Dichloroethene    | 50.84  | 5.0                                    | 50      | 0             | 102  | 78-120                |               |                                         |           |              |
| cis-1,3-Dichloropropene   | 48.78  | 5.0                                    | 50      | 0             | 97.6 | 80-120                |               |                                         |           |              |
| Dibromochloromethane      | 46.6   | 5.0                                    | 50      | 0             | 93.2 | 80-120                |               |                                         |           |              |
| Ethylbenzene              | 45.66  | 5.0                                    | 50      | 0             | 91.3 | 80-120                |               |                                         |           |              |
| Isopropylbenzene          | 45.71  | 5.0                                    | 50      | 0             | 91.4 | 75-130                |               |                                         |           |              |
| m,p-Xylene                | 91.98  | 10                                     | 100     | 0             | 92   | 78-121                |               |                                         |           |              |
| Methyl tert-butyl ether   | 46.03  | 5.0                                    | 50      | 0             | 92.1 | 73-121                |               |                                         |           |              |
| Methylene chloride        | 49.64  | 10                                     | 50      | 0             | 99.3 | 65-133                |               |                                         |           |              |
| Naphthalene               | 40.95  | 5.0                                    | 50      | 0             | 81.9 | 65-135                |               |                                         |           |              |
| n-Butylbenzene            | 38.65  | 5.0                                    | 50      | 0             | 77.3 | 77-120                |               |                                         |           |              |
| n-Propylbenzene           | 40.1   | 5.0                                    | 50      | 0             | 80.2 | 78-120                |               |                                         |           |              |
| o-Xylene                  | 46.42  | 5.0                                    | 50      | 0             | 92.8 | 80-120                |               |                                         |           |              |
| sec-Butylbenzene          | 39     | 5.0                                    | 50      | 0             | 78   | 78-120                |               |                                         |           |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

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|                                    |                           |                       |     |   |      |        |   |
|------------------------------------|---------------------------|-----------------------|-----|---|------|--------|---|
| Batch ID: <b>R162271</b>           | Instrument ID <b>VOA6</b> | Method: <b>SW8260</b> |     |   |      |        |   |
| Styrene                            | 48.59                     | 5.0                   | 50  | 0 | 97.2 | 80-120 |   |
| Tetrachloroethene                  | 45.9                      | 5.0                   | 50  | 0 | 91.8 | 79-120 |   |
| Toluene                            | 45.33                     | 5.0                   | 50  | 0 | 90.7 | 80-120 |   |
| trans-1,2-Dichloroethene           | 50.83                     | 5.0                   | 50  | 0 | 102  | 78-120 |   |
| trans-1,3-Dichloropropene          | 51.14                     | 5.0                   | 50  | 0 | 102  | 80-120 |   |
| Trichloroethene                    | 50.04                     | 5.0                   | 50  | 0 | 100  | 80-120 |   |
| Vinyl chloride                     | 45.49                     | 2.0                   | 50  | 0 | 91   | 70-127 |   |
| Xylenes, Total                     | 138.4                     | 15                    | 150 | 0 | 92.3 | 80-120 |   |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 46.16                     | 5.0                   | 50  | 0 | 92.3 | 70-125 | 0 |
| <i>Surr: 4-Bromofluorobenzene</i>  | 50.89                     | 5.0                   | 50  | 0 | 102  | 72-125 | 0 |
| <i>Surr: Dibromofluoromethane</i>  | 49.95                     | 5.0                   | 50  | 0 | 99.9 | 71-125 | 0 |
| <i>Surr: Toluene-d8</i>            | 46.77                     | 5.0                   | 50  | 0 | 93.5 | 75-125 | 0 |

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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162271** Instrument ID **VOA6** Method: **SW8260**

| MS                        |        | Sample ID: <b>14030008-11AMS</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>3/4/2014 02:36 AM</b> |           |              |
|---------------------------|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|-----------------------------------------|-----------|--------------|
| Client ID: <b>MW-29</b>   |        | Run ID: <b>VOA6_140303D</b>      |         |               |      | SeqNo: <b>3551714</b> |               | Prep Date:                              |           | DF: <b>1</b> |
| Analyte                   | Result | PQL                              | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                    | RPD Limit | Qual         |
| 1,1,1-Trichloroethane     | 41.79  | 5.0                              | 50      | 0             | 83.6 | 80-120                |               |                                         |           |              |
| 1,1,2,2-Tetrachloroethane | 39.33  | 5.0                              | 50      | 0             | 78.7 | 72-120                |               |                                         |           |              |
| 1,1,2-Trichloroethane     | 44.83  | 5.0                              | 50      | 0             | 89.7 | 80-120                |               |                                         |           |              |
| 1,1-Dichloroethane        | 44.26  | 5.0                              | 50      | 0             | 88.5 | 76-120                |               |                                         |           |              |
| 1,1-Dichloroethene        | 35.36  | 5.0                              | 50      | 0             | 70.7 | 73-124                |               |                                         |           | S            |
| 1,2,4-Trimethylbenzene    | 36.47  | 5.0                              | 50      | 0             | 72.9 | 68-123                |               |                                         |           |              |
| 1,2-Dibromoethane         | 47.28  | 5.0                              | 50      | 0             | 94.6 | 80-120                |               |                                         |           |              |
| 1,2-Dichloroethane        | 46.22  | 5.0                              | 50      | 0             | 92.4 | 78-120                |               |                                         |           |              |
| 1,2-Dichloropropane       | 48.13  | 5.0                              | 50      | 0             | 96.3 | 80-120                |               |                                         |           |              |
| 1,3,5-Trimethylbenzene    | 35.5   | 5.0                              | 50      | 0             | 71   | 80-120                |               |                                         |           | S            |
| 2-Butanone                | 91.94  | 10                               | 100     | 0             | 91.9 | 58-132                |               |                                         |           |              |
| 2-Hexanone                | 85.81  | 10                               | 100     | 0             | 85.8 | 61-130                |               |                                         |           |              |
| 4-Isopropyltoluene        | 31.95  | 5.0                              | 50      | 0             | 63.9 | 79-120                |               |                                         |           | S            |
| 4-Methyl-2-pentanone      | 86.06  | 10                               | 100     | 0             | 86.1 | 65-127                |               |                                         |           |              |
| Acetone                   | 78.3   | 10                               | 100     | 0             | 78.3 | 59-137                |               |                                         |           |              |
| Benzene                   | 45.6   | 5.0                              | 50      | 0             | 91.2 | 73-121                |               |                                         |           |              |
| Bromodichloromethane      | 47.43  | 5.0                              | 50      | 0             | 94.9 | 75-125                |               |                                         |           |              |
| Bromoform                 | 42.21  | 5.0                              | 50      | 0             | 84.4 | 70-130                |               |                                         |           |              |
| Bromomethane              | 42.68  | 5.0                              | 50      | 0             | 85.4 | 60-145                |               |                                         |           |              |
| Carbon disulfide          | 75.04  | 10                               | 100     | 0             | 75   | 68-141                |               |                                         |           |              |
| Carbon tetrachloride      | 36.94  | 5.0                              | 50      | 0             | 73.9 | 75-125                |               |                                         |           | S            |
| Chlorobenzene             | 44.65  | 5.0                              | 50      | 0             | 89.3 | 80-120                |               |                                         |           |              |
| Chloroethane              | 38.04  | 5.0                              | 50      | 0             | 76.1 | 70-130                |               |                                         |           |              |
| Chloroform                | 47.95  | 5.0                              | 50      | 0             | 95.9 | 70-130                |               |                                         |           |              |
| Chloromethane             | 34.55  | 5.0                              | 50      | 0             | 69.1 | 67-123                |               |                                         |           |              |
| cis-1,2-Dichloroethene    | 49.43  | 5.0                              | 50      | 0             | 98.9 | 78-120                |               |                                         |           |              |
| cis-1,3-Dichloropropene   | 47.46  | 5.0                              | 50      | 0             | 94.9 | 80-120                |               |                                         |           |              |
| Dibromochloromethane      | 46.24  | 5.0                              | 50      | 0             | 92.5 | 80-120                |               |                                         |           |              |
| Ethylbenzene              | 41.85  | 5.0                              | 50      | 0             | 83.7 | 80-120                |               |                                         |           |              |
| Isopropylbenzene          | 39.31  | 5.0                              | 50      | 0             | 78.6 | 75-130                |               |                                         |           |              |
| m,p-Xylene                | 83.36  | 10                               | 100     | 0             | 83.4 | 78-121                |               |                                         |           |              |
| Methyl tert-butyl ether   | 47.86  | 5.0                              | 50      | 0             | 95.7 | 73-121                |               |                                         |           |              |
| Methylene chloride        | 49.8   | 10                               | 50      | 0             | 99.6 | 65-133                |               |                                         |           |              |
| Naphthalene               | 36.54  | 5.0                              | 50      | 0             | 73.1 | 65-135                |               |                                         |           |              |
| n-Butylbenzene            | 29.71  | 5.0                              | 50      | 0             | 59.4 | 77-120                |               |                                         |           | S            |
| n-Propylbenzene           | 33.07  | 5.0                              | 50      | 0             | 66.1 | 78-120                |               |                                         |           | S            |
| o-Xylene                  | 43.14  | 5.0                              | 50      | 0             | 86.3 | 80-120                |               |                                         |           |              |
| sec-Butylbenzene          | 30.1   | 5.0                              | 50      | 0             | 60.2 | 78-120                |               |                                         |           | S            |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

|                                    |                           |                       |     |   |      |        |   |
|------------------------------------|---------------------------|-----------------------|-----|---|------|--------|---|
| Batch ID: <b>R162271</b>           | Instrument ID <b>VOA6</b> | Method: <b>SW8260</b> |     |   |      |        |   |
| Styrene                            | 45.6                      | 5.0                   | 50  | 0 | 91.2 | 80-120 |   |
| Tetrachloroethene                  | 36.7                      | 5.0                   | 50  | 0 | 73.4 | 79-120 | S |
| Toluene                            | 41.62                     | 5.0                   | 50  | 0 | 83.2 | 80-120 |   |
| trans-1,2-Dichloroethene           | 45.39                     | 5.0                   | 50  | 0 | 90.8 | 78-120 |   |
| trans-1,3-Dichloropropene          | 49.89                     | 5.0                   | 50  | 0 | 99.8 | 80-120 |   |
| Trichloroethene                    | 44.52                     | 5.0                   | 50  | 0 | 89   | 80-120 |   |
| Vinyl chloride                     | 35.2                      | 2.0                   | 50  | 0 | 70.4 | 70-127 |   |
| Xylenes, Total                     | 126.5                     | 15                    | 150 | 0 | 84.3 | 80-120 |   |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 47.09                     | 5.0                   | 50  | 0 | 94.2 | 70-125 | 0 |
| <i>Surr: 4-Bromofluorobenzene</i>  | 51.36                     | 5.0                   | 50  | 0 | 103  | 72-125 | 0 |
| <i>Surr: Dibromofluoromethane</i>  | 50.05                     | 5.0                   | 50  | 0 | 100  | 71-125 | 0 |
| <i>Surr: Toluene-d8</i>            | 46.22                     | 5.0                   | 50  | 0 | 92.4 | 75-125 | 0 |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162271** Instrument ID **VOA6** Method: **SW8260**

| MSD                       |        | Sample ID: <b>14030008-11AMSD</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>3/4/2014 03:02 AM</b> |           |              |
|---------------------------|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|-----------------------------------------|-----------|--------------|
| Client ID: <b>MW-29</b>   |        | Run ID: <b>VOA6_140303D</b>       |         |               |      | SeqNo: <b>3551715</b> |               | Prep Date:                              |           | DF: <b>1</b> |
| Analyte                   | Result | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                    | RPD Limit | Qual         |
| 1,1,1-Trichloroethane     | 47.51  | 5.0                               | 50      | 0             | 95   | 80-120                | 41.79         | 12.8                                    | 20        |              |
| 1,1,2,2-Tetrachloroethane | 38.99  | 5.0                               | 50      | 0             | 78   | 72-120                | 39.33         | 0.884                                   | 20        |              |
| 1,1,2-Trichloroethane     | 44     | 5.0                               | 50      | 0             | 88   | 80-120                | 44.83         | 1.89                                    | 20        |              |
| 1,1-Dichloroethane        | 43.9   | 5.0                               | 50      | 0             | 87.8 | 76-120                | 44.26         | 0.809                                   | 20        |              |
| 1,1-Dichloroethene        | 42.66  | 5.0                               | 50      | 0             | 85.3 | 73-124                | 35.36         | 18.7                                    | 20        |              |
| 1,2,4-Trimethylbenzene    | 39.68  | 5.0                               | 50      | 0             | 79.4 | 68-123                | 36.47         | 8.44                                    | 20        |              |
| 1,2-Dibromoethane         | 46.5   | 5.0                               | 50      | 0             | 93   | 80-120                | 47.28         | 1.68                                    | 20        |              |
| 1,2-Dichloroethane        | 45.13  | 5.0                               | 50      | 0             | 90.3 | 78-120                | 46.22         | 2.38                                    | 20        |              |
| 1,2-Dichloropropane       | 47.11  | 5.0                               | 50      | 0             | 94.2 | 80-120                | 48.13         | 2.13                                    | 20        |              |
| 1,3,5-Trimethylbenzene    | 39.67  | 5.0                               | 50      | 0             | 79.3 | 80-120                | 35.5          | 11.1                                    | 20        | S            |
| 2-Butanone                | 91.62  | 10                                | 100     | 0             | 91.6 | 58-132                | 91.94         | 0.35                                    | 20        |              |
| 2-Hexanone                | 86.04  | 10                                | 100     | 0             | 86   | 61-130                | 85.81         | 0.267                                   | 20        |              |
| 4-Isopropyltoluene        | 39.03  | 5.0                               | 50      | 0             | 78.1 | 79-120                | 31.95         | 20                                      | 20        | S            |
| 4-Methyl-2-pentanone      | 86.07  | 10                                | 100     | 0             | 86.1 | 65-127                | 86.06         | 0.00955                                 | 20        |              |
| Acetone                   | 78.41  | 10                                | 100     | 0             | 78.4 | 59-137                | 78.3          | 0.146                                   | 20        |              |
| Benzene                   | 46.5   | 5.0                               | 50      | 0             | 93   | 73-121                | 45.6          | 1.95                                    | 20        |              |
| Bromodichloromethane      | 47.24  | 5.0                               | 50      | 0             | 94.5 | 75-125                | 47.43         | 0.402                                   | 20        |              |
| Bromoform                 | 42.62  | 5.0                               | 50      | 0             | 85.2 | 70-130                | 42.21         | 0.958                                   | 20        |              |
| Bromomethane              | 42     | 5.0                               | 50      | 0             | 84   | 60-145                | 42.68         | 1.61                                    | 20        |              |
| Carbon disulfide          | 84.74  | 10                                | 100     | 0             | 84.7 | 68-141                | 75.04         | 12.1                                    | 20        |              |
| Carbon tetrachloride      | 46.22  | 5.0                               | 50      | 0             | 92.4 | 75-125                | 36.94         | 22.3                                    | 20        | R            |
| Chlorobenzene             | 45.18  | 5.0                               | 50      | 0             | 90.4 | 80-120                | 44.65         | 1.18                                    | 20        |              |
| Chloroethane              | 39.51  | 5.0                               | 50      | 0             | 79   | 76-121                | 38.04         | 3.81                                    | 20        |              |
| Chloroform                | 47.4   | 5.0                               | 50      | 0             | 94.8 | 70-130                | 47.95         | 1.16                                    | 20        |              |
| Chloromethane             | 36.66  | 5.0                               | 50      | 0             | 73.3 | 67-123                | 34.55         | 5.91                                    | 20        |              |
| cis-1,2-Dichloroethene    | 49.68  | 5.0                               | 50      | 0             | 99.4 | 78-120                | 49.43         | 0.49                                    | 20        |              |
| cis-1,3-Dichloropropene   | 47.22  | 5.0                               | 50      | 0             | 94.4 | 80-120                | 47.46         | 0.518                                   | 20        |              |
| Dibromochloromethane      | 45.66  | 5.0                               | 50      | 0             | 91.3 | 80-120                | 46.24         | 1.25                                    | 20        |              |
| Ethylbenzene              | 45.35  | 5.0                               | 50      | 0             | 90.7 | 80-120                | 41.85         | 8.02                                    | 20        |              |
| Isopropylbenzene          | 45.18  | 5.0                               | 50      | 0             | 90.4 | 75-130                | 39.31         | 13.9                                    | 20        |              |
| m,p-Xylene                | 90.5   | 10                                | 100     | 0             | 90.5 | 78-121                | 83.36         | 8.21                                    | 20        |              |
| Methyl tert-butyl ether   | 47.4   | 5.0                               | 50      | 0             | 94.8 | 73-121                | 47.86         | 0.951                                   | 20        |              |
| Methylene chloride        | 48.83  | 10                                | 50      | 0             | 97.7 | 65-133                | 49.8          | 1.97                                    | 20        |              |
| Naphthalene               | 40.33  | 5.0                               | 50      | 0             | 80.7 | 65-135                | 36.54         | 9.85                                    | 20        |              |
| n-Butylbenzene            | 37.47  | 5.0                               | 50      | 0             | 74.9 | 77-120                | 29.71         | 23.1                                    | 20        | SR           |
| n-Propylbenzene           | 39.45  | 5.0                               | 50      | 0             | 78.9 | 78-120                | 33.07         | 17.6                                    | 20        |              |
| o-Xylene                  | 45.57  | 5.0                               | 50      | 0             | 91.1 | 80-120                | 43.14         | 5.48                                    | 20        |              |
| sec-Butylbenzene          | 37.8   | 5.0                               | 50      | 0             | 75.6 | 78-120                | 30.1          | 22.7                                    | 20        | SR           |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company  
Work Order: 14030008  
Project: Navajo Lea Refinery Semi-Annual

QC BATCH REPORT

|                                    |                           |     |     |                       |      |        |       |       |    |  |
|------------------------------------|---------------------------|-----|-----|-----------------------|------|--------|-------|-------|----|--|
| Batch ID: <b>R162271</b>           | Instrument ID <b>VOA6</b> |     |     | Method: <b>SW8260</b> |      |        |       |       |    |  |
| Styrene                            | 46.71                     | 5.0 | 50  | 0                     | 93.4 | 80-120 | 45.6  | 2.41  | 20 |  |
| Tetrachloroethene                  | 44.1                      | 5.0 | 50  | 0                     | 88.2 | 79-120 | 36.7  | 18.3  | 20 |  |
| Toluene                            | 43.36                     | 5.0 | 50  | 0                     | 86.7 | 80-120 | 41.62 | 4.1   | 20 |  |
| trans-1,2-Dichloroethene           | 48.83                     | 5.0 | 50  | 0                     | 97.7 | 78-120 | 45.39 | 7.3   | 20 |  |
| trans-1,3-Dichloropropene          | 49.36                     | 5.0 | 50  | 0                     | 98.7 | 80-120 | 49.89 | 1.08  | 20 |  |
| Trichloroethene                    | 47.97                     | 5.0 | 50  | 0                     | 95.9 | 80-120 | 44.52 | 7.45  | 20 |  |
| Vinyl chloride                     | 40.69                     | 2.0 | 50  | 0                     | 81.4 | 70-127 | 35.2  | 14.5  | 20 |  |
| Xylenes, Total                     | 136.1                     | 15  | 150 | 0                     | 90.7 | 78-121 | 126.5 | 7.29  | 20 |  |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 46.11                     | 5.0 | 50  | 0                     | 92.2 | 70-125 | 47.09 | 2.1   | 20 |  |
| <i>Surr: 4-Bromofluorobenzene</i>  | 50.72                     | 5.0 | 50  | 0                     | 101  | 72-125 | 51.36 | 1.25  | 20 |  |
| <i>Surr: Dibromofluoromethane</i>  | 49.93                     | 5.0 | 50  | 0                     | 99.9 | 71-125 | 50.05 | 0.253 | 20 |  |
| <i>Surr: Toluene-d8</i>            | 46.47                     | 5.0 | 50  | 0                     | 92.9 | 75-125 | 46.22 | 0.541 | 20 |  |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14030008-02A | 14030008-03A | 14030008-04A | 14030008-05A |
| 14030008-06A | 14030008-07A | 14030008-08A | 14030008-09A |
| 14030008-10A | 14030008-11A | 14030008-12A | 14030008-13A |
| 14030008-14A | 14030008-15A | 14030008-16A | 14030008-17A |
| 14030008-18A | 14030008-19A | 14030008-20A |              |

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162292** Instrument ID **VOA7** Method: **SW8260**

**MBLK** Sample ID: **VBLKW-140304-R162292** Units: **µg/L** Analysis Date: **3/4/2014 01:35 PM**

Client ID: Run ID: **VOA7\_140304B** SeqNo: **3551968** Prep Date: DF: **1**

| Analyte                   | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---------------------------|--------|-----|---------|---------------|------|---------------|---------------|------|-----------|------|
| 1,1,1-Trichloroethane     | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,1,2,2-Tetrachloroethane | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,1,2-Trichloroethane     | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,1-Dichloroethane        | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,1-Dichloroethene        | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,2,4-Trimethylbenzene    | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,2-Dibromoethane         | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,2-Dichloroethane        | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,2-Dichloropropane       | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,3,5-Trimethylbenzene    | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 2-Butanone                | ND     | 10  |         |               |      |               |               |      |           |      |
| 2-Hexanone                | ND     | 10  |         |               |      |               |               |      |           |      |
| 4-Isopropyltoluene        | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 4-Methyl-2-pentanone      | ND     | 10  |         |               |      |               |               |      |           |      |
| Acetone                   | ND     | 10  |         |               |      |               |               |      |           |      |
| Benzene                   | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Bromodichloromethane      | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Bromoform                 | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Bromomethane              | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Carbon disulfide          | ND     | 10  |         |               |      |               |               |      |           |      |
| Carbon tetrachloride      | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Chlorobenzene             | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Chloroethane              | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Chloroform                | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Chloromethane             | ND     | 5.0 |         |               |      |               |               |      |           |      |
| cis-1,2-Dichloroethene    | ND     | 5.0 |         |               |      |               |               |      |           |      |
| cis-1,3-Dichloropropene   | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Dibromochloromethane      | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Ethylbenzene              | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Isopropylbenzene          | ND     | 5.0 |         |               |      |               |               |      |           |      |
| m,p-Xylene                | ND     | 10  |         |               |      |               |               |      |           |      |
| Methyl tert-butyl ether   | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Methylene chloride        | ND     | 10  |         |               |      |               |               |      |           |      |
| Naphthalene               | ND     | 5.0 |         |               |      |               |               |      |           |      |
| n-Butylbenzene            | ND     | 5.0 |         |               |      |               |               |      |           |      |
| n-Propylbenzene           | ND     | 5.0 |         |               |      |               |               |      |           |      |
| o-Xylene                  | ND     | 5.0 |         |               |      |               |               |      |           |      |
| sec-Butylbenzene          | ND     | 5.0 |         |               |      |               |               |      |           |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company  
Work Order: 14030008  
Project: Navajo Lea Refinery Semi-Annual

QC BATCH REPORT

|                                    |                           |     |    |                       |      |        |   |  |
|------------------------------------|---------------------------|-----|----|-----------------------|------|--------|---|--|
| Batch ID: <b>R162292</b>           | Instrument ID <b>VOA7</b> |     |    | Method: <b>SW8260</b> |      |        |   |  |
| Styrene                            | ND                        | 5.0 |    |                       |      |        |   |  |
| Tetrachloroethene                  | ND                        | 5.0 |    |                       |      |        |   |  |
| Toluene                            | ND                        | 5.0 |    |                       |      |        |   |  |
| trans-1,2-Dichloroethene           | ND                        | 5.0 |    |                       |      |        |   |  |
| trans-1,3-Dichloropropene          | ND                        | 5.0 |    |                       |      |        |   |  |
| Trichloroethene                    | ND                        | 5.0 |    |                       |      |        |   |  |
| Vinyl chloride                     | ND                        | 2.0 |    |                       |      |        |   |  |
| Xylenes, Total                     | ND                        | 15  |    |                       |      |        |   |  |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 43.49                     | 5.0 | 50 | 0                     | 87   | 70-125 | 0 |  |
| <i>Surr: 4-Bromofluorobenzene</i>  | 46.64                     | 5.0 | 50 | 0                     | 93.3 | 72-125 | 0 |  |
| <i>Surr: Dibromofluoromethane</i>  | 45.48                     | 5.0 | 50 | 0                     | 91   | 71-125 | 0 |  |
| <i>Surr: Toluene-d8</i>            | 49.52                     | 5.0 | 50 | 0                     | 99   | 75-125 | 0 |  |

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162292** Instrument ID **VOA7** Method: **SW8260**

**LCS** Sample ID: **VLCSW-140304-R162292** Units: **µg/L** Analysis Date: **3/4/2014 12:02 PM**

Client ID: Run ID: **VOA7\_140304B** SeqNo: **3551967** Prep Date: DF: **1**

| Analyte                   | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---------------------------|--------|-----|---------|---------------|------|---------------|---------------|------|-----------|------|
| 1,1,1-Trichloroethane     | 52.1   | 5.0 | 50      | 0             | 104  | 80-120        |               |      |           |      |
| 1,1,2,2-Tetrachloroethane | 48.06  | 5.0 | 50      | 0             | 96.1 | 72-120        |               |      |           |      |
| 1,1,2-Trichloroethane     | 51.96  | 5.0 | 50      | 0             | 104  | 80-120        |               |      |           |      |
| 1,1-Dichloroethane        | 48.19  | 5.0 | 50      | 0             | 96.4 | 76-120        |               |      |           |      |
| 1,1-Dichloroethene        | 50.2   | 5.0 | 50      | 0             | 100  | 73-124        |               |      |           |      |
| 1,2,4-Trimethylbenzene    | 52.94  | 5.0 | 50      | 0             | 106  | 68-123        |               |      |           |      |
| 1,2-Dibromoethane         | 52.98  | 5.0 | 50      | 0             | 106  | 80-120        |               |      |           |      |
| 1,2-Dichloroethane        | 51.53  | 5.0 | 50      | 0             | 103  | 78-120        |               |      |           |      |
| 1,2-Dichloropropane       | 51.89  | 5.0 | 50      | 0             | 104  | 80-120        |               |      |           |      |
| 1,3,5-Trimethylbenzene    | 52.88  | 5.0 | 50      | 0             | 106  | 80-120        |               |      |           |      |
| 2-Butanone                | 97.11  | 10  | 100     | 0             | 97.1 | 58-132        |               |      |           |      |
| 2-Hexanone                | 101.9  | 10  | 100     | 0             | 102  | 61-130        |               |      |           |      |
| 4-Isopropyltoluene        | 55.2   | 5.0 | 50      | 0             | 110  | 79-120        |               |      |           |      |
| 4-Methyl-2-pentanone      | 102.9  | 10  | 100     | 0             | 103  | 65-127        |               |      |           |      |
| Acetone                   | 99.69  | 10  | 100     | 0             | 99.7 | 59-137        |               |      |           |      |
| Benzene                   | 51.76  | 5.0 | 50      | 0             | 104  | 73-121        |               |      |           |      |
| Bromodichloromethane      | 52.11  | 5.0 | 50      | 0             | 104  | 75-125        |               |      |           |      |
| Bromoform                 | 53.52  | 5.0 | 50      | 0             | 107  | 70-130        |               |      |           |      |
| Bromomethane              | 44.49  | 5.0 | 50      | 0             | 89   | 60-145        |               |      |           |      |
| Carbon disulfide          | 100.9  | 10  | 100     | 0             | 101  | 68-141        |               |      |           |      |
| Carbon tetrachloride      | 54.79  | 5.0 | 50      | 0             | 110  | 75-125        |               |      |           |      |
| Chlorobenzene             | 51.03  | 5.0 | 50      | 0             | 102  | 80-120        |               |      |           |      |
| Chloroethane              | 48.42  | 5.0 | 50      | 0             | 96.8 | 70-130        |               |      |           |      |
| Chloroform                | 49.44  | 5.0 | 50      | 0             | 98.9 | 70-130        |               |      |           |      |
| Chloromethane             | 48.4   | 5.0 | 50      | 0             | 96.8 | 67-123        |               |      |           |      |
| cis-1,2-Dichloroethene    | 50.25  | 5.0 | 50      | 0             | 100  | 78-120        |               |      |           |      |
| cis-1,3-Dichloropropene   | 55.21  | 5.0 | 50      | 0             | 110  | 80-120        |               |      |           |      |
| Dibromochloromethane      | 52.1   | 5.0 | 50      | 0             | 104  | 80-120        |               |      |           |      |
| Ethylbenzene              | 54.06  | 5.0 | 50      | 0             | 108  | 80-120        |               |      |           |      |
| Isopropylbenzene          | 55.37  | 5.0 | 50      | 0             | 111  | 75-130        |               |      |           |      |
| m,p-Xylene                | 109.2  | 10  | 100     | 0             | 109  | 78-121        |               |      |           |      |
| Methyl tert-butyl ether   | 48.37  | 5.0 | 50      | 0             | 96.7 | 73-121        |               |      |           |      |
| Methylene chloride        | 49.8   | 10  | 50      | 0             | 99.6 | 65-133        |               |      |           |      |
| Naphthalene               | 50.12  | 5.0 | 50      | 0             | 100  | 65-135        |               |      |           |      |
| n-Butylbenzene            | 57.34  | 5.0 | 50      | 0             | 115  | 77-120        |               |      |           |      |
| n-Propylbenzene           | 53.69  | 5.0 | 50      | 0             | 107  | 78-120        |               |      |           |      |
| o-Xylene                  | 53.67  | 5.0 | 50      | 0             | 107  | 80-120        |               |      |           |      |
| sec-Butylbenzene          | 54.18  | 5.0 | 50      | 0             | 108  | 78-120        |               |      |           |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

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|                                    |                           |                       |     |   |      |        |   |
|------------------------------------|---------------------------|-----------------------|-----|---|------|--------|---|
| Batch ID: <b>R162292</b>           | Instrument ID <b>VOA7</b> | Method: <b>SW8260</b> |     |   |      |        |   |
| Styrene                            | 55.3                      | 5.0                   | 50  | 0 | 111  | 80-120 |   |
| Tetrachloroethene                  | 53.54                     | 5.0                   | 50  | 0 | 107  | 79-120 |   |
| Toluene                            | 53.6                      | 5.0                   | 50  | 0 | 107  | 80-120 |   |
| trans-1,2-Dichloroethene           | 50.82                     | 5.0                   | 50  | 0 | 102  | 78-120 |   |
| trans-1,3-Dichloropropene          | 55.27                     | 5.0                   | 50  | 0 | 111  | 80-120 |   |
| Trichloroethene                    | 51.85                     | 5.0                   | 50  | 0 | 104  | 80-120 |   |
| Vinyl chloride                     | 50.39                     | 2.0                   | 50  | 0 | 101  | 70-127 |   |
| Xylenes, Total                     | 162.9                     | 15                    | 150 | 0 | 109  | 80-120 |   |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 42.74                     | 5.0                   | 50  | 0 | 85.5 | 70-125 | 0 |
| <i>Surr: 4-Bromofluorobenzene</i>  | 50.28                     | 5.0                   | 50  | 0 | 101  | 72-125 | 0 |
| <i>Surr: Dibromofluoromethane</i>  | 44.5                      | 5.0                   | 50  | 0 | 89   | 71-125 | 0 |
| <i>Surr: Toluene-d8</i>            | 47.86                     | 5.0                   | 50  | 0 | 95.7 | 75-125 | 0 |

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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162292** Instrument ID **VOA7** Method: **SW8260**

| MS                        |        | Sample ID: <b>14021193-09AMS</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>3/4/2014 03:31 PM</b> |           |              |
|---------------------------|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|-----------------------------------------|-----------|--------------|
| Client ID:                |        | Run ID: <b>VOA7_140304B</b>      |         |               |      | SeqNo: <b>3552471</b> |               | Prep Date:                              |           | DF: <b>1</b> |
| Analyte                   | Result | PQL                              | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                    | RPD Limit | Qual         |
| 1,1,1-Trichloroethane     | 45.26  | 5.0                              | 50      | 0             | 90.5 | 80-120                |               |                                         |           |              |
| 1,1,2,2-Tetrachloroethane | 47.17  | 5.0                              | 50      | 0             | 94.3 | 72-120                |               |                                         |           |              |
| 1,1,2-Trichloroethane     | 51.03  | 5.0                              | 50      | 0             | 102  | 80-120                |               |                                         |           |              |
| 1,1-Dichloroethane        | 45.41  | 5.0                              | 50      | 0             | 90.8 | 76-120                |               |                                         |           |              |
| 1,1-Dichloroethene        | 43.96  | 5.0                              | 50      | 0             | 87.9 | 73-124                |               |                                         |           |              |
| 1,2,4-Trimethylbenzene    | 46.84  | 5.0                              | 50      | 0             | 93.7 | 68-123                |               |                                         |           |              |
| 1,2-Dibromoethane         | 52.72  | 5.0                              | 50      | 0             | 105  | 80-120                |               |                                         |           |              |
| 1,2-Dichloroethane        | 49.7   | 5.0                              | 50      | 0             | 99.4 | 78-120                |               |                                         |           |              |
| 1,2-Dichloropropane       | 49.79  | 5.0                              | 50      | 0             | 99.6 | 80-120                |               |                                         |           |              |
| 1,3,5-Trimethylbenzene    | 46.79  | 5.0                              | 50      | 0             | 93.6 | 80-120                |               |                                         |           |              |
| 2-Butanone                | 94.91  | 10                               | 100     | 0             | 94.9 | 58-132                |               |                                         |           |              |
| 2-Hexanone                | 102.6  | 10                               | 100     | 0             | 103  | 61-130                |               |                                         |           |              |
| 4-Isopropyltoluene        | 45.42  | 5.0                              | 50      | 0             | 90.8 | 79-120                |               |                                         |           |              |
| 4-Methyl-2-pentanone      | 101.6  | 10                               | 100     | 0             | 102  | 65-127                |               |                                         |           |              |
| Acetone                   | 98.9   | 10                               | 100     | 0             | 98.9 | 59-137                |               |                                         |           |              |
| Benzene                   | 48.41  | 5.0                              | 50      | 0             | 96.8 | 73-121                |               |                                         |           |              |
| Bromodichloromethane      | 49.85  | 5.0                              | 50      | 0             | 99.7 | 75-125                |               |                                         |           |              |
| Bromoform                 | 53.92  | 5.0                              | 50      | 0             | 108  | 70-130                |               |                                         |           |              |
| Bromomethane              | 41.18  | 5.0                              | 50      | 0             | 82.4 | 60-145                |               |                                         |           |              |
| Carbon disulfide          | 88.25  | 10                               | 100     | 0             | 88.3 | 68-141                |               |                                         |           |              |
| Carbon tetrachloride      | 48.02  | 5.0                              | 50      | 0             | 96   | 75-125                |               |                                         |           |              |
| Chlorobenzene             | 48.41  | 5.0                              | 50      | 0             | 96.8 | 80-120                |               |                                         |           |              |
| Chloroethane              | 45.03  | 5.0                              | 50      | 0             | 90.1 | 70-130                |               |                                         |           |              |
| Chloroform                | 46.89  | 5.0                              | 50      | 0             | 93.8 | 70-130                |               |                                         |           |              |
| Chloromethane             | 44.88  | 5.0                              | 50      | 0             | 89.8 | 67-123                |               |                                         |           |              |
| cis-1,2-Dichloroethene    | 46.87  | 5.0                              | 50      | 0             | 93.7 | 78-120                |               |                                         |           |              |
| cis-1,3-Dichloropropene   | 51.73  | 5.0                              | 50      | 0             | 103  | 80-120                |               |                                         |           |              |
| Dibromochloromethane      | 51.44  | 5.0                              | 50      | 0             | 103  | 80-120                |               |                                         |           |              |
| Ethylbenzene              | 49.27  | 5.0                              | 50      | 0             | 98.5 | 80-120                |               |                                         |           |              |
| Isopropylbenzene          | 49.44  | 5.0                              | 50      | 0             | 98.9 | 75-130                |               |                                         |           |              |
| m,p-Xylene                | 100.6  | 10                               | 100     | 0             | 101  | 78-121                |               |                                         |           |              |
| Methyl tert-butyl ether   | 47.15  | 5.0                              | 50      | 0             | 94.3 | 73-121                |               |                                         |           |              |
| Methylene chloride        | 47.85  | 10                               | 50      | 0             | 95.7 | 65-133                |               |                                         |           |              |
| Naphthalene               | 48.04  | 5.0                              | 50      | 0             | 96.1 | 65-135                |               |                                         |           |              |
| n-Butylbenzene            | 44.96  | 5.0                              | 50      | 0             | 89.9 | 77-120                |               |                                         |           |              |
| n-Propylbenzene           | 46.51  | 5.0                              | 50      | 0             | 93   | 78-120                |               |                                         |           |              |
| o-Xylene                  | 50.27  | 5.0                              | 50      | 0             | 101  | 80-120                |               |                                         |           |              |
| sec-Butylbenzene          | 44.87  | 5.0                              | 50      | 0             | 89.7 | 78-120                |               |                                         |           |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

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|                                    |                           |                       |     |   |      |        |   |
|------------------------------------|---------------------------|-----------------------|-----|---|------|--------|---|
| Batch ID: <b>R162292</b>           | Instrument ID <b>VOA7</b> | Method: <b>SW8260</b> |     |   |      |        |   |
| Styrene                            | 52.69                     | 5.0                   | 50  | 0 | 105  | 80-120 |   |
| Tetrachloroethene                  | 47.68                     | 5.0                   | 50  | 0 | 95.4 | 79-120 |   |
| Toluene                            | 49.42                     | 5.0                   | 50  | 0 | 98.8 | 80-120 |   |
| trans-1,2-Dichloroethene           | 45.71                     | 5.0                   | 50  | 0 | 91.4 | 78-120 |   |
| trans-1,3-Dichloropropene          | 53.62                     | 5.0                   | 50  | 0 | 107  | 80-120 |   |
| Trichloroethene                    | 47.3                      | 5.0                   | 50  | 0 | 94.6 | 80-120 |   |
| Vinyl chloride                     | 44.49                     | 2.0                   | 50  | 0 | 89   | 70-127 |   |
| Xylenes, Total                     | 150.9                     | 15                    | 150 | 0 | 101  | 80-120 |   |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 41.8                      | 5.0                   | 50  | 0 | 83.6 | 70-125 | 0 |
| <i>Surr: 4-Bromofluorobenzene</i>  | 49.78                     | 5.0                   | 50  | 0 | 99.6 | 72-125 | 0 |
| <i>Surr: Dibromofluoromethane</i>  | 43.54                     | 5.0                   | 50  | 0 | 87.1 | 71-125 | 0 |
| <i>Surr: Toluene-d8</i>            | 47.87                     | 5.0                   | 50  | 0 | 95.7 | 75-125 | 0 |

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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162292** Instrument ID **VOA7** Method: **SW8260**

| MSD                       |        |                      |         | Sample ID: 14021193-09AMSD |                |               | Units: µg/L   |        | Analysis Date: 3/4/2014 03:54 PM |      |  |
|---------------------------|--------|----------------------|---------|----------------------------|----------------|---------------|---------------|--------|----------------------------------|------|--|
| Client ID:                |        | Run ID: VOA7_140304B |         |                            | SeqNo: 3552472 |               | Prep Date:    |        | DF: 1                            |      |  |
| Analyte                   | Result | PQL                  | SPK Val | SPK Ref Value              | %REC           | Control Limit | RPD Ref Value | %RPD   | RPD Limit                        | Qual |  |
| 1,1,1-Trichloroethane     | 44.6   | 5.0                  | 50      | 0                          | 89.2           | 80-120        | 45.26         | 1.48   | 20                               |      |  |
| 1,1,2,2-Tetrachloroethane | 47.68  | 5.0                  | 50      | 0                          | 95.4           | 72-120        | 47.17         | 1.08   | 20                               |      |  |
| 1,1,2-Trichloroethane     | 51.19  | 5.0                  | 50      | 0                          | 102            | 80-120        | 51.03         | 0.328  | 20                               |      |  |
| 1,1-Dichloroethane        | 44.32  | 5.0                  | 50      | 0                          | 88.6           | 76-120        | 45.41         | 2.42   | 20                               |      |  |
| 1,1-Dichloroethene        | 42.65  | 5.0                  | 50      | 0                          | 85.3           | 73-124        | 43.96         | 3.02   | 20                               |      |  |
| 1,2,4-Trimethylbenzene    | 46.1   | 5.0                  | 50      | 0                          | 92.2           | 68-123        | 46.84         | 1.61   | 20                               |      |  |
| 1,2-Dibromoethane         | 52.93  | 5.0                  | 50      | 0                          | 106            | 80-120        | 52.72         | 0.389  | 20                               |      |  |
| 1,2-Dichloroethane        | 49.02  | 5.0                  | 50      | 0                          | 98             | 78-120        | 49.7          | 1.38   | 20                               |      |  |
| 1,2-Dichloropropane       | 49.1   | 5.0                  | 50      | 0                          | 98.2           | 80-120        | 49.79         | 1.39   | 20                               |      |  |
| 1,3,5-Trimethylbenzene    | 45.8   | 5.0                  | 50      | 0                          | 91.6           | 80-120        | 46.79         | 2.14   | 20                               |      |  |
| 2-Butanone                | 95.56  | 10                   | 100     | 0                          | 95.6           | 58-132        | 94.91         | 0.674  | 20                               |      |  |
| 2-Hexanone                | 104.8  | 10                   | 100     | 0                          | 105            | 61-130        | 102.6         | 2.18   | 20                               |      |  |
| 4-Isopropyltoluene        | 43.44  | 5.0                  | 50      | 0                          | 86.9           | 79-120        | 45.42         | 4.48   | 20                               |      |  |
| 4-Methyl-2-pentanone      | 104.2  | 10                   | 100     | 0                          | 104            | 65-127        | 101.6         | 2.54   | 20                               |      |  |
| Acetone                   | 96.62  | 10                   | 100     | 0                          | 96.6           | 59-137        | 98.9          | 2.33   | 20                               |      |  |
| Benzene                   | 47.9   | 5.0                  | 50      | 0                          | 95.8           | 73-121        | 48.41         | 1.05   | 20                               |      |  |
| Bromodichloromethane      | 49.45  | 5.0                  | 50      | 0                          | 98.9           | 75-125        | 49.85         | 0.809  | 20                               |      |  |
| Bromoform                 | 53.32  | 5.0                  | 50      | 0                          | 107            | 70-130        | 53.92         | 1.12   | 20                               |      |  |
| Bromomethane              | 41.39  | 5.0                  | 50      | 0                          | 82.8           | 60-145        | 41.18         | 0.515  | 20                               |      |  |
| Carbon disulfide          | 88.23  | 10                   | 100     | 0                          | 88.2           | 68-141        | 88.25         | 0.0274 | 20                               |      |  |
| Carbon tetrachloride      | 45.02  | 5.0                  | 50      | 0                          | 90             | 75-125        | 48.02         | 6.43   | 20                               |      |  |
| Chlorobenzene             | 48.56  | 5.0                  | 50      | 0                          | 97.1           | 80-120        | 48.41         | 0.306  | 20                               |      |  |
| Chloroethane              | 44.22  | 5.0                  | 50      | 0                          | 88.4           | 76-121        | 45.03         | 1.8    | 20                               |      |  |
| Chloroform                | 47.4   | 5.0                  | 50      | 0                          | 94.8           | 70-130        | 46.89         | 1.08   | 20                               |      |  |
| Chloromethane             | 44.58  | 5.0                  | 50      | 0                          | 89.2           | 67-123        | 44.88         | 0.67   | 20                               |      |  |
| cis-1,2-Dichloroethene    | 47.73  | 5.0                  | 50      | 0                          | 95.5           | 78-120        | 46.87         | 1.81   | 20                               |      |  |
| cis-1,3-Dichloropropene   | 51.12  | 5.0                  | 50      | 0                          | 102            | 80-120        | 51.73         | 1.17   | 20                               |      |  |
| Dibromochloromethane      | 51.49  | 5.0                  | 50      | 0                          | 103            | 80-120        | 51.44         | 0.102  | 20                               |      |  |
| Ethylbenzene              | 48.6   | 5.0                  | 50      | 0                          | 97.2           | 80-120        | 49.27         | 1.37   | 20                               |      |  |
| Isopropylbenzene          | 47.38  | 5.0                  | 50      | 0                          | 94.8           | 75-130        | 49.44         | 4.27   | 20                               |      |  |
| m,p-Xylene                | 98.66  | 10                   | 100     | 0                          | 98.7           | 78-121        | 100.6         | 1.97   | 20                               |      |  |
| Methyl tert-butyl ether   | 47.28  | 5.0                  | 50      | 0                          | 94.6           | 73-121        | 47.15         | 0.264  | 20                               |      |  |
| Methylene chloride        | 47.73  | 10                   | 50      | 0                          | 95.5           | 65-133        | 47.85         | 0.25   | 20                               |      |  |
| Naphthalene               | 47.03  | 5.0                  | 50      | 0                          | 94.1           | 65-135        | 48.04         | 2.12   | 20                               |      |  |
| n-Butylbenzene            | 42.73  | 5.0                  | 50      | 0                          | 85.5           | 77-120        | 44.96         | 5.08   | 20                               |      |  |
| n-Propylbenzene           | 45.06  | 5.0                  | 50      | 0                          | 90.1           | 78-120        | 46.51         | 3.17   | 20                               |      |  |
| o-Xylene                  | 49.86  | 5.0                  | 50      | 0                          | 99.7           | 80-120        | 50.27         | 0.819  | 20                               |      |  |
| sec-Butylbenzene          | 42.47  | 5.0                  | 50      | 0                          | 84.9           | 78-120        | 44.87         | 5.5    | 20                               |      |  |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

|                                    |                           |     |     |                       |      |        |       |       |    |  |
|------------------------------------|---------------------------|-----|-----|-----------------------|------|--------|-------|-------|----|--|
| Batch ID: <b>R162292</b>           | Instrument ID <b>VOA7</b> |     |     | Method: <b>SW8260</b> |      |        |       |       |    |  |
| Styrene                            | 51.97                     | 5.0 | 50  | 0                     | 104  | 80-120 | 52.69 | 1.38  | 20 |  |
| Tetrachloroethene                  | 45.72                     | 5.0 | 50  | 0                     | 91.4 | 79-120 | 47.68 | 4.18  | 20 |  |
| Toluene                            | 49.23                     | 5.0 | 50  | 0                     | 98.5 | 80-120 | 49.42 | 0.386 | 20 |  |
| trans-1,2-Dichloroethene           | 45.9                      | 5.0 | 50  | 0                     | 91.8 | 78-120 | 45.71 | 0.42  | 20 |  |
| trans-1,3-Dichloropropene          | 52.56                     | 5.0 | 50  | 0                     | 105  | 80-120 | 53.62 | 2     | 20 |  |
| Trichloroethene                    | 46.27                     | 5.0 | 50  | 0                     | 92.5 | 80-120 | 47.3  | 2.22  | 20 |  |
| Vinyl chloride                     | 43.63                     | 2.0 | 50  | 0                     | 87.3 | 70-127 | 44.49 | 1.93  | 20 |  |
| Xylenes, Total                     | 148.5                     | 15  | 150 | 0                     | 99   | 78-121 | 150.9 | 1.59  | 20 |  |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 42.17                     | 5.0 | 50  | 0                     | 84.3 | 70-125 | 41.8  | 0.881 | 20 |  |
| <i>Surr: 4-Bromofluorobenzene</i>  | 50.24                     | 5.0 | 50  | 0                     | 100  | 72-125 | 49.78 | 0.919 | 20 |  |
| <i>Surr: Dibromofluoromethane</i>  | 44.02                     | 5.0 | 50  | 0                     | 88   | 71-125 | 43.54 | 1.09  | 20 |  |
| <i>Surr: Toluene-d8</i>            | 48.36                     | 5.0 | 50  | 0                     | 96.7 | 75-125 | 47.87 | 1.02  | 20 |  |

The following samples were analyzed in this batch:

14030008-21A

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162305** Instrument ID **ManTech01** Method: **SM2320B (Dissolve)**

**MBLK** Sample ID: **WBLKW1-R162305** Units: **mg/L** Analysis Date: **3/4/2014 10:14 AM**

Client ID: Run ID: **MANTECH01\_140304B** SeqNo: **3552588** Prep Date: DF: **1**

| Analyte                            | Result | PQL  | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|------------------------------------|--------|------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Alkalinity, Bicarbonate (As CaCO3) | 29.21  | 6.00 |         |               |      |               |               |      |           |      |
| Alkalinity, Carbonate (As CaCO3)   | ND     | 6.00 |         |               |      |               |               |      |           |      |
| Alkalinity, Hydroxide (As CaCO3)   | ND     | 6.00 |         |               |      |               |               |      |           |      |
| Alkalinity, Total (As CaCO3)       | 29.21  | 6.00 |         |               |      |               |               |      |           |      |

**MBLK** Sample ID: **WBLKW1-140304-R162305** Units: **mg/L** Analysis Date: **3/4/2014 10:18 AM**

Client ID: Run ID: **MANTECH01\_140304B** SeqNo: **3552589** Prep Date: DF: **1**

| Analyte                            | Result | PQL  | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|------------------------------------|--------|------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Alkalinity, Bicarbonate (As CaCO3) | ND     | 10.0 |         |               |      |               |               |      |           |      |
| Alkalinity, Carbonate (As CaCO3)   | ND     | 10.0 |         |               |      |               |               |      |           |      |
| Alkalinity, Hydroxide (As CaCO3)   | ND     | 10.0 |         |               |      |               |               |      |           |      |
| Alkalinity, Total (As CaCO3)       | ND     | 10.0 |         |               |      |               |               |      |           |      |

**LCS** Sample ID: **WLCSW1-140304-R162305** Units: **mg/L** Analysis Date: **3/4/2014 10:24 AM**

Client ID: Run ID: **MANTECH01\_140304B** SeqNo: **3552590** Prep Date: DF: **1**

| Analyte                      | Result | PQL  | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|------------------------------|--------|------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Alkalinity, Total (As CaCO3) | 875.9  | 10.0 | 1000    | 0             | 87.6 | 80-120        |               |      |           |      |

**DUP** Sample ID: **14030008-02EDUP** Units: **mg/L** Analysis Date: **3/4/2014 10:44 AM**

Client ID: **MW-19** Run ID: **MANTECH01\_140304B** SeqNo: **3552595** Prep Date: DF: **1**

| Analyte                            | Result | PQL  | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|------------------------------------|--------|------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Alkalinity, Bicarbonate (As CaCO3) | 236.6  | 10.0 |         |               |      |               | 239.5         | 1.24 | 0         |      |
| Alkalinity, Carbonate (As CaCO3)   | ND     | 10.0 |         |               |      |               | 0             | 0    | 0         |      |
| Alkalinity, Hydroxide (As CaCO3)   | ND     | 10.0 |         |               |      |               | 0             | 0    | 0         |      |
| Alkalinity, Total (As CaCO3)       | 236.6  | 10.0 |         |               |      |               | 239.5         | 1.24 | 20        |      |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14030008-01E | 14030008-02E | 14030008-03E | 14030008-04E |
| 14030008-05E | 14030008-06E | 14030008-07E | 14030008-08E |
| 14030008-09E | 14030008-10E | 14030008-11E | 14030008-12E |
| 14030008-13E | 14030008-14E | 14030008-15E | 14030008-16E |
| 14030008-17E | 14030008-18E | 14030008-19E | 14030008-20E |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162308** Instrument ID **ManTech01** Method: **SM4500H+ B (Dissolve)**

|            |                                  |       |         |               |                        |               |               |                                         |           |      |
|------------|----------------------------------|-------|---------|---------------|------------------------|---------------|---------------|-----------------------------------------|-----------|------|
| <b>LCS</b> | Sample ID: <b>LCS-PH-R162308</b> |       |         |               | Units: <b>pH Units</b> |               |               | Analysis Date: <b>3/4/2014 10:27 AM</b> |           |      |
| Client ID: | Run ID: <b>MANTECH01_140304C</b> |       |         |               | SeqNo: <b>3552629</b>  |               |               | Prep Date: DF: <b>1</b>                 |           |      |
| Analyte    | Result                           | PQL   | SPK Val | SPK Ref Value | %REC                   | Control Limit | RPD Ref Value | %RPD                                    | RPD Limit | Qual |
| pH         | 6.23                             | 0.100 | 6       | 0             | 104                    | 95-105        |               |                                         |           |      |

|                         |                                   |       |         |               |                        |               |               |                                         |           |      |
|-------------------------|-----------------------------------|-------|---------|---------------|------------------------|---------------|---------------|-----------------------------------------|-----------|------|
| <b>DUP</b>              | Sample ID: <b>14030008-02EDUP</b> |       |         |               | Units: <b>pH Units</b> |               |               | Analysis Date: <b>3/4/2014 10:44 AM</b> |           |      |
| Client ID: <b>MW-19</b> | Run ID: <b>MANTECH01_140304C</b>  |       |         |               | SeqNo: <b>3552633</b>  |               |               | Prep Date: DF: <b>1</b>                 |           |      |
| Analyte                 | Result                            | PQL   | SPK Val | SPK Ref Value | %REC                   | Control Limit | RPD Ref Value | %RPD                                    | RPD Limit | Qual |
| pH                      | 6.98                              | 0.100 |         |               |                        |               | 6.75          | 3.35                                    | 10        | H    |

|                           |                                   |       |         |               |                        |               |               |                                         |           |      |
|---------------------------|-----------------------------------|-------|---------|---------------|------------------------|---------------|---------------|-----------------------------------------|-----------|------|
| <b>DUP</b>                | Sample ID: <b>14030008-20EDUP</b> |       |         |               | Units: <b>pH Units</b> |               |               | Analysis Date: <b>3/4/2014 12:43 PM</b> |           |      |
| Client ID: <b>WW-East</b> | Run ID: <b>MANTECH01_140304C</b>  |       |         |               | SeqNo: <b>3552658</b>  |               |               | Prep Date: DF: <b>1</b>                 |           |      |
| Analyte                   | Result                            | PQL   | SPK Val | SPK Ref Value | %REC                   | Control Limit | RPD Ref Value | %RPD                                    | RPD Limit | Qual |
| pH                        | 6.66                              | 0.100 |         |               |                        |               | 7.17          | 7.38                                    | 10        | H    |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14030008-01E | 14030008-02E | 14030008-03E | 14030008-04E |
| 14030008-05E | 14030008-06E | 14030008-07E | 14030008-08E |
| 14030008-09E | 14030008-10E | 14030008-11E | 14030008-12E |
| 14030008-13E | 14030008-14E | 14030008-15E | 14030008-16E |
| 14030008-17E | 14030008-18E | 14030008-19E | 14030008-20E |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162309** Instrument ID **ManTech01** Method: **M2510 B (Dissolve)**

|                       |                                  |      |         |               |                        |               |                                         |      |              |      |
|-----------------------|----------------------------------|------|---------|---------------|------------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>MBLK</b>           | Sample ID: <b>WBLKW1-R162309</b> |      |         |               | Units: <b>µmhos/cm</b> |               | Analysis Date: <b>3/4/2014 10:14 AM</b> |      |              |      |
| Client ID:            | Run ID: <b>MANTECH01_140304D</b> |      |         |               | SeqNo: <b>3552664</b>  |               | Prep Date:                              |      | DF: <b>1</b> |      |
| Analyte               | Result                           | PQL  | SPK Val | SPK Ref Value | %REC                   | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Specific Conductivity | ND                               | 5.00 |         |               |                        |               |                                         |      |              |      |

|                       |                                         |      |         |               |                        |               |                                         |      |              |      |
|-----------------------|-----------------------------------------|------|---------|---------------|------------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>MBLK</b>           | Sample ID: <b>WBLKW1-140304-R162309</b> |      |         |               | Units: <b>µmhos/cm</b> |               | Analysis Date: <b>3/4/2014 10:18 AM</b> |      |              |      |
| Client ID:            | Run ID: <b>MANTECH01_140304D</b>        |      |         |               | SeqNo: <b>3552665</b>  |               | Prep Date:                              |      | DF: <b>1</b> |      |
| Analyte               | Result                                  | PQL  | SPK Val | SPK Ref Value | %REC                   | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Specific Conductivity | ND                                      | 5.00 |         |               |                        |               |                                         |      |              |      |

|                       |                                    |      |         |               |                        |               |                                         |      |              |      |
|-----------------------|------------------------------------|------|---------|---------------|------------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>LCS</b>            | Sample ID: <b>LCS-COND-R162309</b> |      |         |               | Units: <b>µmhos/cm</b> |               | Analysis Date: <b>3/4/2014 10:28 AM</b> |      |              |      |
| Client ID:            | Run ID: <b>MANTECH01_140304D</b>   |      |         |               | SeqNo: <b>3552668</b>  |               | Prep Date:                              |      | DF: <b>1</b> |      |
| Analyte               | Result                             | PQL  | SPK Val | SPK Ref Value | %REC                   | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Specific Conductivity | 1690                               | 5.00 | 1413    |               | 0                      | 120           | 80-120                                  |      |              |      |

|                         |                                   |      |         |               |                        |               |                                         |        |              |      |
|-------------------------|-----------------------------------|------|---------|---------------|------------------------|---------------|-----------------------------------------|--------|--------------|------|
| <b>DUP</b>              | Sample ID: <b>14030008-02EDUP</b> |      |         |               | Units: <b>µmhos/cm</b> |               | Analysis Date: <b>3/4/2014 10:44 AM</b> |        |              |      |
| Client ID: <b>MW-19</b> | Run ID: <b>MANTECH01_140304D</b>  |      |         |               | SeqNo: <b>3552671</b>  |               | Prep Date:                              |        | DF: <b>1</b> |      |
| Analyte                 | Result                            | PQL  | SPK Val | SPK Ref Value | %REC                   | Control Limit | RPD Ref Value                           | %RPD   | RPD Limit    | Qual |
| Specific Conductivity   | 1403                              | 5.00 |         |               |                        |               | 1404                                    | 0.0762 | 20           |      |

|                           |                                   |      |         |               |                        |               |                                         |      |              |      |
|---------------------------|-----------------------------------|------|---------|---------------|------------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>DUP</b>                | Sample ID: <b>14030008-20EDUP</b> |      |         |               | Units: <b>µmhos/cm</b> |               | Analysis Date: <b>3/4/2014 12:43 PM</b> |      |              |      |
| Client ID: <b>WW-East</b> | Run ID: <b>MANTECH01_140304D</b>  |      |         |               | SeqNo: <b>3552696</b>  |               | Prep Date:                              |      | DF: <b>1</b> |      |
| Analyte                   | Result                            | PQL  | SPK Val | SPK Ref Value | %REC                   | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Specific Conductivity     | 978.6                             | 5.00 |         |               |                        |               | 978.6                                   | 0    | 20           |      |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14030008-01E | 14030008-02E | 14030008-03E | 14030008-04E |
| 14030008-05E | 14030008-06E | 14030008-07E | 14030008-08E |
| 14030008-09E | 14030008-10E | 14030008-11E | 14030008-12E |
| 14030008-13E | 14030008-14E | 14030008-15E | 14030008-16E |
| 14030008-17E | 14030008-18E | 14030008-19E | 14030008-20E |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162437** Instrument ID **Balance1** Method: **M2540C** **(Dissolve)**

**MBLK** Sample ID: **WBLK-030514-R162437** Units: **mg/L** Analysis Date: **3/5/2014 10:40 AM**

Client ID: Run ID: **BALANCE1\_140305D** SeqNo: **3555243** Prep Date: DF: **1**

| Analyte                              | Result | PQL  | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|--------------------------------------|--------|------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Total Dissolved Solids (Residue, Fil | ND     | 10.0 |         |               |      |               |               |      |           |      |

**LCS** Sample ID: **WLCS-030514-R162437** Units: **mg/L** Analysis Date: **3/5/2014 10:40 AM**

Client ID: Run ID: **BALANCE1\_140305D** SeqNo: **3555244** Prep Date: DF: **1**

| Analyte                              | Result | PQL  | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|--------------------------------------|--------|------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Total Dissolved Solids (Residue, Fil | 1028   | 10.0 | 1000    | 0             | 103  | 85-115        |               |      |           |      |

**DUP** Sample ID: **14021208-01FDUP** Units: **mg/L** Analysis Date: **3/5/2014 10:40 AM**

Client ID: Run ID: **BALANCE1\_140305D** SeqNo: **3555225** Prep Date: DF: **1**

| Analyte                              | Result | PQL  | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD  | RPD Limit | Qual |
|--------------------------------------|--------|------|---------|---------------|------|---------------|---------------|-------|-----------|------|
| Total Dissolved Solids (Residue, Fil | 326    | 10.0 |         |               |      |               | 328           | 0.612 | 10        |      |

**DUP** Sample ID: **14030008-18EDUP** Units: **mg/L** Analysis Date: **3/5/2014 10:40 AM**

Client ID: **MW-17R** Run ID: **BALANCE1\_140305D** SeqNo: **3555241** Prep Date: DF: **1**

| Analyte                              | Result | PQL  | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|--------------------------------------|--------|------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Total Dissolved Solids (Residue, Fil | 882    | 10.0 |         |               |      |               | 904           | 2.46 | 10        |      |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14030008-01E | 14030008-02E | 14030008-03E | 14030008-04E |
| 14030008-05E | 14030008-06E | 14030008-07E | 14030008-08E |
| 14030008-09E | 14030008-10E | 14030008-14E | 14030008-15E |
| 14030008-16E | 14030008-17E | 14030008-18E |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162534** Instrument ID **Balance1** Method: **M2540C** **(Dissolve)**

**MBLK** Sample ID: **WBLK-030614-R162534** Units: **mg/L** Analysis Date: **3/6/2014 04:45 PM**

Client ID: Run ID: **BALANCE1\_140306F** SeqNo: **3557565** Prep Date: DF: **1**

| Analyte                              | Result | PQL  | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|--------------------------------------|--------|------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Total Dissolved Solids (Residue, Fil | ND     | 10.0 |         |               |      |               |               |      |           |      |

**LCS** Sample ID: **WLCS-030614-R162534** Units: **mg/L** Analysis Date: **3/6/2014 04:45 PM**

Client ID: Run ID: **BALANCE1\_140306F** SeqNo: **3557566** Prep Date: DF: **1**

| Analyte                              | Result | PQL  | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|--------------------------------------|--------|------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Total Dissolved Solids (Residue, Fil | 1054   | 10.0 | 1000    | 0             | 105  | 85-115        |               |      |           |      |

**DUP** Sample ID: **14030008-11EDUP** Units: **mg/L** Analysis Date: **3/6/2014 04:45 PM**

Client ID: **MW-29** Run ID: **BALANCE1\_140306F** SeqNo: **3557556** Prep Date: DF: **1**

| Analyte                              | Result | PQL  | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|--------------------------------------|--------|------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Total Dissolved Solids (Residue, Fil | 682    | 10.0 |         |               |      |               | 660           | 3.28 | 10        |      |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14030008-11E | 14030008-12E | 14030008-13E | 14030008-19E |
| 14030008-20E |              |              |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162903** Instrument ID **ICS2100** Method: **E300**

|             |                                  |       |         |               |                       |               |                                          |      |              |      |
|-------------|----------------------------------|-------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| <b>MBLK</b> | Sample ID: <b>WBLKW3-R162903</b> |       |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/13/2014 09:12 PM</b> |      |              |      |
| Client ID:  | Run ID: <b>ICS2100_140314A</b>   |       |         |               | SeqNo: <b>3566093</b> |               | Prep Date:                               |      | DF: <b>1</b> |      |
| Analyte     | Result                           | PQL   | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Chloride    | ND                               | 0.500 |         |               |                       |               |                                          |      |              |      |
| Fluoride    | ND                               | 0.100 |         |               |                       |               |                                          |      |              |      |
| Sulfate     | ND                               | 0.500 |         |               |                       |               |                                          |      |              |      |

|            |                                  |       |         |               |                       |               |                                          |      |              |      |
|------------|----------------------------------|-------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| <b>LCS</b> | Sample ID: <b>WLCSW3-R162903</b> |       |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/13/2014 09:26 PM</b> |      |              |      |
| Client ID: | Run ID: <b>ICS2100_140314A</b>   |       |         |               | SeqNo: <b>3566094</b> |               | Prep Date:                               |      | DF: <b>1</b> |      |
| Analyte    | Result                           | PQL   | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Chloride   | 20.64                            | 0.500 | 20      | 0             | 103                   | 90-110        |                                          |      |              |      |
| Fluoride   | 3.679                            | 0.100 | 4       | 0             | 92                    | 90-110        |                                          |      |              |      |
| Sulfate    | 19.48                            | 0.500 | 20      | 0             | 97.4                  | 90-110        |                                          |      |              |      |

|                         |                                  |       |         |               |                       |               |                                          |      |              |      |
|-------------------------|----------------------------------|-------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| <b>MS</b>               | Sample ID: <b>14030008-11EMS</b> |       |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/14/2014 05:07 AM</b> |      |              |      |
| Client ID: <b>MW-29</b> | Run ID: <b>ICS2100_140314A</b>   |       |         |               | SeqNo: <b>3566108</b> |               | Prep Date:                               |      | DF: <b>1</b> |      |
| Analyte                 | Result                           | PQL   | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Chloride                | 156                              | 0.500 | 10      | 149.9         | 60.8                  | 80-120        |                                          |      |              | SEO  |
| Fluoride                | 2.382                            | 0.100 | 2       | 0.811         | 78.6                  | 80-120        |                                          |      |              | S    |
| Sulfate                 | 81.25                            | 0.500 | 10      | 74.44         | 68.1                  | 80-120        |                                          |      |              | SO   |

|                         |                                   |       |         |               |                       |               |                                          |      |              |      |
|-------------------------|-----------------------------------|-------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| <b>MSD</b>              | Sample ID: <b>14030008-11EMSD</b> |       |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/14/2014 05:21 AM</b> |      |              |      |
| Client ID: <b>MW-29</b> | Run ID: <b>ICS2100_140314A</b>    |       |         |               | SeqNo: <b>3566109</b> |               | Prep Date:                               |      | DF: <b>1</b> |      |
| Analyte                 | Result                            | PQL   | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Chloride                | 159                               | 0.500 | 10      | 149.9         | 91.3                  | 80-120        | 156                                      | 1.93 | 20           | EO   |
| Fluoride                | 2.647                             | 0.100 | 2       | 0.811         | 91.8                  | 80-120        | 2.382                                    | 10.5 | 20           |      |
| Sulfate                 | 82.8                              | 0.500 | 10      | 74.44         | 83.6                  | 80-120        | 81.25                                    | 1.89 | 20           | O    |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14030008-01E | 14030008-02E | 14030008-03E | 14030008-04E |
| 14030008-05E | 14030008-06E | 14030008-07E | 14030008-08E |
| 14030008-09E | 14030008-10E | 14030008-11E | 14030008-12E |
| 14030008-13E | 14030008-14E | 14030008-15E | 14030008-16E |
| 14030008-17E | 14030008-18E | 14030008-19E | 14030008-20E |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030008  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162945** Instrument ID **ICS2100** Method: **E300**

|                          |                                  |       |         |                       |      |               |                                          |      |              |      |
|--------------------------|----------------------------------|-------|---------|-----------------------|------|---------------|------------------------------------------|------|--------------|------|
| <b>MBLK</b>              | Sample ID: <b>WBLKW2-R162945</b> |       |         | Units: <b>mg/L</b>    |      |               | Analysis Date: <b>3/16/2014 03:27 PM</b> |      |              |      |
| Client ID:               | Run ID: <b>ICS2100_140316A</b>   |       |         | SeqNo: <b>3566984</b> |      |               | Prep Date:                               |      | DF: <b>1</b> |      |
| Analyte                  | Result                           | PQL   | SPK Val | SPK Ref Value         | %REC | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Nitrogen, Nitrate (As N) | ND                               | 0.100 |         |                       |      |               |                                          |      |              |      |

|                          |                                  |       |         |                       |      |               |                                          |      |              |      |
|--------------------------|----------------------------------|-------|---------|-----------------------|------|---------------|------------------------------------------|------|--------------|------|
| <b>LCS</b>               | Sample ID: <b>WLCSW2-R162945</b> |       |         | Units: <b>mg/L</b>    |      |               | Analysis Date: <b>3/16/2014 03:52 PM</b> |      |              |      |
| Client ID:               | Run ID: <b>ICS2100_140316A</b>   |       |         | SeqNo: <b>3566985</b> |      |               | Prep Date:                               |      | DF: <b>1</b> |      |
| Analyte                  | Result                           | PQL   | SPK Val | SPK Ref Value         | %REC | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Nitrogen, Nitrate (As N) | 4.121                            | 0.100 | 4       | 0                     | 103  | 90-110        |                                          |      |              |      |

|                          |                                  |       |         |                       |      |               |                                          |      |              |      |
|--------------------------|----------------------------------|-------|---------|-----------------------|------|---------------|------------------------------------------|------|--------------|------|
| <b>MS</b>                | Sample ID: <b>14030008-11BMS</b> |       |         | Units: <b>mg/L</b>    |      |               | Analysis Date: <b>3/16/2014 09:54 PM</b> |      |              |      |
| Client ID: <b>MW-29</b>  | Run ID: <b>ICS2100_140316A</b>   |       |         | SeqNo: <b>3566999</b> |      |               | Prep Date:                               |      | DF: <b>5</b> |      |
| Analyte                  | Result                           | PQL   | SPK Val | SPK Ref Value         | %REC | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Nitrogen, Nitrate (As N) | 13.96                            | 0.500 | 10      | 3.225                 | 107  | 80-120        |                                          |      |              |      |

|                          |                                   |       |         |                       |      |               |                                          |       |              |      |
|--------------------------|-----------------------------------|-------|---------|-----------------------|------|---------------|------------------------------------------|-------|--------------|------|
| <b>MSD</b>               | Sample ID: <b>14030008-11BMSD</b> |       |         | Units: <b>mg/L</b>    |      |               | Analysis Date: <b>3/16/2014 10:20 PM</b> |       |              |      |
| Client ID: <b>MW-29</b>  | Run ID: <b>ICS2100_140316A</b>    |       |         | SeqNo: <b>3567000</b> |      |               | Prep Date:                               |       | DF: <b>5</b> |      |
| Analyte                  | Result                            | PQL   | SPK Val | SPK Ref Value         | %REC | Control Limit | RPD Ref Value                            | %RPD  | RPD Limit    | Qual |
| Nitrogen, Nitrate (As N) | 14                                | 0.500 | 10      | 3.225                 | 108  | 80-120        | 13.96                                    | 0.272 | 20           |      |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14030008-01B | 14030008-02B | 14030008-03B | 14030008-04B |
| 14030008-05B | 14030008-06B | 14030008-07B | 14030008-08B |
| 14030008-09B | 14030008-10B | 14030008-11B | 14030008-12B |
| 14030008-13B | 14030008-14B | 14030008-15B | 14030008-16B |
| 14030008-17B | 14030008-18B | 14030008-19B | 14030008-20B |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**WorkOrder:** 14030008

**QUALIFIERS,  
ACRONYMS, UNITS**

| <b><u>Qualifier</u></b> | <b><u>Description</u></b>                                                 |
|-------------------------|---------------------------------------------------------------------------|
| *                       | Value exceeds Regulatory Limit                                            |
| a                       | Not accredited                                                            |
| B                       | Analyte detected in the associated Method Blank above the Reporting Limit |
| E                       | Value above quantitation range                                            |
| H                       | Analyzed outside of Holding Time                                          |
| J                       | Analyte detected below quantitation limit                                 |
| M                       | Manually integrated, see raw data for justification                       |
| n                       | Not offered for accreditation                                             |
| ND                      | Not Detected at the Reporting Limit                                       |
| O                       | Sample amount is > 4 times amount spiked                                  |
| P                       | Dual Column results percent difference > 40%                              |
| R                       | RPD above laboratory control limit                                        |
| S                       | Spike Recovery outside laboratory control limits                          |
| U                       | Analyzed but not detected above the MDL                                   |

| <b><u>Acronym</u></b> | <b><u>Description</u></b>           |
|-----------------------|-------------------------------------|
| DCS                   | Detectability Check Study           |
| DUP                   | Method Duplicate                    |
| LCS                   | Laboratory Control Sample           |
| LCSD                  | Laboratory Control Sample Duplicate |
| MBLK                  | Method Blank                        |
| MDL                   | Method Detection Limit              |
| MQL                   | Method Quantitation Limit           |
| MS                    | Matrix Spike                        |
| MSD                   | Matrix Spike Duplicate              |
| PDS                   | Post Digestion Spike                |
| PQL                   | Practical Quantitation Limit        |
| SD                    | Serial Dilution                     |
| SDL                   | Sample Detection Limit              |
| TRRP                  | Texas Risk Reduction Program        |

| <b><u>Units Reported</u></b> | <b><u>Description</u></b> |
|------------------------------|---------------------------|
| µg/L                         | Micrograms per Liter      |
| µmhos/cm                     | micro mho per cm          |
| mg/L                         | Milligrams per Liter      |
| pH Units                     |                           |

## Sample Receipt Checklist

Client Name: **NAVAJO REFINING**

Date/Time Received: **01-Mar-14 09:45**

Work Order: **14030008**

Received by: **PMG**

Checklist completed by Parash M. Ciga  
eSignature

03-Mar-14  
Date

Reviewed by: Sania West  
eSignature

05-Mar-14  
Date

Matrices: Groundwater/Water

Carrier name: FedEx

|                                                         |                                                                                                                                                                                                                                            |                                        |                                                 |
|---------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|-------------------------------------------------|
| Shipping container/cooler in good condition?            | Yes <input checked="" type="checkbox"/>                                                                                                                                                                                                    | No <input type="checkbox"/>            | Not Present <input type="checkbox"/>            |
| Custody seals intact on shipping container/cooler?      | Yes <input checked="" type="checkbox"/>                                                                                                                                                                                                    | No <input type="checkbox"/>            | Not Present <input type="checkbox"/>            |
| Custody seals intact on sample bottles?                 | Yes <input type="checkbox"/>                                                                                                                                                                                                               | No <input type="checkbox"/>            | Not Present <input checked="" type="checkbox"/> |
| Chain of custody present?                               | Yes <input checked="" type="checkbox"/>                                                                                                                                                                                                    | No <input type="checkbox"/>            |                                                 |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/>                                                                                                                                                                                                    | No <input type="checkbox"/>            |                                                 |
| Chain of custody agrees with sample labels?             | Yes <input checked="" type="checkbox"/>                                                                                                                                                                                                    | No <input type="checkbox"/>            |                                                 |
| Samples in proper container/bottle?                     | Yes <input checked="" type="checkbox"/>                                                                                                                                                                                                    | No <input type="checkbox"/>            |                                                 |
| Sample containers intact?                               | Yes <input checked="" type="checkbox"/>                                                                                                                                                                                                    | No <input type="checkbox"/>            |                                                 |
| Sufficient sample volume for indicated test?            | Yes <input checked="" type="checkbox"/>                                                                                                                                                                                                    | No <input type="checkbox"/>            |                                                 |
| All samples received within holding time?               | Yes <input checked="" type="checkbox"/>                                                                                                                                                                                                    | No <input type="checkbox"/>            |                                                 |
| Container/Temp Blank temperature in compliance?         | Yes <input checked="" type="checkbox"/>                                                                                                                                                                                                    | No <input type="checkbox"/>            |                                                 |
| Temperature(s)/Thermometer(s):                          | <u>1.2c/1.2c,1.6c/1.6c,0.9c/0.9c,1.3c/1.3c,0.7c/0.7c,1.5c/1.5c,1.2c/1.2c</u>                                                                                                                                                               |                                        | <u>IR1</u>                                      |
| Cooler(s)/Kit(s):                                       | <u>2782,7177,7171,3072,5646,3050,5615,3319,4332</u>                                                                                                                                                                                        |                                        |                                                 |
| Date/Time sample(s) sent to storage:                    | <u>3/3/14 11:30</u>                                                                                                                                                                                                                        |                                        |                                                 |
| Water - VOA vials have zero headspace?                  | Yes <input checked="" type="checkbox"/>                                                                                                                                                                                                    | No <input type="checkbox"/>            | No VOA vials submitted <input type="checkbox"/> |
| Water - pH acceptable upon receipt?                     | Yes <input checked="" type="checkbox"/>                                                                                                                                                                                                    | No <input type="checkbox"/>            | N/A <input type="checkbox"/>                    |
| pH adjusted?                                            | Yes <input type="checkbox"/>                                                                                                                                                                                                               | No <input checked="" type="checkbox"/> | N/A <input type="checkbox"/>                    |
| pH adjusted by:                                         | <u>-</u>                                                                                                                                                                                                                                   |                                        |                                                 |
| Login Notes:                                            | <u>2.1c/2.1c, 0.8c/0.8c C/U. 2 x Trip Blanks received - Logged in both. Sample - MW-27 - 1 x Vials broken at lab when labelling - Sample MW-29 1 x Amber broken at lab during transfer to Extractions. Sufficient sample for analysis.</u> |                                        |                                                 |

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



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# Chain of Custody Form

Page 1 of 3

COC ID: 101379

ALS Project Manager:

# 14030008

NAVAJO REFINING: Navajo Refining Company

Project: Navajo Lea Refinery Semi-Annual



| Customer Information |                             |                 |                                    | Project Information |                                        |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------|-----------------|------------------------------------|---------------------|----------------------------------------|--|--|--|--|--|--|--|--|--|--|--|
| Purchase Order       | 171658                      | Project Name    | Lovington Lea Refining Semi-Annual | A                   | VOC (8260) Select                      |  |  |  |  |  |  |  |  |  |  |  |
| Work Order           |                             | Project Number  |                                    | B                   | SVOC LL (8270) TCL+1-Methylnaphthalene |  |  |  |  |  |  |  |  |  |  |  |
| Company Name         | Navajo Refining Company     | Bill To Company | Navajo Refining Company            | C                   | Total Metals & Hg (6020/7000)          |  |  |  |  |  |  |  |  |  |  |  |
| Send Report To       | Robert Combs                | Invoice Attn    | Robert Combs                       | D                   | Dissolved Metals (6020/7000) Select    |  |  |  |  |  |  |  |  |  |  |  |
| Address              | PO Box 159<br>501 East Main | Address         | PO Box 159<br>501 East Main        | E                   | Anions (300) Cl, F, SO4                |  |  |  |  |  |  |  |  |  |  |  |
| City/State/Zip       | Artesia, NM 88211           | City/State/Zip  | Artesia, NM 88211                  | F                   | Alkalinity                             |  |  |  |  |  |  |  |  |  |  |  |
| Phone                | (575) 748-6733              | Phone           | (575) 748-6733                     | G                   | pH                                     |  |  |  |  |  |  |  |  |  |  |  |
| Fax                  | (575) 748-5421              | Fax             | (575) 748-5421                     | H                   | Specific Conductance                   |  |  |  |  |  |  |  |  |  |  |  |
| e-Mail Address       | jspectre@resolutions.com    | e-Mail Address  | Robert.Combs@lovelyfiner.com       | I                   | TDS                                    |  |  |  |  |  |  |  |  |  |  |  |
|                      |                             |                 |                                    | J                   | Nitrate/Nitrite (300)                  |  |  |  |  |  |  |  |  |  |  |  |

| No. | Sample Description | Date    | Time | Matrix | Pres.   | # Bottles | A | B | C | D | E | F | G | H | I | J | Hold |
|-----|--------------------|---------|------|--------|---------|-----------|---|---|---|---|---|---|---|---|---|---|------|
| 1   | MW - 18            | 2-26-14 | 1535 | GW     | 1,2,3,8 | 9         | X | X | X | X | X | X | X | X | X | X |      |
| 2   | MW - 19            | 2-26-14 | 1315 | GW     | 1,2,3,8 | 9         | X | X | X | X | X | X | X | X | X | X |      |
| 3   | MW - 25            | 2-26-14 | 1712 | GW     | 1,2,3,8 | 9         | X | X | X | X | X | X | X | X | X | X |      |
| 4   | Dup - 3            | 2-26-14 | 1315 | GW     | 1,2,3,8 | 9         | X | X | X | X | X | X | X | X | X | X |      |
| 5   | Dup - 4            | 2-26-14 | 1712 | GW     | 1,2,3,8 | 9         | X | X | X | X | X | X | X | X | X | X |      |
| 6   | MW - 12R           | 2-27-14 | 833  | GW     | 1,2,3,8 | 9         | X | X | X | X | X | X | X | X | X | X |      |
| 7   | MW - 7             | 2-27-14 | 1115 | GW     | 1,2,3,8 | 9         | X | X | X | X | X | X | X | X | X | X |      |
| 8   | RW - 1             | 2-27-14 | 1310 | GW     | 1,2,3,8 | 9         | X | X | X | X | X | X | X | X | X | X |      |
| 9   | MW - 1             | 2-27-14 | 1420 | GW     | 1,2,3,8 | 9         | X | X | X | X | X | X | X | X | X | X |      |
| 10  | MW - 6             | 2-27-14 | 1605 | GW     | 1,2,3,8 | 9         | X | X | X | X | X | X | X | X | X | X |      |

|                                                                                       |  |                 |       |                                                                                                                      |  |                                                                   |  |                   |  |                                                                                             |  |  |  |
|---------------------------------------------------------------------------------------|--|-----------------|-------|----------------------------------------------------------------------------------------------------------------------|--|-------------------------------------------------------------------|--|-------------------|--|---------------------------------------------------------------------------------------------|--|--|--|
| Sampler(s) Please Print & Sign                                                        |  | Shipment Method |       | Required Turnaround Time: (Check Box)                                                                                |  |                                                                   |  | Results Due Date: |  |                                                                                             |  |  |  |
| John Allen                                                                            |  | Fed Ex          |       | <input checked="" type="checkbox"/> Std 10 WK Days <input type="checkbox"/> 5 WK Days <input type="checkbox"/> Other |  |                                                                   |  |                   |  |                                                                                             |  |  |  |
| Relinquished by:                                                                      |  | Date:           | Time: | Received by:                                                                                                         |  | Notes: 10 Day TAT. ALS Project: Navajo - Lea Refinery Semi-Annual |  |                   |  |                                                                                             |  |  |  |
| John Allen                                                                            |  | 2-28-14         | 1400  | 3/11/14 0945                                                                                                         |  |                                                                   |  |                   |  |                                                                                             |  |  |  |
| Relinquished by:                                                                      |  | Date:           | Time: | Checked by (Laboratory):                                                                                             |  | Cooler ID                                                         |  | Cooler Temp.      |  | QC Package: (Check One Box Below)                                                           |  |  |  |
|                                                                                       |  |                 |       |                                                                                                                      |  |                                                                   |  |                   |  | <input checked="" type="checkbox"/> Level II Std QC <input type="checkbox"/> TRRP CheckList |  |  |  |
|                                                                                       |  |                 |       |                                                                                                                      |  |                                                                   |  |                   |  | <input type="checkbox"/> Level III Std QC/Raw Data <input type="checkbox"/> TRRP Level IV   |  |  |  |
|                                                                                       |  |                 |       |                                                                                                                      |  |                                                                   |  |                   |  | <input type="checkbox"/> Level IV SW846/CLP                                                 |  |  |  |
|                                                                                       |  |                 |       |                                                                                                                      |  |                                                                   |  |                   |  | <input type="checkbox"/> Other / EDD                                                        |  |  |  |
| Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O8 6-NaHSO4 7-Other 8-4°C 9-5035 |  |                 |       |                                                                                                                      |  |                                                                   |  |                   |  |                                                                                             |  |  |  |

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.  
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## Chain of Custody Form

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York, PA  
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**Environmental**

| Customer Information                                                                                                                                                         |                             | Project Information |                                    | Parameter/Method Request for Analysis                                                                                                                           |                                        |                                                                                                                                                                                                                                                                                 |   |                   |   |   |   |   |   |   |   |   |        |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------------------|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|-------------------|---|---|---|---|---|---|---|---|--------|--|
| Purchase Order                                                                                                                                                               | 171658                      | Project Name        | Lovington Lea Refining Semi-Annual | A                                                                                                                                                               | VOC (8260) Select                      |                                                                                                                                                                                                                                                                                 |   |                   |   |   |   |   |   |   |   |   |        |  |
| Work Order                                                                                                                                                                   |                             | Project Number      |                                    | B                                                                                                                                                               | SVOC LL (8270) TCL+1-Methylnaphthalene |                                                                                                                                                                                                                                                                                 |   |                   |   |   |   |   |   |   |   |   |        |  |
| Company Name                                                                                                                                                                 | Navajo Refining Company     | Bill To Company     | Navajo Refining Company            | C                                                                                                                                                               | Total Metals & Hg (6020/7000)          |                                                                                                                                                                                                                                                                                 |   |                   |   |   |   |   |   |   |   |   |        |  |
| Send Report To                                                                                                                                                               | Robert Combs                | Invoice Attn        | Robert Combs                       | D                                                                                                                                                               | Dissolved Metals (6020/7000) Select    |                                                                                                                                                                                                                                                                                 |   |                   |   |   |   |   |   |   |   |   |        |  |
| Address                                                                                                                                                                      | PO Box 159<br>501 East Main | Address             | PO Box 159<br>501 East Main        | E                                                                                                                                                               | Anions (300) Cl, F, SO4                |                                                                                                                                                                                                                                                                                 |   |                   |   |   |   |   |   |   |   |   |        |  |
| City/State/Zip                                                                                                                                                               | Artesia, NM 88211           | City/State/Zip      | Artesia, NM 88211                  | F                                                                                                                                                               | Alkalinity                             |                                                                                                                                                                                                                                                                                 |   |                   |   |   |   |   |   |   |   |   |        |  |
| Phone                                                                                                                                                                        | (575) 748-6733              | Phone               | (575) 748-6733                     | G                                                                                                                                                               | pH                                     |                                                                                                                                                                                                                                                                                 |   |                   |   |   |   |   |   |   |   |   |        |  |
| Fax                                                                                                                                                                          | (575) 748-5421              | Fax                 | (575) 748-5421                     | H                                                                                                                                                               | Specific Conductance                   |                                                                                                                                                                                                                                                                                 |   |                   |   |   |   |   |   |   |   |   |        |  |
| e-Mail Address                                                                                                                                                               | jspeer@trcsolutions.com     | e-Mail Address      | Robert.Combs@cherryflor.com        | I                                                                                                                                                               | TDS                                    |                                                                                                                                                                                                                                                                                 |   |                   |   |   |   |   |   |   |   |   |        |  |
|                                                                                                                                                                              |                             |                     |                                    | J                                                                                                                                                               | Nitrate/Nitrite (300)                  |                                                                                                                                                                                                                                                                                 |   |                   |   |   |   |   |   |   |   |   |        |  |
| No.                                                                                                                                                                          | Sample Description          | Date                | Time                               | Matrix                                                                                                                                                          | Pres.                                  | # Bottles                                                                                                                                                                                                                                                                       | A | B                 | C | D | E | F | G | H | I | J | Hold   |  |
| 1                                                                                                                                                                            | MW-29                       | 2-27-14             | 1805                               | GW                                                                                                                                                              | 1,2,3,8                                | 9                                                                                                                                                                                                                                                                               | X | X                 | X | X | X | X | X | X | X | X | MS/MSD |  |
| 2                                                                                                                                                                            | Dup-2                       | 2-27-14             | 1805                               | GW                                                                                                                                                              | 1,2,3,8                                | 9                                                                                                                                                                                                                                                                               | X | X                 | X | X | X | X | X | X | X | X |        |  |
| 3                                                                                                                                                                            | MW-30                       | 2-27-14             | 1950                               | GW                                                                                                                                                              | 1,2,3,8                                | 9                                                                                                                                                                                                                                                                               | X | X                 | X | X | X | X | X | X | X | X |        |  |
| 4                                                                                                                                                                            | MW-24                       | 2-27-14             | 1059                               | GW                                                                                                                                                              | 1,2,3,8                                | 9                                                                                                                                                                                                                                                                               | X | X                 | X | X | X | X | X | X | X | X |        |  |
| 5                                                                                                                                                                            | MW-13                       | 2-27-14             | 1328                               | GW                                                                                                                                                              | 1,2,3,8                                | 9                                                                                                                                                                                                                                                                               | X | X                 | X | X | X | X | X | X | X | X |        |  |
| 6                                                                                                                                                                            | MW-27                       | 2-27-14             | 1220                               | GW                                                                                                                                                              | 1,2,3,8                                | 9                                                                                                                                                                                                                                                                               | X | X                 | X | X | X | X | X | X | X | X |        |  |
| 7                                                                                                                                                                            | MW-8                        | 2-27-14             | 1509                               | GW                                                                                                                                                              | 1,2,3,8                                | 9                                                                                                                                                                                                                                                                               | X | X                 | X | X | X | X | X | X | X | X |        |  |
| 8                                                                                                                                                                            | MW-17R                      | 2-27-14             | 1742                               | GW                                                                                                                                                              | 1,2,3,8                                | 9                                                                                                                                                                                                                                                                               | X | X                 | X | X | X | X | X | X | X | X |        |  |
| 9                                                                                                                                                                            | WW-South                    | 2-28-14             | 955                                | GW                                                                                                                                                              | 1,2,3,8                                | 9                                                                                                                                                                                                                                                                               | X | X                 | X | X | X | X | X | X | X | X |        |  |
| 10                                                                                                                                                                           | WW-East                     | 2-28-14             | 1035                               | GW                                                                                                                                                              | 1,2,3,8                                | 9                                                                                                                                                                                                                                                                               | X | X                 | X | X | X | X | X | X | X | X |        |  |
| Sampler(s) Please Print & Sign                                                                                                                                               |                             | Shipment Method     |                                    | Required Turnaround Time: (Check Box)                                                                                                                           |                                        |                                                                                                                                                                                                                                                                                 |   | Results Due Date: |   |   |   |   |   |   |   |   |        |  |
| [Signature]                                                                                                                                                                  |                             | Fed Ex              |                                    | <input checked="" type="checkbox"/> Std 10 WK Days <input type="checkbox"/> 5 WK Days <input type="checkbox"/> Other 2 WK Days <input type="checkbox"/> 24 Hour |                                        |                                                                                                                                                                                                                                                                                 |   |                   |   |   |   |   |   |   |   |   |        |  |
| Relinquished by:                                                                                                                                                             |                             | Date:               | Time:                              | Received by:                                                                                                                                                    |                                        | Notes: 10 Day TAT. ALS Project: Navajo - Lea Refinery Semi-Annual                                                                                                                                                                                                               |   |                   |   |   |   |   |   |   |   |   |        |  |
| [Signature]                                                                                                                                                                  |                             | 2-28-14             | 1400                               | [Signature]                                                                                                                                                     |                                        |                                                                                                                                                                                                                                                                                 |   |                   |   |   |   |   |   |   |   |   |        |  |
| Relinquished by:                                                                                                                                                             |                             | Date:               | Time:                              | Received by (Laboratory):                                                                                                                                       |                                        | Cooler ID: Cooler Temp: QC Package: (Check One Box Below)                                                                                                                                                                                                                       |   |                   |   |   |   |   |   |   |   |   |        |  |
| [Signature]                                                                                                                                                                  |                             |                     |                                    | [Signature]                                                                                                                                                     |                                        | <input checked="" type="checkbox"/> Level II Std QC <input type="checkbox"/> TRRP CheckList<br><input type="checkbox"/> Level III Std QC/Raw Data <input type="checkbox"/> TRRP Level IV<br><input type="checkbox"/> Level IV SW846/CLP<br><input type="checkbox"/> Other / EDD |   |                   |   |   |   |   |   |   |   |   |        |  |
| Logged by (Laboratory):                                                                                                                                                      |                             | Date:               | Time:                              | Checked by (Laboratory):                                                                                                                                        |                                        |                                                                                                                                                                                                                                                                                 |   |                   |   |   |   |   |   |   |   |   |        |  |
|                                                                                                                                                                              |                             |                     |                                    |                                                                                                                                                                 |                                        |                                                                                                                                                                                                                                                                                 |   |                   |   |   |   |   |   |   |   |   |        |  |
| Preservative Key: 1-HCl 2-HNO <sub>3</sub> 3-H <sub>2</sub> SO <sub>4</sub> 4-NaOH 5-Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> 6-NaHSO <sub>4</sub> 7-Other 8-4°C 9-5035 |                             |                     |                                    |                                                                                                                                                                 |                                        |                                                                                                                                                                                                                                                                                 |   |                   |   |   |   |   |   |   |   |   |        |  |

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# Chain of Custody Form

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Salt Lake City, UT  
+1 801 266 7700

York, PA  
+1 717 505 5280

| Customer Information |                             |      |      | Project Information |                                    |           |   | Parameter/Method Request for Analysis |                                        |   |   |   |   |   |   |   |      |  |  |  |  |  |  |  |
|----------------------|-----------------------------|------|------|---------------------|------------------------------------|-----------|---|---------------------------------------|----------------------------------------|---|---|---|---|---|---|---|------|--|--|--|--|--|--|--|
| Purchase Order       | 171658                      |      |      | Project Name        | Lovington Lea Refining Semi-Annual |           |   | A                                     | VOC (8260) Select                      |   |   |   |   |   |   |   |      |  |  |  |  |  |  |  |
| Work Order           |                             |      |      | Project Number      |                                    |           |   | B                                     | SVOC LL (8270) TCL+1-Methylnaphthalene |   |   |   |   |   |   |   |      |  |  |  |  |  |  |  |
| Company Name         | Navajo Refining Company     |      |      | Bill To Company     | Navajo Refining Company            |           |   | C                                     | Total Metals & Hg (6020/7000)          |   |   |   |   |   |   |   |      |  |  |  |  |  |  |  |
| Send Report To       | Robert Combs                |      |      | Invoice Attn        | Robert Combs                       |           |   | D                                     | Dissolved Metals (6020/7000) Select    |   |   |   |   |   |   |   |      |  |  |  |  |  |  |  |
| Address              | PO Box 159<br>501 East Main |      |      | Address             | PO Box 159<br>501 East Main        |           |   | E                                     | Anions (300) Cl, F, SO4                |   |   |   |   |   |   |   |      |  |  |  |  |  |  |  |
| City/State/Zip       | Artesia, NM 88211           |      |      | City/State/Zip      | Artesia, NM 88211                  |           |   | F                                     | Alkalinity                             |   |   |   |   |   |   |   |      |  |  |  |  |  |  |  |
| Phone                | (575) 748-6733              |      |      | Phone               | (575) 748-6733                     |           |   | G                                     | pH                                     |   |   |   |   |   |   |   |      |  |  |  |  |  |  |  |
| Fax                  | (575) 748-5421              |      |      | Fax                 | (575) 748-5421                     |           |   | H                                     | Specific Conductance                   |   |   |   |   |   |   |   |      |  |  |  |  |  |  |  |
| e-Mail Address       | jspeer@trcsolutions.com     |      |      | e-Mail Address      | Robert.combs@chellyfrontier.com    |           |   | I                                     | TDS                                    |   |   |   |   |   |   |   |      |  |  |  |  |  |  |  |
|                      |                             |      |      |                     |                                    |           |   | J                                     | Nitrate/Nitrite (300)                  |   |   |   |   |   |   |   |      |  |  |  |  |  |  |  |
| No.                  | Sample Description          | Date | Time | Matrix              | Pres.                              | # Bottles | A | B                                     | C                                      | D | E | F | G | H | I | J | Hold |  |  |  |  |  |  |  |
| 1                    | TB-2-28-14- <del>B</del>    | -    | -    | W                   | 1,8                                | 3         | X |                                       |                                        |   |   |   |   |   |   |   |      |  |  |  |  |  |  |  |
| 2                    |                             |      |      |                     |                                    |           |   |                                       |                                        |   |   |   |   |   |   |   |      |  |  |  |  |  |  |  |
| 3                    |                             |      |      |                     |                                    |           |   |                                       |                                        |   |   |   |   |   |   |   |      |  |  |  |  |  |  |  |
| 4                    |                             |      |      |                     |                                    |           |   |                                       |                                        |   |   |   |   |   |   |   |      |  |  |  |  |  |  |  |
| 5                    |                             |      |      |                     |                                    |           |   |                                       |                                        |   |   |   |   |   |   |   |      |  |  |  |  |  |  |  |
| 6                    |                             |      |      |                     |                                    |           |   |                                       |                                        |   |   |   |   |   |   |   |      |  |  |  |  |  |  |  |
| 7                    |                             |      |      |                     |                                    |           |   |                                       |                                        |   |   |   |   |   |   |   |      |  |  |  |  |  |  |  |
| 8                    |                             |      |      |                     |                                    |           |   |                                       |                                        |   |   |   |   |   |   |   |      |  |  |  |  |  |  |  |
| 9                    |                             |      |      |                     |                                    |           |   |                                       |                                        |   |   |   |   |   |   |   |      |  |  |  |  |  |  |  |
| 10                   |                             |      |      |                     |                                    |           |   |                                       |                                        |   |   |   |   |   |   |   |      |  |  |  |  |  |  |  |

|                                |  |         |       |                           |  |                                                                                                                                                                 |  |              |  |                                                                                             |  |  |  |
|--------------------------------|--|---------|-------|---------------------------|--|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------|--|---------------------------------------------------------------------------------------------|--|--|--|
| Sampler(s) Please Print & Sign |  |         |       | Shipment Method           |  | Required Turnaround Time: (Check Box)                                                                                                                           |  |              |  | Results Due Date:                                                                           |  |  |  |
| [Signature] Sonja Allen        |  |         |       | Fed Ex                    |  | <input checked="" type="checkbox"/> Std 10 WK Days <input type="checkbox"/> 5 WK Days <input type="checkbox"/> Other 2 WK Days <input type="checkbox"/> 24 Hour |  |              |  |                                                                                             |  |  |  |
| Relinquished by:               |  | Date:   | Time: | Received by:              |  | Notes: 10 Day TAT. ALS Project: Navajo - Lea Refinery Semi-Annual                                                                                               |  |              |  |                                                                                             |  |  |  |
| [Signature] Sonja Allen        |  | 2-28-14 | 1400  | [Signature]               |  |                                                                                                                                                                 |  |              |  |                                                                                             |  |  |  |
| Relinquished by:               |  | Date:   | Time: | Received by (Laboratory): |  | Cooler ID                                                                                                                                                       |  | Cooler Temp. |  | QC Package: (Check One Box Below)                                                           |  |  |  |
| [Signature]                    |  |         |       | 31114 0945                |  |                                                                                                                                                                 |  |              |  | <input checked="" type="checkbox"/> Level II Std QC <input type="checkbox"/> TRRP Checklist |  |  |  |
| Logged by (Laboratory):        |  | Date:   | Time: | Checked by (Laboratory):  |  |                                                                                                                                                                 |  |              |  | <input type="checkbox"/> Level III Std QC/Raw Data <input type="checkbox"/> TRRP Level IV   |  |  |  |
|                                |  |         |       |                           |  |                                                                                                                                                                 |  |              |  | <input type="checkbox"/> Level IV SW846/CLP                                                 |  |  |  |
|                                |  |         |       |                           |  |                                                                                                                                                                 |  |              |  | <input type="checkbox"/> Other / EDD                                                        |  |  |  |

Preservative Key: 1-HCl 2-HNO<sub>3</sub> 3-H<sub>2</sub>SO<sub>4</sub> 4-NaOH 5-Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> 6-NaHSO<sub>4</sub> 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.  
2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.  
3. The Chain of Custody is a legal document. All information must be completed accurately.

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ORIGIN ID: H0BA

SHIP DATE: 28FEB14  
ACTWGT: 48.3 LB  
CAD: /POS1501  
DIMS: 23x13x14

BILL RECIPIENT

UNITED STATES US

TO CLIENT SERVICES  
ALS LABORATORY GROUP  
10450 STANCLIFF RD  
STE 210  
HOUSTON TX 77099

(281) 530-5656

REF:

THU:

DEPT:



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Express



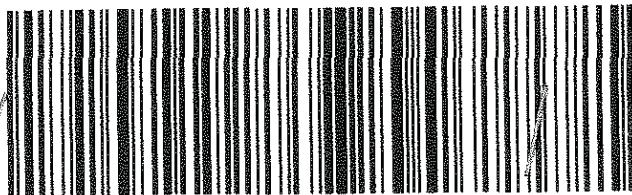
3 of 9  
MPS# 0681 7980 7607 1039  
Mstr# 8042 5198 8706

SATURDAY 12:00P  
PRIORITY OVERNIGHT

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8529 4542 4762 8529 4542 4762

FedEx Tracking Number for Customer

Form ID No. 026

ALS Environmental  
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Houston, Texas 77099  
Tel. +1 281 530 5656  
Fax +1 281 530 5687

Date: 2-28-14 Time: 1400  
Name: JRC  
Company: JRC

CUSTODY SEAL

Seal Broken By:

Date:

Date: 2-28-14 Time: 1400  
Name: JRC  
Company: JRC

CUSTODY SEAL

Seal Broken By:

Date:



ALS Environmental  
10450 Stancliff Rd., Suite 210  
Houston, Texas 77099  
Tel. +1 281 530 5656  
Fax. +1 281 530 5687

CUSTODY SEAL

Date: 2-28-14 Time: 1400  
Name: JRC  
Company: JRC

Seal Broken By:

Date:

SHIP DATE: 28FEB14  
ACTWGT: 60.4 LB  
CAD: /POS1501  
DIMS: 23x13x14 IN  
BILL RECIPIENT

UNITED STATES US

**TO CLIENT SERVICES  
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10450 STANCLIFF RD  
STE 210  
HOUSTON TX 77099**  
(281) 630-5666 REF:

(281) 530-5650

REF:

DEPT 2



**FedEx**  
Express



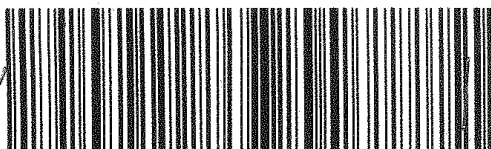
4 of 9  
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0681  
Mstr# 8042 5198 8706

0215

**SATURDAY 12:00P**  
**PRIORITY OVERNIGHT**

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|                                                                                                                                                                                                  |                                                    |                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|------------------------------------------------|
|  <b>ALS Environmental</b><br>10411 Stanetti Rd, Suite 210<br>Dallas 77099<br>Tel: 830 5656<br>Fax: 830 5887 | <b>CUSTODY SEAL</b><br>Date: 2-28-14<br>Time: 1400 | Company: 210C<br>Name: _____<br>_____<br>_____ |
|                                                                                                                                                                                                  |                                                    | Seal Broken By: _____<br>Date: 3/10/14         |

ALS Environmental  
10450 Shamrock Pk., Suite 210  
Houston, Texas 77039  
Tel. +1 281 530 5656  
Fax. +1 281 530 2587

DATE: 2/28/94 TIME: 1:00  
NAME: JHE  
COMPANY: JHE

Seal Broken By: [Signature]  
Date: 3/1/94

ORIGIN ID:HOBA

SHIP DATE: 28FEB14  
ACTWGT: 59.4 LB  
CAD: /POS1501  
OIMS: 23x13x14 IN

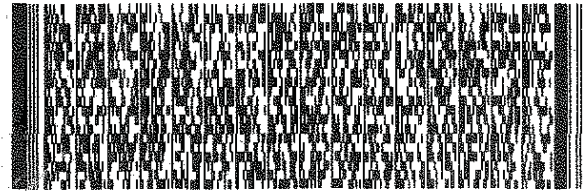
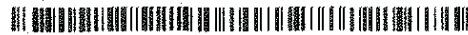
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**STE 210**  
**HOUSTON TX 77099**

(281) 530-5856  
REF: INU: PO:

DEPT:



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Express



7 of 9

MPS# 7980 7607 1072  
0681

Mstr# 8042 5198 8706

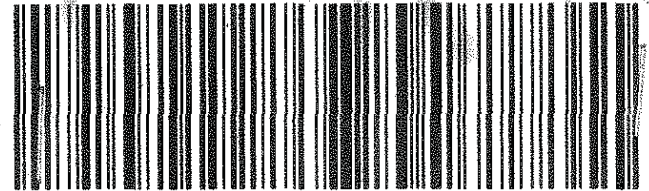
0215

**SATURDAY 12:00P**  
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**ALS Environmental**  
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Tel. +1 281 530 5856  
Fax. +1 281 530 5887

Date: 2-28-14  
Name: [Signature]  
Company: [Signature]

**CUSTODY SEAL**

Seal Broken By: [Signature]  
Date: 2/28/14



**ALS Environmental**  
10450 Stancliff Rd, Suite 210  
Houston, Texas 77099  
Tel. +1 281 530 5856  
Fax. +1 281 530 5887

**CUSTODY SEAL**

Date: 2-28-14 Time: 1406

Name: [Signature]

Company: [Signature]

Seal Broken By: [Signature]  
Date: 2/28/14



ORIGIN ID:MOBA

SHIP DATE: 28FEB14  
ACTWGT: 63.5 LB  
CAD: /POS1501  
DIMS: 23x13x14 IN

BILL RECIPIENT

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STE 210  
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REF:

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J14101402070125

8 of 9

SATURDAY 12:00P  
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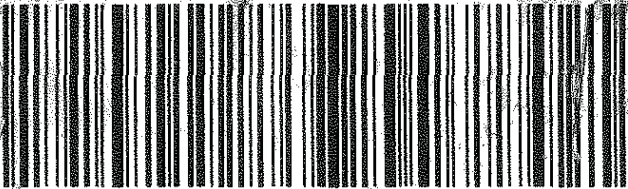
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10450 Stancliff Rd, Suite 210  
Houston, Texas 77099  
Tel: +1 281 530 5656  
Fax: +1 281 530 5207

CUSTODY SEAL

Date: 2-28-14 Time: 1400  
Name: JAC

Signed By: [Signature]  
Date: 3/1/14

ORIGIN ID: H08A

SHIP DATE: 28FEB14  
ACTWT: 58.8 LB  
CAD: /POS1501  
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BILL RECIPIENT

UNITED STATES US

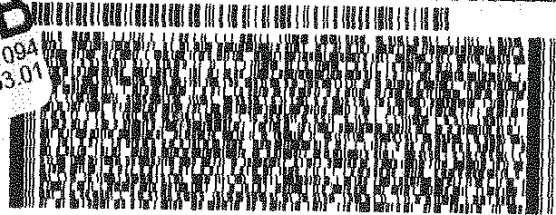
TO CLIENT SERVICES  
ALS LABORATORY GROUP  
10450 STANCLIFF RD  
STE 210  
HOUSTON TX 77099

(281) 530-5656

REF:

DEPT:

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1094  
03.01



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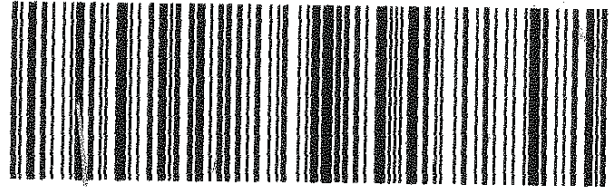
9 of 9  
MPS# 7980 7607 1094  
0681  
Met# 8042 5198 8706

SATURDAY 12:00P  
PRIORITY OVERNIGHT

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Houston, Texas 77099  
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Fax. +1 281 530 5687

CUSTODY SEAL

Date: 2-28-14 Time: 1400  
Name: [Signature]  
Ship To: [Signature]

Seal Broken By: [Signature]  
Date: 2/11/14



ALS Environmental  
10450 Stancliff Rd, Suite 210  
Houston, Texas 77099  
Tel. +1 281 530 5656  
Fax. +1 281 530 5687

CUSTODY SEAL

Date: 2-28-14 Time: 1400  
Name: [Signature]  
Ship To: [Signature]

Seal Broken By: [Signature]  
Date: 2/11/14

ORIGIN ID: H08A

SHIP DATE: 28FEB14  
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UNITED STATES US

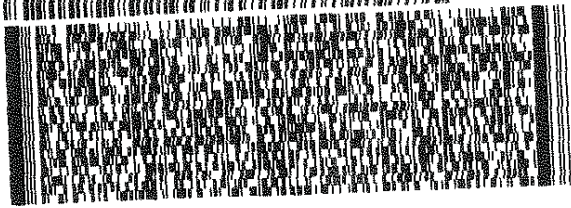
CLIENT SERVICES  
ALS LABORATORY GROUP  
10450 STANCLIFF RD  
STE 210  
HOUSTON TX 77099

(281) 530-5856

REF:

DEPT:

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Express



2 of 9

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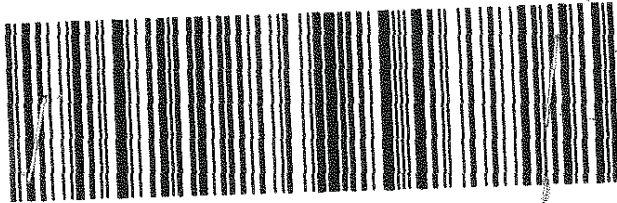
SATURDAY 12:00P  
PRIORITY OVERNIGHT

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**ALS Environmental**  
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Houston, Texas 77099  
Tel. +1 281 530 5656  
Fax. +1 281 530 5887

Date: 2-28-14 Time: 1400  
Name: JPC  
Company: JPC

**CUSTODY SEAL**

Seal Broken By:

Date:



**ALS Environmental**  
10450 Stancliff Rd., Suite 210  
Houston, Texas 77099  
Tel. +1 281 530 5656  
Fax. +1 281 530 5887

**CUSTODY SEAL**

Seal Broken By:

Date: 2-28-14 Time: 1400

Name: JPC

Company: JPC

Date:



ORIGIN ID:H0BA

SHIP DATE: 28FEB14  
ACTWGT: 59.0 LB  
CAD: /P061501  
DIMS: 23x13x14 IN  
BILL RECIPIENT

UNITED STATES US

TO **CLIENT SERVICES**  
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**STE 210**  
**HOUSTON TX 77099**

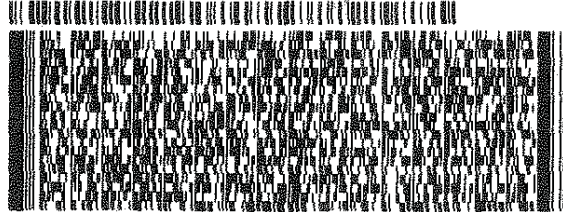
(281) 530-6656

REF:

THU:

PO:

DEPT:



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Express



9210702020101111

5 of 9

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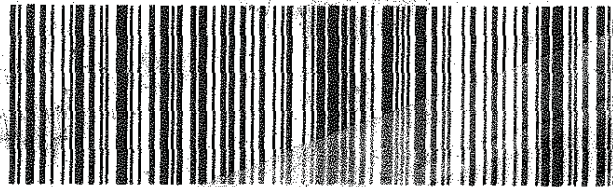
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**SATURDAY 12:00P**  
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Houston, Texas 77099  
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Fax. +1 281 530 5887

|                                    |                   |
|------------------------------------|-------------------|
| <b>CUSTOMER SEAL</b>               |                   |
| Date: <u>2-28-14</u>               | Time: <u>1400</u> |
| Name: <u>[Signature]</u>           |                   |
| Company: <u>[Signature]</u>        |                   |
| Seal Broken By: <u>[Signature]</u> |                   |
| Date: <u>3/11/14</u>               |                   |

|                                    |                   |
|------------------------------------|-------------------|
| <b>CUSTOMER SEAL</b>               |                   |
| Date: <u>2-28-14</u>               | Time: <u>1400</u> |
| Name: <u>[Signature]</u>           |                   |
| Company: <u>[Signature]</u>        |                   |
| Seal Broken By: <u>[Signature]</u> |                   |
| Date: <u>3/11/14</u>               |                   |

ORIGIN ID: H08A

SHIP DATE: 28FEB14  
ACTWGT: 58.2 LB  
CAD: /POS1501  
DIMS: 23x13x14 IN  
BILL RECIPIENT

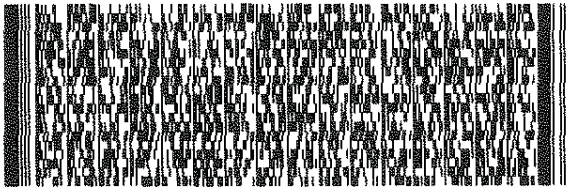
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STE 210  
HOUSTON TX 77099

(281) 530-5856

REF:

DEPT:



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6 of 9  
MPS# 7980 7607 1061  
0681

Mstr# 8042 5198 8706

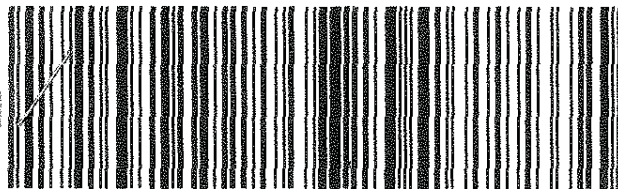
0215

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**SATURDAY 12:00P  
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**ALS Environmental**  
10450 Stancliff Rd, Suite 210  
Houston, Texas 77099  
Tel. +1 281 530 5856  
Fax +1 281 530 5887

Date: 2-18-14  
Name: [Signature]  
Company: [Signature]

**CUSTODY SEAL**

Seal Broken By: [Signature]  
Date: 3/11/14

**ALS Environmental**  
10450 Stancliff Rd, Suite 210  
Houston, Texas 77099  
Tel. +1 281 530 5856  
Fax +1 281 530 5887

Date: 2-18-14  
Name: [Signature]  
Company: [Signature]

**CUSTODY SEAL**

Seal Broken By: [Signature]  
Date: 3/11/14





17-Mar-2014

Robert Combs  
Navajo Refining Company  
PO Box 1490  
Artesia, NM 88211-1490

Tel: (575) 746-5382  
Fax: (575) 746-5421

Re: Navajo Lea Refinery Semi-Annual

Work Order: **14030092**

Dear Robert,

ALS Environmental received 5 samples on 04-Mar-2014 11:40 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 48.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in black ink that reads "Sonia West".

Electronically approved by: Jumoke M. Lawal

Sonia West  
Project Manager



Certificate No: T104704231-13-12

ADDRESS 10450 Stancliff Rd, Suite 210 Houston, Texas 77099-4338 | PHONE (281) 530-5656 | FAX (281) 530-5887

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RIGHT SOLUTIONS RIGHT PARTNER

---

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Work Order:** 14030092

**Work Order Sample Summary**

---

| <u>Lab Samp ID</u> | <u>Client Sample ID</u> | <u>Matrix</u> | <u>Tag Number</u> | <u>Collection Date</u> | <u>Date Received</u> | <u>Hold</u>              |
|--------------------|-------------------------|---------------|-------------------|------------------------|----------------------|--------------------------|
| 14030092-01        | MW-11                   | Groundwater   |                   | 2/28/2014 18:25        | 3/4/2014 11:40       | <input type="checkbox"/> |
| 14030092-02        | MW-14                   | Groundwater   |                   | 2/28/2014 18:45        | 3/4/2014 11:40       | <input type="checkbox"/> |
| 14030092-03        | EB-A-2-28-14            | Groundwater   |                   | 2/28/2014 19:00        | 3/4/2014 11:40       | <input type="checkbox"/> |
| 14030092-04        | EB-B-2-28-14            | Groundwater   |                   | 2/28/2014 19:00        | 3/4/2014 11:40       | <input type="checkbox"/> |
| 14030092-05        | TB-3-3-14               | Groundwater   |                   | 2/28/2014              | 3/4/2014 11:40       | <input type="checkbox"/> |

---

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Work Order:** 14030092

---

**Case Narrative**

As per clients request via email on March 3, 2014, sample ID MW-15 was changed to MW-14.

Sample received outside method holding time for pH. pH is an immediate test. Sample results are flagged with an "H" qualifier.

# ALS Environmental

Date: 17-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-11  
**Collection Date:** 2/28/2014 06:25 PM

**Work Order:** 14030092  
**Lab ID:** 14030092-01  
**Matrix:** GROUNDWATER

| Analyses                      | Result        | Qual | Report Limit  | Units       | Dilution Factor | Date Analyzed     |
|-------------------------------|---------------|------|---------------|-------------|-----------------|-------------------|
| <b>VOLATILES - SW8260C</b>    |               |      | <b>SW8260</b> |             |                 | Analyst: PC       |
| 1,1,1-Trichloroethane         | ND            |      | 0.0050        | mg/L        | 1               | 3/4/2014 09:19 PM |
| 1,1,2,2-Tetrachloroethane     | ND            |      | 0.0050        | mg/L        | 1               | 3/4/2014 09:19 PM |
| 1,1,2-Trichloroethane         | ND            |      | 0.0050        | mg/L        | 1               | 3/4/2014 09:19 PM |
| 1,1-Dichloroethane            | ND            |      | 0.0050        | mg/L        | 1               | 3/4/2014 09:19 PM |
| 1,1-Dichloroethene            | ND            |      | 0.0050        | mg/L        | 1               | 3/4/2014 09:19 PM |
| <b>1,2,4-Trimethylbenzene</b> | <b>0.039</b>  |      | <b>0.0050</b> | <b>mg/L</b> | 1               | 3/4/2014 09:19 PM |
| 1,2-Dibromoethane             | ND            |      | 0.0050        | mg/L        | 1               | 3/4/2014 09:19 PM |
| 1,2-Dichloroethane            | ND            |      | 0.0050        | mg/L        | 1               | 3/4/2014 09:19 PM |
| 1,2-Dichloropropane           | ND            |      | 0.0050        | mg/L        | 1               | 3/4/2014 09:19 PM |
| <b>1,3,5-Trimethylbenzene</b> | <b>0.015</b>  |      | <b>0.0050</b> | <b>mg/L</b> | 1               | 3/4/2014 09:19 PM |
| 2-Butanone                    | ND            |      | 0.010         | mg/L        | 1               | 3/4/2014 09:19 PM |
| 2-Hexanone                    | ND            |      | 0.010         | mg/L        | 1               | 3/4/2014 09:19 PM |
| 4-Isopropyltoluene            | ND            |      | 0.0050        | mg/L        | 1               | 3/4/2014 09:19 PM |
| 4-Methyl-2-pentanone          | ND            |      | 0.010         | mg/L        | 1               | 3/4/2014 09:19 PM |
| Acetone                       | ND            |      | 0.010         | mg/L        | 1               | 3/4/2014 09:19 PM |
| <b>Benzene</b>                | <b>0.96</b>   |      | <b>0.050</b>  | <b>mg/L</b> | 10              | 3/6/2014 03:34 PM |
| Bromodichloromethane          | ND            |      | 0.0050        | mg/L        | 1               | 3/4/2014 09:19 PM |
| Bromoform                     | ND            |      | 0.0050        | mg/L        | 1               | 3/4/2014 09:19 PM |
| Bromomethane                  | ND            |      | 0.0050        | mg/L        | 1               | 3/4/2014 09:19 PM |
| Carbon disulfide              | ND            |      | 0.010         | mg/L        | 1               | 3/4/2014 09:19 PM |
| Carbon tetrachloride          | ND            |      | 0.0050        | mg/L        | 1               | 3/4/2014 09:19 PM |
| Chlorobenzene                 | ND            |      | 0.0050        | mg/L        | 1               | 3/4/2014 09:19 PM |
| Chloroethane                  | ND            |      | 0.0050        | mg/L        | 1               | 3/4/2014 09:19 PM |
| Chloroform                    | ND            |      | 0.0050        | mg/L        | 1               | 3/4/2014 09:19 PM |
| Chloromethane                 | ND            |      | 0.0050        | mg/L        | 1               | 3/4/2014 09:19 PM |
| cis-1,2-Dichloroethene        | ND            |      | 0.0050        | mg/L        | 1               | 3/4/2014 09:19 PM |
| cis-1,3-Dichloropropene       | ND            |      | 0.0050        | mg/L        | 1               | 3/4/2014 09:19 PM |
| Dibromochloromethane          | ND            |      | 0.0050        | mg/L        | 1               | 3/4/2014 09:19 PM |
| <b>Ethylbenzene</b>           | <b>0.25</b>   |      | <b>0.050</b>  | <b>mg/L</b> | 10              | 3/6/2014 03:34 PM |
| <b>Isopropylbenzene</b>       | <b>0.088</b>  |      | <b>0.0050</b> | <b>mg/L</b> | 1               | 3/4/2014 09:19 PM |
| <b>m,p-Xylene</b>             | <b>0.12</b>   |      | <b>0.010</b>  | <b>mg/L</b> | 1               | 3/4/2014 09:19 PM |
| Methyl tert-butyl ether       | ND            |      | 0.0050        | mg/L        | 1               | 3/4/2014 09:19 PM |
| Methylene chloride            | ND            |      | 0.010         | mg/L        | 1               | 3/4/2014 09:19 PM |
| <b>Naphthalene</b>            | <b>0.0064</b> |      | <b>0.0050</b> | <b>mg/L</b> | 1               | 3/4/2014 09:19 PM |
| <b>n-Butylbenzene</b>         | <b>0.010</b>  |      | <b>0.0050</b> | <b>mg/L</b> | 1               | 3/4/2014 09:19 PM |
| <b>n-Propylbenzene</b>        | <b>0.032</b>  |      | <b>0.0050</b> | <b>mg/L</b> | 1               | 3/4/2014 09:19 PM |
| <b>o-Xylene</b>               | <b>0.074</b>  |      | <b>0.0050</b> | <b>mg/L</b> | 1               | 3/4/2014 09:19 PM |
| <b>sec-Butylbenzene</b>       | <b>0.016</b>  |      | <b>0.0050</b> | <b>mg/L</b> | 1               | 3/4/2014 09:19 PM |
| Styrene                       | ND            |      | 0.0050        | mg/L        | 1               | 3/4/2014 09:19 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 17-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-11  
**Collection Date:** 2/28/2014 06:25 PM

**Work Order:** 14030092  
**Lab ID:** 14030092-01  
**Matrix:** GROUNDWATER

| Analyses                    | Result      | Qual | Report Limit | Units       | Dilution Factor | Date Analyzed            |
|-----------------------------|-------------|------|--------------|-------------|-----------------|--------------------------|
| Tetrachloroethene           | ND          |      | 0.0050       | mg/L        | 1               | 3/4/2014 09:19 PM        |
| Toluene                     | ND          |      | 0.0050       | mg/L        | 1               | 3/4/2014 09:19 PM        |
| trans-1,2-Dichloroethene    | ND          |      | 0.0050       | mg/L        | 1               | 3/4/2014 09:19 PM        |
| trans-1,3-Dichloropropene   | ND          |      | 0.0050       | mg/L        | 1               | 3/4/2014 09:19 PM        |
| Trichloroethene             | ND          |      | 0.0050       | mg/L        | 1               | 3/4/2014 09:19 PM        |
| Vinyl chloride              | ND          |      | 0.0020       | mg/L        | 1               | 3/4/2014 09:19 PM        |
| <b>Xylenes, Total</b>       | <b>0.20</b> |      | <b>0.015</b> | <b>mg/L</b> | <b>1</b>        | <b>3/4/2014 09:19 PM</b> |
| Surr: 1,2-Dichloroethane-d4 | 80.9        |      | 70-125       | %REC        | 1               | 3/4/2014 09:19 PM        |
| Surr: 1,2-Dichloroethane-d4 | 85.9        |      | 70-125       | %REC        | 10              | 3/6/2014 03:34 PM        |
| Surr: 4-Bromofluorobenzene  | 100         |      | 72-125       | %REC        | 1               | 3/4/2014 09:19 PM        |
| Surr: 4-Bromofluorobenzene  | 96.4        |      | 72-125       | %REC        | 10              | 3/6/2014 03:34 PM        |
| Surr: Dibromofluoromethane  | 85.2        |      | 71-125       | %REC        | 1               | 3/4/2014 09:19 PM        |
| Surr: Dibromofluoromethane  | 88.5        |      | 71-125       | %REC        | 10              | 3/6/2014 03:34 PM        |
| Surr: Toluene-d8            | 100         |      | 75-125       | %REC        | 10              | 3/6/2014 03:34 PM        |
| Surr: Toluene-d8            | 96.7        |      | 75-125       | %REC        | 1               | 3/4/2014 09:19 PM        |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 17-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-14  
**Collection Date:** 2/28/2014 06:45 PM

**Work Order:** 14030092  
**Lab ID:** 14030092-02  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|-----------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       |                 | Analyst: PC       |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 09:42 PM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 09:42 PM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 09:42 PM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 09:42 PM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 09:42 PM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| Chlorobenzene              | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| Chloroethane               | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| Chloroform                 | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| Chloromethane              | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| cis-1,2-Dichloroethene     | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| cis-1,3-Dichloropropene    | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| Dibromochloromethane       | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| Ethylbenzene               | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| Isopropylbenzene           | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| m,p-Xylene                 | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 09:42 PM |
| Methyl tert-butyl ether    | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| Methylene chloride         | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 09:42 PM |
| Naphthalene                | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| n-Butylbenzene             | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| n-Propylbenzene            | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| o-Xylene                   | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| sec-Butylbenzene           | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |
| Styrene                    | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 09:42 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

## ALS Environmental

Date: 17-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** MW-14  
**Collection Date:** 2/28/2014 06:45 PM

**Work Order:** 14030092  
**Lab ID:** 14030092-02  
**Matrix:** GROUNDWATER

| Analyses                    | Result | Qual | Report<br>Limit | Units | Dilution<br>Factor | Date Analyzed     |
|-----------------------------|--------|------|-----------------|-------|--------------------|-------------------|
| Tetrachloroethene           | ND     |      | 0.0050          | mg/L  | 1                  | 3/4/2014 09:42 PM |
| Toluene                     | ND     |      | 0.0050          | mg/L  | 1                  | 3/4/2014 09:42 PM |
| trans-1,2-Dichloroethene    | ND     |      | 0.0050          | mg/L  | 1                  | 3/4/2014 09:42 PM |
| trans-1,3-Dichloropropene   | ND     |      | 0.0050          | mg/L  | 1                  | 3/4/2014 09:42 PM |
| Trichloroethene             | ND     |      | 0.0050          | mg/L  | 1                  | 3/4/2014 09:42 PM |
| Vinyl chloride              | ND     |      | 0.0020          | mg/L  | 1                  | 3/4/2014 09:42 PM |
| Xylenes, Total              | ND     |      | 0.015           | mg/L  | 1                  | 3/4/2014 09:42 PM |
| Surr: 1,2-Dichloroethane-d4 | 84.3   |      | 70-125          | %REC  | 1                  | 3/4/2014 09:42 PM |
| Surr: 4-Bromofluorobenzene  | 90.0   |      | 72-125          | %REC  | 1                  | 3/4/2014 09:42 PM |
| Surr: Dibromofluoromethane  | 88.7   |      | 71-125          | %REC  | 1                  | 3/4/2014 09:42 PM |
| Surr: Toluene-d8            | 95.6   |      | 75-125          | %REC  | 1                  | 3/4/2014 09:42 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 17-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** EB-A-2-28-14  
**Collection Date:** 2/28/2014 07:00 PM

**Work Order:** 14030092  
**Lab ID:** 14030092-03  
**Matrix:** GROUNDWATER

| Analyses                       | Result      | Qual | Report Limit       | Units       | Dilution Factor          | Date Analyzed                     |
|--------------------------------|-------------|------|--------------------|-------------|--------------------------|-----------------------------------|
| <b>MERCURY-SW7470A</b>         |             |      |                    |             |                          |                                   |
| Mercury                        | ND          |      | SW7470<br>0.000200 | mg/L        | Prep Date: 3/7/2014<br>1 | Analyst: OFO<br>3/7/2014 03:19 PM |
| <b>LOW-LEVEL SEMIVOLATILES</b> |             |      |                    |             |                          |                                   |
| 1,1'-Biphenyl                  | ND          |      | SW8270<br>0.20     | µg/L        | Prep Date: 3/7/2014<br>1 | Analyst: LG<br>3/11/2014 05:44 PM |
| 1-Methylnaphthalene            | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| 2,4,5-Trichlorophenol          | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| 2,4,6-Trichlorophenol          | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| 2,4-Dichlorophenol             | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| 2,4-Dimethylphenol             | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| 2,4-Dinitrophenol              | ND          |      | 1.0                | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| 2,4-Dinitrotoluene             | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| 2,6-Dinitrotoluene             | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| 2-Chloronaphthalene            | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| 2-Chlorophenol                 | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| 2-Methylnaphthalene            | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| 2-Methylphenol                 | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| 2-Nitroaniline                 | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| 2-Nitrophenol                  | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| 3&4-Methylphenol               | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| 3,3'-Dichlorobenzidine         | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| 3-Nitroaniline                 | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| 4,6-Dinitro-2-methylphenol     | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| 4-Bromophenyl phenyl ether     | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| 4-Chloro-3-methylphenol        | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| 4-Chloroaniline                | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| 4-Chlorophenyl phenyl ether    | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| 4-Nitroaniline                 | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| 4-Nitrophenol                  | ND          |      | 1.0                | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| Acenaphthene                   | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| Acenaphthylene                 | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| Acetophenone                   | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| Anthracene                     | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| Atrazine                       | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| Benz(a)anthracene              | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| <b>Benzaldehyde</b>            | <b>0.25</b> |      | <b>0.20</b>        | <b>µg/L</b> | 1                        | 3/11/2014 05:44 PM                |
| Benzo(a)pyrene                 | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| Benzo(b)fluoranthene           | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| Benzo(g,h,i)perylene           | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |
| Benzo(k)fluoranthene           | ND          |      | 0.20               | µg/L        | 1                        | 3/11/2014 05:44 PM                |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



# ALS Environmental

Date: 17-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** EB-A-2-28-14  
**Collection Date:** 2/28/2014 07:00 PM

**Work Order:** 14030092  
**Lab ID:** 14030092-03  
**Matrix:** GROUNDWATER

| Analyses                    | Result | Qual | Report Limit  | Units | Dilution Factor    | Date Analyzed      |
|-----------------------------|--------|------|---------------|-------|--------------------|--------------------|
| Bis(2-chloroethoxy)methane  | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Bis(2-chloroethyl)ether     | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Bis(2-chloroisopropyl)ether | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Bis(2-ethylhexyl)phthalate  | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Butyl benzyl phthalate      | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Caprolactam                 | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Carbazole                   | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Chrysene                    | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Dibenz(a,h)anthracene       | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Dibenzofuran                | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Diethyl phthalate           | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Dimethyl phthalate          | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Di-n-butyl phthalate        | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Di-n-octyl phthalate        | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Fluoranthene                | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Fluorene                    | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Hexachlorobenzene           | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Hexachlorobutadiene         | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Hexachlorocyclopentadiene   | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Hexachloroethane            | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Indeno(1,2,3-cd)pyrene      | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Isophorone                  | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Naphthalene                 | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Nitrobenzene                | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| N-Nitrosodi-n-propylamine   | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| N-Nitrosodiphenylamine      | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Pentachlorophenol           | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Phenanthrene                | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Phenol                      | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Pyrene                      | ND     |      | 0.20          | µg/L  | 1                  | 3/11/2014 05:44 PM |
| Surr: 2,4,6-Tribromophenol  | 43.5   |      | 34-129        | %REC  | 1                  | 3/11/2014 05:44 PM |
| Surr: 2-Fluorobiphenyl      | 44.9   |      | 40-125        | %REC  | 1                  | 3/11/2014 05:44 PM |
| Surr: 2-Fluorophenol        | 40.8   |      | 20-120        | %REC  | 1                  | 3/11/2014 05:44 PM |
| Surr: 4-Terphenyl-d14       | 66.1   |      | 40-135        | %REC  | 1                  | 3/11/2014 05:44 PM |
| Surr: Nitrobenzene-d5       | 41.9   |      | 41-120        | %REC  | 1                  | 3/11/2014 05:44 PM |
| Surr: Phenol-d6             | 39.5   |      | 20-120        | %REC  | 1                  | 3/11/2014 05:44 PM |
| <b>VOLATILES - SW8260C</b>  |        |      | <b>SW8260</b> |       | <b>Analyst: PC</b> |                    |
| 1,1,1-Trichloroethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:05 PM  |
| 1,1,2,2-Tetrachloroethane   | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:05 PM  |
| 1,1,2-Trichloroethane       | ND     |      | 0.0050        | mg/L  | 1                  | 3/4/2014 10:05 PM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 17-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** EB-A-2-28-14  
**Collection Date:** 2/28/2014 07:00 PM

**Work Order:** 14030092  
**Lab ID:** 14030092-03  
**Matrix:** GROUNDWATER

| Analyses                  | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed     |
|---------------------------|--------|------|--------------|-------|-----------------|-------------------|
| 1,1-Dichloroethane        | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| 1,1-Dichloroethene        | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| 1,2,4-Trimethylbenzene    | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| 1,2-Dibromoethane         | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| 1,2-Dichloroethane        | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| 1,2-Dichloropropane       | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| 1,3,5-Trimethylbenzene    | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| 2-Butanone                | ND     |      | 0.010        | mg/L  | 1               | 3/4/2014 10:05 PM |
| 2-Hexanone                | ND     |      | 0.010        | mg/L  | 1               | 3/4/2014 10:05 PM |
| 4-Isopropyltoluene        | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| 4-Methyl-2-pentanone      | ND     |      | 0.010        | mg/L  | 1               | 3/4/2014 10:05 PM |
| Acetone                   | ND     |      | 0.010        | mg/L  | 1               | 3/4/2014 10:05 PM |
| Benzene                   | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| Bromodichloromethane      | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| Bromoform                 | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| Bromomethane              | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| Carbon disulfide          | ND     |      | 0.010        | mg/L  | 1               | 3/4/2014 10:05 PM |
| Carbon tetrachloride      | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| Chlorobenzene             | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| Chloroethane              | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| Chloroform                | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| Chloromethane             | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| cis-1,2-Dichloroethene    | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| cis-1,3-Dichloropropene   | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| Dibromochloromethane      | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| Ethylbenzene              | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| Isopropylbenzene          | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| m,p-Xylene                | ND     |      | 0.010        | mg/L  | 1               | 3/4/2014 10:05 PM |
| Methyl tert-butyl ether   | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| Methylene chloride        | ND     |      | 0.010        | mg/L  | 1               | 3/4/2014 10:05 PM |
| Naphthalene               | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| n-Butylbenzene            | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| n-Propylbenzene           | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| o-Xylene                  | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| sec-Butylbenzene          | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| Styrene                   | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| Tetrachloroethene         | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| Toluene                   | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| trans-1,2-Dichloroethene  | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |
| trans-1,3-Dichloropropene | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:05 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 17-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** EB-A-2-28-14  
**Collection Date:** 2/28/2014 07:00 PM

**Work Order:** 14030092  
**Lab ID:** 14030092-03  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| Trichloroethene                              | ND     |      | 0.0050            | mg/L     | 1               | 3/4/2014 10:05 PM   |
| Vinyl chloride                               | ND     |      | 0.0020            | mg/L     | 1               | 3/4/2014 10:05 PM   |
| Xylenes, Total                               | ND     |      | 0.015             | mg/L     | 1               | 3/4/2014 10:05 PM   |
| Surr: 1,2-Dichloroethane-d4                  | 83.8   |      | 70-125            | %REC     | 1               | 3/4/2014 10:05 PM   |
| Surr: 4-Bromofluorobenzene                   | 92.8   |      | 72-125            | %REC     | 1               | 3/4/2014 10:05 PM   |
| Surr: Dibromofluoromethane                   | 88.7   |      | 71-125            | %REC     | 1               | 3/4/2014 10:05 PM   |
| Surr: Toluene-d8                             | 97.6   |      | 75-125            | %REC     | 1               | 3/4/2014 10:05 PM   |
| <b>ANIONS - EPA 300.0 (1993)</b>             |        |      | <b>E300</b>       |          |                 | Analyst: <b>JKP</b> |
| Chloride                                     | ND     |      | 0.500             | mg/L     | 1               | 3/17/2014 02:57 PM  |
| Fluoride                                     | ND     |      | 0.100             | mg/L     | 1               | 3/17/2014 02:57 PM  |
| Sulfate                                      | ND     |      | 0.500             | mg/L     | 1               | 3/17/2014 02:57 PM  |
| Nitrate/Nitrite (as N)                       | ND     |      | 1.00              | mg/L     | 5               | 3/17/2014 12:26 PM  |
| <b>ALKALINITY-SM2320B</b>                    |        |      | <b>SM2320B</b>    |          |                 | Analyst: <b>PPM</b> |
| Alkalinity, Bicarbonate (As CaCO3)           | 20.7   |      | 10.0              | mg/L     | 1               | 3/4/2014 09:45 PM   |
| Alkalinity, Carbonate (As CaCO3)             | ND     |      | 10.0              | mg/L     | 1               | 3/4/2014 09:45 PM   |
| Alkalinity, Hydroxide (As CaCO3)             | ND     |      | 10.0              | mg/L     | 1               | 3/4/2014 09:45 PM   |
| Alkalinity, Total (As CaCO3)                 | 20.7   |      | 10.0              | mg/L     | 1               | 3/4/2014 09:45 PM   |
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | ND     |      | 5.00              | µmhos/cm | 1               | 3/4/2014 09:45 PM   |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 6.13   | H    | 0.100             | pH Units | 1               | 3/4/2014 09:45 PM   |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | ND     |      | 10.0              | mg/L     | 1               | 3/6/2014 04:45 PM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 17-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** EB-B-2-28-14  
**Collection Date:** 2/28/2014 07:00 PM

**Work Order:** 14030092  
**Lab ID:** 14030092-04  
**Matrix:** GROUNDWATER

| Analyses                       | Result      | Qual | Report Limit       | Units       | Dilution Factor          | Date Analyzed                     |
|--------------------------------|-------------|------|--------------------|-------------|--------------------------|-----------------------------------|
| <b>MERCURY-SW7470A</b>         |             |      |                    |             |                          |                                   |
| Mercury                        | ND          |      | SW7470<br>0.000200 | mg/L        | Prep Date: 3/7/2014<br>1 | Analyst: OFO<br>3/7/2014 03:21 PM |
| <b>LOW-LEVEL SEMIVOLATILES</b> |             |      |                    |             |                          |                                   |
| 1,1'-Biphenyl                  | ND          |      | SW8270<br>0.20     | µg/L        | Prep Date: 3/7/2014<br>1 | Analyst: LG<br>3/7/2014 08:01 PM  |
| 1-Methylnaphthalene            | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| 2,4,5-Trichlorophenol          | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| 2,4,6-Trichlorophenol          | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| 2,4-Dichlorophenol             | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| 2,4-Dimethylphenol             | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| 2,4-Dinitrophenol              | ND          |      | 1.0                | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| 2,4-Dinitrotoluene             | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| 2,6-Dinitrotoluene             | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| 2-Chloronaphthalene            | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| 2-Chlorophenol                 | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| 2-Methylnaphthalene            | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| 2-Methylphenol                 | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| 2-Nitroaniline                 | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| 2-Nitrophenol                  | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| 3&4-Methylphenol               | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| 3,3'-Dichlorobenzidine         | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| 3-Nitroaniline                 | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| 4,6-Dinitro-2-methylphenol     | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| 4-Bromophenyl phenyl ether     | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| 4-Chloro-3-methylphenol        | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| 4-Chloroaniline                | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| 4-Chlorophenyl phenyl ether    | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| 4-Nitroaniline                 | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| 4-Nitrophenol                  | ND          |      | 1.0                | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| Acenaphthene                   | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| Acenaphthylene                 | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| Acetophenone                   | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| Anthracene                     | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| Atrazine                       | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| Benz(a)anthracene              | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| <b>Benzaldehyde</b>            | <b>0.30</b> |      | <b>0.20</b>        | <b>µg/L</b> | 1                        | 3/7/2014 08:01 PM                 |
| Benzo(a)pyrene                 | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| Benzo(b)fluoranthene           | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| Benzo(g,h,i)perylene           | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |
| Benzo(k)fluoranthene           | ND          |      | 0.20               | µg/L        | 1                        | 3/7/2014 08:01 PM                 |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 17-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** EB-B-2-28-14  
**Collection Date:** 2/28/2014 07:00 PM

**Work Order:** 14030092  
**Lab ID:** 14030092-04  
**Matrix:** GROUNDWATER

| Analyses                    | Result | Qual | Report Limit  | Units | Dilution Factor | Date Analyzed      |
|-----------------------------|--------|------|---------------|-------|-----------------|--------------------|
| Bis(2-chloroethoxy)methane  | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Bis(2-chloroethyl)ether     | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Bis(2-chloroisopropyl)ether | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Bis(2-ethylhexyl)phthalate  | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Butyl benzyl phthalate      | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Caprolactam                 | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Carbazole                   | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Chrysene                    | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Dibenz(a,h)anthracene       | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Dibenzofuran                | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Diethyl phthalate           | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Dimethyl phthalate          | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Di-n-butyl phthalate        | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Di-n-octyl phthalate        | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Fluoranthene                | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Fluorene                    | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Hexachlorobenzene           | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Hexachlorobutadiene         | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Hexachlorocyclopentadiene   | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Hexachloroethane            | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Indeno(1,2,3-cd)pyrene      | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Isophorone                  | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Naphthalene                 | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Nitrobenzene                | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| N-Nitrosodi-n-propylamine   | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| N-Nitrosodiphenylamine      | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Pentachlorophenol           | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Phenanthrene                | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Phenol                      | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Pyrene                      | ND     |      | 0.20          | µg/L  | 1               | 3/7/2014 08:01 PM  |
| Surr: 2,4,6-Tribromophenol  | 57.1   |      | 34-129        | %REC  | 1               | 3/7/2014 08:01 PM  |
| Surr: 2-Fluorobiphenyl      | 59.5   |      | 40-125        | %REC  | 1               | 3/7/2014 08:01 PM  |
| Surr: 2-Fluorophenol        | 55.7   |      | 20-120        | %REC  | 1               | 3/7/2014 08:01 PM  |
| Surr: 4-Terphenyl-d14       | 68.4   |      | 40-135        | %REC  | 1               | 3/7/2014 08:01 PM  |
| Surr: Nitrobenzene-d5       | 57.0   |      | 41-120        | %REC  | 1               | 3/7/2014 08:01 PM  |
| Surr: Phenol-d6             | 53.6   |      | 20-120        | %REC  | 1               | 3/7/2014 08:01 PM  |
| <b>VOLATILES - SW8260C</b>  |        |      | <b>SW8260</b> |       |                 | <b>Analyst: PC</b> |
| 1,1,1-Trichloroethane       | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 10:29 PM  |
| 1,1,2,2-Tetrachloroethane   | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 10:29 PM  |
| 1,1,2-Trichloroethane       | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 10:29 PM  |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 17-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** EB-B-2-28-14  
**Collection Date:** 2/28/2014 07:00 PM

**Work Order:** 14030092  
**Lab ID:** 14030092-04  
**Matrix:** GROUNDWATER

| Analyses                  | Result | Qual | Report Limit | Units | Dilution Factor | Date Analyzed     |
|---------------------------|--------|------|--------------|-------|-----------------|-------------------|
| 1,1-Dichloroethane        | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| 1,1-Dichloroethene        | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| 1,2,4-Trimethylbenzene    | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| 1,2-Dibromoethane         | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| 1,2-Dichloroethane        | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| 1,2-Dichloropropane       | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| 1,3,5-Trimethylbenzene    | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| 2-Butanone                | ND     |      | 0.010        | mg/L  | 1               | 3/4/2014 10:29 PM |
| 2-Hexanone                | ND     |      | 0.010        | mg/L  | 1               | 3/4/2014 10:29 PM |
| 4-Isopropyltoluene        | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| 4-Methyl-2-pentanone      | ND     |      | 0.010        | mg/L  | 1               | 3/4/2014 10:29 PM |
| Acetone                   | ND     |      | 0.010        | mg/L  | 1               | 3/4/2014 10:29 PM |
| Benzene                   | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| Bromodichloromethane      | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| Bromoform                 | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| Bromomethane              | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| Carbon disulfide          | ND     |      | 0.010        | mg/L  | 1               | 3/4/2014 10:29 PM |
| Carbon tetrachloride      | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| Chlorobenzene             | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| Chloroethane              | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| Chloroform                | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| Chloromethane             | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| cis-1,2-Dichloroethene    | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| cis-1,3-Dichloropropene   | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| Dibromochloromethane      | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| Ethylbenzene              | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| Isopropylbenzene          | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| m,p-Xylene                | ND     |      | 0.010        | mg/L  | 1               | 3/4/2014 10:29 PM |
| Methyl tert-butyl ether   | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| Methylene chloride        | ND     |      | 0.010        | mg/L  | 1               | 3/4/2014 10:29 PM |
| Naphthalene               | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| n-Butylbenzene            | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| n-Propylbenzene           | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| o-Xylene                  | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| sec-Butylbenzene          | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| Styrene                   | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| Tetrachloroethene         | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| Toluene                   | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| trans-1,2-Dichloroethene  | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |
| trans-1,3-Dichloropropene | ND     |      | 0.0050       | mg/L  | 1               | 3/4/2014 10:29 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 17-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** EB-B-2-28-14  
**Collection Date:** 2/28/2014 07:00 PM

**Work Order:** 14030092  
**Lab ID:** 14030092-04  
**Matrix:** GROUNDWATER

| Analyses                                     | Result | Qual | Report Limit      | Units    | Dilution Factor | Date Analyzed       |
|----------------------------------------------|--------|------|-------------------|----------|-----------------|---------------------|
| Trichloroethene                              | ND     |      | 0.0050            | mg/L     | 1               | 3/4/2014 10:29 PM   |
| Vinyl chloride                               | ND     |      | 0.0020            | mg/L     | 1               | 3/4/2014 10:29 PM   |
| Xylenes, Total                               | ND     |      | 0.015             | mg/L     | 1               | 3/4/2014 10:29 PM   |
| Surr: 1,2-Dichloroethane-d4                  | 83.0   |      | 70-125            | %REC     | 1               | 3/4/2014 10:29 PM   |
| Surr: 4-Bromofluorobenzene                   | 91.3   |      | 72-125            | %REC     | 1               | 3/4/2014 10:29 PM   |
| Surr: Dibromofluoromethane                   | 87.5   |      | 71-125            | %REC     | 1               | 3/4/2014 10:29 PM   |
| Surr: Toluene-d8                             | 97.3   |      | 75-125            | %REC     | 1               | 3/4/2014 10:29 PM   |
| <b>ANIONS - EPA 300.0 (1993)</b>             |        |      | <b>E300</b>       |          |                 | Analyst: <b>JKP</b> |
| Chloride                                     | ND     |      | 0.500             | mg/L     | 1               | 3/17/2014 03:10 PM  |
| Fluoride                                     | ND     |      | 0.100             | mg/L     | 1               | 3/17/2014 03:10 PM  |
| Sulfate                                      | ND     |      | 0.500             | mg/L     | 1               | 3/17/2014 03:10 PM  |
| Nitrate/Nitrite (as N)                       | ND     |      | 1.00              | mg/L     | 5               | 3/17/2014 12:50 PM  |
| <b>ALKALINITY-SM2320B</b>                    |        |      | <b>SM2320B</b>    |          |                 | Analyst: <b>PPM</b> |
| Alkalinity, Bicarbonate (As CaCO3)           | 156    |      | 10.0              | mg/L     | 1               | 3/4/2014 09:59 PM   |
| Alkalinity, Carbonate (As CaCO3)             | ND     |      | 10.0              | mg/L     | 1               | 3/4/2014 09:59 PM   |
| Alkalinity, Hydroxide (As CaCO3)             | ND     |      | 10.0              | mg/L     | 1               | 3/4/2014 09:59 PM   |
| Alkalinity, Total (As CaCO3)                 | 156    |      | 10.0              | mg/L     | 1               | 3/4/2014 09:59 PM   |
| <b>SPECIFIC CONDUCTIVITY</b>                 |        |      | <b>M2510 B</b>    |          |                 | Analyst: <b>PPM</b> |
| Specific Conductivity                        | 6.82   |      | 5.00              | µmhos/cm | 1               | 3/4/2014 09:59 PM   |
| <b>PH - SM4500H+ B</b>                       |        |      | <b>SM4500H+ B</b> |          |                 | Analyst: <b>PPM</b> |
| pH                                           | 7.40   | H    | 0.100             | pH Units | 1               | 3/4/2014 09:59 PM   |
| <b>TOTAL DISSOLVED SOLIDS</b>                |        |      | <b>M2540C</b>     |          |                 | Analyst: <b>KAH</b> |
| Total Dissolved Solids (Residue, Filterable) | ND     |      | 10.0              | mg/L     | 1               | 3/6/2014 04:45 PM   |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

# ALS Environmental

Date: 17-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** TB-3-3-14  
**Collection Date:** 2/28/2014

**Work Order:** 14030092  
**Lab ID:** 14030092-05  
**Matrix:** GROUNDWATER

| Analyses                   | Result | Qual | Report Limit  | Units | Dilution Factor | Date Analyzed     |
|----------------------------|--------|------|---------------|-------|-----------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        |      | <b>SW8260</b> |       |                 | Analyst: PC       |
| 1,1,1-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| 1,1,2,2-Tetrachloroethane  | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| 1,1,2-Trichloroethane      | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| 1,1-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| 1,1-Dichloroethene         | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| 1,2,4-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| 1,2-Dibromoethane          | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| 1,2-Dichloroethane         | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| 1,2-Dichloropropane        | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| 1,3,5-Trimethylbenzene     | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| 2-Butanone                 | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 08:56 PM |
| 2-Hexanone                 | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 08:56 PM |
| 4-Isopropyltoluene         | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| 4-Methyl-2-pentanone       | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 08:56 PM |
| Acetone                    | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 08:56 PM |
| Benzene                    | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| Bromodichloromethane       | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| Bromoform                  | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| Bromomethane               | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| Carbon disulfide           | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 08:56 PM |
| Carbon tetrachloride       | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| Chlorobenzene              | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| Chloroethane               | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| Chloroform                 | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| Chloromethane              | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| cis-1,2-Dichloroethene     | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| cis-1,3-Dichloropropene    | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| Dibromochloromethane       | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| Ethylbenzene               | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| Isopropylbenzene           | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| m,p-Xylene                 | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 08:56 PM |
| Methyl tert-butyl ether    | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| Methylene chloride         | ND     |      | 0.010         | mg/L  | 1               | 3/4/2014 08:56 PM |
| Naphthalene                | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| n-Butylbenzene             | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| n-Propylbenzene            | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| o-Xylene                   | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| sec-Butylbenzene           | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |
| Styrene                    | ND     |      | 0.0050        | mg/L  | 1               | 3/4/2014 08:56 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.



**ALS Environmental**

Date: 17-Mar-14

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**Sample ID:** TB-3-3-14  
**Collection Date:** 2/28/2014

**Work Order:** 14030092  
**Lab ID:** 14030092-05  
**Matrix:** GROUNDWATER

| Analyses                    | Result | Qual | Report<br>Limit | Units | Dilution<br>Factor | Date Analyzed     |
|-----------------------------|--------|------|-----------------|-------|--------------------|-------------------|
| Tetrachloroethene           | ND     |      | 0.0050          | mg/L  | 1                  | 3/4/2014 08:56 PM |
| Toluene                     | ND     |      | 0.0050          | mg/L  | 1                  | 3/4/2014 08:56 PM |
| trans-1,2-Dichloroethene    | ND     |      | 0.0050          | mg/L  | 1                  | 3/4/2014 08:56 PM |
| trans-1,3-Dichloropropene   | ND     |      | 0.0050          | mg/L  | 1                  | 3/4/2014 08:56 PM |
| Trichloroethene             | ND     |      | 0.0050          | mg/L  | 1                  | 3/4/2014 08:56 PM |
| Vinyl chloride              | ND     |      | 0.0020          | mg/L  | 1                  | 3/4/2014 08:56 PM |
| Xylenes, Total              | ND     |      | 0.015           | mg/L  | 1                  | 3/4/2014 08:56 PM |
| Surr: 1,2-Dichloroethane-d4 | 82.3   |      | 70-125          | %REC  | 1                  | 3/4/2014 08:56 PM |
| Surr: 4-Bromofluorobenzene  | 90.6   |      | 72-125          | %REC  | 1                  | 3/4/2014 08:56 PM |
| Surr: Dibromofluoromethane  | 86.1   |      | 71-125          | %REC  | 1                  | 3/4/2014 08:56 PM |
| Surr: Toluene-d8            | 95.2   |      | 75-125          | %REC  | 1                  | 3/4/2014 08:56 PM |

**Note:** See Qualifiers Page for a list of qualifiers and their explanation.

**Work Order:** 14030092  
**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual

**DATES REPORT**

| Sample ID                                                                            | Client Sample ID | Matrix      | Collection Date      | TCLP Date | Prep Date         | Analysis Date      |
|--------------------------------------------------------------------------------------|------------------|-------------|----------------------|-----------|-------------------|--------------------|
| <b><u>Batch ID 77246</u></b> <b><u>Test Name:</u></b> <u>Low-Level Semivolatiles</u> |                  |             |                      |           |                   |                    |
| 14030092-03E                                                                         | EB-A-2-28-14     | Groundwater | 2/28/2014 7:00:00 PM |           | 3/7/2014 07:37 AM | 3/11/2014 05:44 PM |
| 14030092-04E                                                                         | EB-B-2-28-14     |             |                      |           | 3/7/2014 07:37 AM | 3/7/2014 08:01 PM  |
| <b><u>Batch ID 77256</u></b> <b><u>Test Name:</u></b> <u>Mercury-SW7470A</u>         |                  |             |                      |           |                   |                    |
| 14030092-03                                                                          | EB-A-2-28-14     | Groundwater | 2/28/2014 7:00:00 PM |           | 3/7/2014 10:49 AM | 3/7/2014 03:19 PM  |
| 14030092-04                                                                          | EB-B-2-28-14     |             |                      |           | 3/7/2014 10:49 AM | 3/7/2014 03:21 PM  |
| <b><u>Batch ID R162292</u></b> <b><u>Test Name:</u></b> <u>Volatiles - SW8260C</u>   |                  |             |                      |           |                   |                    |
| 14030092-01                                                                          | MW-11            | Groundwater | 2/28/2014 6:25:00 PM |           |                   | 3/4/2014 09:19 PM  |
| 14030092-02                                                                          | MW-14            |             | 2/28/2014 6:45:00 PM |           |                   | 3/4/2014 09:42 PM  |
| 14030092-03                                                                          | EB-A-2-28-14     |             | 2/28/2014 7:00:00 PM |           |                   | 3/4/2014 10:05 PM  |
| 14030092-04                                                                          | EB-B-2-28-14     |             |                      |           |                   | 3/4/2014 10:29 PM  |
| 14030092-05                                                                          | TB-3-3-14        |             | 2/28/2014            |           |                   | 3/4/2014 08:56 PM  |
| <b><u>Batch ID R162344</u></b> <b><u>Test Name:</u></b> <u>Alkalinity-SM2320B</u>    |                  |             |                      |           |                   |                    |
| 14030092-03                                                                          | EB-A-2-28-14     | Groundwater | 2/28/2014 7:00:00 PM |           |                   | 3/4/2014 09:45 PM  |
| 14030092-04                                                                          | EB-B-2-28-14     |             |                      |           |                   | 3/4/2014 09:59 PM  |
| <b><u>Batch ID R162366</u></b> <b><u>Test Name:</u></b> <u>pH - SM4500H+ B</u>       |                  |             |                      |           |                   |                    |
| 14030092-03                                                                          | EB-A-2-28-14     | Groundwater | 2/28/2014 7:00:00 PM |           |                   | 3/4/2014 09:45 PM  |
| 14030092-04                                                                          | EB-B-2-28-14     |             |                      |           |                   | 3/4/2014 09:59 PM  |
| <b><u>Batch ID R162369</u></b> <b><u>Test Name:</u></b> <u>Specific Conductivity</u> |                  |             |                      |           |                   |                    |
| 14030092-03                                                                          | EB-A-2-28-14     | Groundwater | 2/28/2014 7:00:00 PM |           |                   | 3/4/2014 09:45 PM  |
| 14030092-04                                                                          | EB-B-2-28-14     |             |                      |           |                   | 3/4/2014 09:59 PM  |

**Work Order:** 14030092  
**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual

## DATES REPORT

| Sample ID                                                                     | Client Sample ID | Matrix      | Collection Date      | TCLP Date | Prep Date | Analysis Date      |
|-------------------------------------------------------------------------------|------------------|-------------|----------------------|-----------|-----------|--------------------|
| <b><u>Batch ID</u> R162428    <u>Test Name:</u> Volatiles - SW8260C</b>       |                  |             |                      |           |           |                    |
| 14030092-01<br>A                                                              | MW-11            | Groundwater | 2/28/2014 6:25:00 PM |           |           | 3/6/2014 03:34 PM  |
| <b><u>Batch ID</u> R162534    <u>Test Name:</u> Total Dissolved Solids</b>    |                  |             |                      |           |           |                    |
| 14030092-03<br>D                                                              | EB-A-2-28-14     | Groundwater | 2/28/2014 7:00:00 PM |           |           | 3/6/2014 04:45 PM  |
| 14030092-04<br>D                                                              | EB-B-2-28-14     |             |                      |           |           | 3/6/2014 04:45 PM  |
| <b><u>Batch ID</u> R162957    <u>Test Name:</u> Anions - EPA 300.0 (1993)</b> |                  |             |                      |           |           |                    |
| 14030092-03<br>D                                                              | EB-A-2-28-14     | Groundwater | 2/28/2014 7:00:00 PM |           |           | 3/17/2014 02:57 PM |
| 14030092-04<br>D                                                              | EB-B-2-28-14     |             |                      |           |           | 3/17/2014 03:10 PM |
| <b><u>Batch ID</u> R162963    <u>Test Name:</u> Anions - EPA 300.0 (1993)</b> |                  |             |                      |           |           |                    |
| 14030092-03<br>D                                                              | EB-A-2-28-14     | Groundwater | 2/28/2014 7:00:00 PM |           |           | 3/17/2014 12:26 PM |
| 14030092-04<br>D                                                              | EB-B-2-28-14     |             |                      |           |           | 3/17/2014 12:50 PM |

# ALS Environmental

Date: 17-Mar-14

**Client:** Navajo Refining Company  
**Work Order:** 14030092  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **77256** Instrument ID **HG03** Method: **SW7470**

|             |                                       |          |         |               |      |                       |                                         |              |           |      |
|-------------|---------------------------------------|----------|---------|---------------|------|-----------------------|-----------------------------------------|--------------|-----------|------|
| <b>MBLK</b> | Sample ID: <b>GBLKW3-030714-77256</b> |          |         |               |      | Units: <b>mg/L</b>    | Analysis Date: <b>3/7/2014 02:41 PM</b> |              |           |      |
| Client ID:  | Run ID: <b>HG03_140305A</b>           |          |         |               |      | SeqNo: <b>3557145</b> | Prep Date: <b>3/7/2014</b>              | DF: <b>1</b> |           |      |
| Analyte     | Result                                | PQL      | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value                           | %RPD         | RPD Limit | Qual |
| Mercury     | ND                                    | 0.000200 |         |               |      |                       |                                         |              |           |      |

|            |                                       |          |         |               |      |                       |                                         |              |           |      |
|------------|---------------------------------------|----------|---------|---------------|------|-----------------------|-----------------------------------------|--------------|-----------|------|
| <b>LCS</b> | Sample ID: <b>GLCSW3-030714-77256</b> |          |         |               |      | Units: <b>mg/L</b>    | Analysis Date: <b>3/7/2014 02:43 PM</b> |              |           |      |
| Client ID: | Run ID: <b>HG03_140305A</b>           |          |         |               |      | SeqNo: <b>3557146</b> | Prep Date: <b>3/7/2014</b>              | DF: <b>1</b> |           |      |
| Analyte    | Result                                | PQL      | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value                           | %RPD         | RPD Limit | Qual |
| Mercury    | 0.00537                               | 0.000200 | 0.005   | 0             | 107  | 80-124                |                                         |              |           |      |

|            |                                  |          |         |               |      |                       |                                         |              |           |      |
|------------|----------------------------------|----------|---------|---------------|------|-----------------------|-----------------------------------------|--------------|-----------|------|
| <b>MS</b>  | Sample ID: <b>14030001-02CMS</b> |          |         |               |      | Units: <b>mg/L</b>    | Analysis Date: <b>3/7/2014 02:48 PM</b> |              |           |      |
| Client ID: | Run ID: <b>HG03_140305A</b>      |          |         |               |      | SeqNo: <b>3557150</b> | Prep Date: <b>3/7/2014</b>              | DF: <b>1</b> |           |      |
| Analyte    | Result                           | PQL      | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value                           | %RPD         | RPD Limit | Qual |
| Mercury    | 0.00464                          | 0.000200 | 0.005   | -0.000037     | 93.5 | 80-124                |                                         |              |           |      |

|            |                                   |          |         |               |      |                       |                                         |              |           |      |
|------------|-----------------------------------|----------|---------|---------------|------|-----------------------|-----------------------------------------|--------------|-----------|------|
| <b>MSD</b> | Sample ID: <b>14030001-02CMSD</b> |          |         |               |      | Units: <b>mg/L</b>    | Analysis Date: <b>3/7/2014 02:57 PM</b> |              |           |      |
| Client ID: | Run ID: <b>HG03_140305A</b>       |          |         |               |      | SeqNo: <b>3557151</b> | Prep Date: <b>3/7/2014</b>              | DF: <b>1</b> |           |      |
| Analyte    | Result                            | PQL      | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value                           | %RPD         | RPD Limit | Qual |
| Mercury    | 0.00525                           | 0.000200 | 0.005   | -0.000037     | 106  | 80-124                | 0.00464                                 | 12.3         | 20        |      |

|            |                                   |          |         |               |      |                       |                                         |              |           |      |
|------------|-----------------------------------|----------|---------|---------------|------|-----------------------|-----------------------------------------|--------------|-----------|------|
| <b>DUP</b> | Sample ID: <b>14030001-02CDUP</b> |          |         |               |      | Units: <b>mg/L</b>    | Analysis Date: <b>3/7/2014 02:46 PM</b> |              |           |      |
| Client ID: | Run ID: <b>HG03_140305A</b>       |          |         |               |      | SeqNo: <b>3557149</b> | Prep Date: <b>3/7/2014</b>              | DF: <b>1</b> |           |      |
| Analyte    | Result                            | PQL      | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value                           | %RPD         | RPD Limit | Qual |
| Mercury    | ND                                | 0.000200 |         |               |      |                       | -0.000037                               | 0            | 20        |      |

The following samples were analyzed in this batch:

14030092-03C 14030092-04C

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

QC Page: 1 of 25

**Client:** Navajo Refining Company  
**Work Order:** 14030092  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **77246** Instrument ID **SV-4** Method: **SW8270**

**MBLK** Sample ID: **SBLKW2-140307-77246** Units: **µg/L** Analysis Date: **3/7/2014 11:40 AM**  
 Client ID: Run ID: **SV-4\_140307A** SeqNo: **3559141** Prep Date: **3/7/2014** DF: **1**

| Analyte                     | Result | PQL  | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|-----------------------------|--------|------|---------|---------------|------|---------------|---------------|------|-----------|------|
| 1,1'-Biphenyl               | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 1-Methylnaphthalene         | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2,4,5-Trichlorophenol       | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2,4,6-Trichlorophenol       | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2,4-Dichlorophenol          | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2,4-Dimethylphenol          | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2,4-Dinitrophenol           | ND     | 1.0  |         |               |      |               |               |      |           |      |
| 2,4-Dinitrotoluene          | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2,6-Dinitrotoluene          | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2-Chloronaphthalene         | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2-Chlorophenol              | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2-Methylnaphthalene         | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2-Methylphenol              | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2-Nitroaniline              | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 2-Nitrophenol               | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 3&4-Methylphenol            | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 3,3'-Dichlorobenzidine      | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 3-Nitroaniline              | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 4,6-Dinitro-2-methylphenol  | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 4-Bromophenyl phenyl ether  | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 4-Chloro-3-methylphenol     | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 4-Chloroaniline             | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 4-Chlorophenyl phenyl ether | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 4-Nitroaniline              | ND     | 0.20 |         |               |      |               |               |      |           |      |
| 4-Nitrophenol               | ND     | 1.0  |         |               |      |               |               |      |           |      |
| Acenaphthene                | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Acenaphthylene              | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Acetophenone                | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Anthracene                  | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Atrazine                    | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Benz(a)anthracene           | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Benzaldehyde                | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Benzo(a)pyrene              | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Benzo(b)fluoranthene        | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Benzo(g,h,i)perylene        | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Benzo(k)fluoranthene        | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Bis(2-chloroethoxy)methane  | ND     | 0.20 |         |               |      |               |               |      |           |      |
| Bis(2-chloroethyl)ether     | ND     | 0.20 |         |               |      |               |               |      |           |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030092  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

| Batch ID: <b>77246</b>            |       | Instrument ID <b>SV-4</b> |   | Method: <b>SW8270</b> |      |        |   |  |
|-----------------------------------|-------|---------------------------|---|-----------------------|------|--------|---|--|
| Bis(2-chloroisopropyl)ether       | ND    | 0.20                      |   |                       |      |        |   |  |
| Bis(2-ethylhexyl)phthalate        | ND    | 0.20                      |   |                       |      |        |   |  |
| Butyl benzyl phthalate            | ND    | 0.20                      |   |                       |      |        |   |  |
| Caprolactam                       | ND    | 0.20                      |   |                       |      |        |   |  |
| Carbazole                         | ND    | 0.20                      |   |                       |      |        |   |  |
| Chrysene                          | ND    | 0.20                      |   |                       |      |        |   |  |
| Dibenz(a,h)anthracene             | ND    | 0.20                      |   |                       |      |        |   |  |
| Dibenzofuran                      | ND    | 0.20                      |   |                       |      |        |   |  |
| Diethyl phthalate                 | ND    | 0.20                      |   |                       |      |        |   |  |
| Dimethyl phthalate                | ND    | 0.20                      |   |                       |      |        |   |  |
| Di-n-butyl phthalate              | ND    | 0.20                      |   |                       |      |        |   |  |
| Di-n-octyl phthalate              | ND    | 0.20                      |   |                       |      |        |   |  |
| Fluoranthene                      | ND    | 0.20                      |   |                       |      |        |   |  |
| Fluorene                          | ND    | 0.20                      |   |                       |      |        |   |  |
| Hexachlorobenzene                 | ND    | 0.20                      |   |                       |      |        |   |  |
| Hexachlorobutadiene               | ND    | 0.20                      |   |                       |      |        |   |  |
| Hexachlorocyclopentadiene         | ND    | 0.20                      |   |                       |      |        |   |  |
| Hexachloroethane                  | ND    | 0.20                      |   |                       |      |        |   |  |
| Indeno(1,2,3-cd)pyrene            | ND    | 0.20                      |   |                       |      |        |   |  |
| Isophorone                        | ND    | 0.20                      |   |                       |      |        |   |  |
| Naphthalene                       | ND    | 0.20                      |   |                       |      |        |   |  |
| Nitrobenzene                      | ND    | 0.20                      |   |                       |      |        |   |  |
| N-Nitrosodi-n-propylamine         | ND    | 0.20                      |   |                       |      |        |   |  |
| N-Nitrosodiphenylamine            | ND    | 0.20                      |   |                       |      |        |   |  |
| Pentachlorophenol                 | ND    | 0.20                      |   |                       |      |        |   |  |
| Phenanthrene                      | ND    | 0.20                      |   |                       |      |        |   |  |
| Phenol                            | ND    | 0.20                      |   |                       |      |        |   |  |
| Pyrene                            | ND    | 0.20                      |   |                       |      |        |   |  |
| <i>Surr: 2,4,6-Tribromophenol</i> | 3.966 | 0.20                      | 5 | 0                     | 79.3 | 34-129 | 0 |  |
| <i>Surr: 2-Fluorobiphenyl</i>     | 3.878 | 0.20                      | 5 | 0                     | 77.6 | 40-125 | 0 |  |
| <i>Surr: 2-Fluorophenol</i>       | 3.279 | 0.20                      | 5 | 0                     | 65.6 | 20-120 | 0 |  |
| <i>Surr: 4-Terphenyl-d14</i>      | 3.899 | 0.20                      | 5 | 0                     | 78   | 40-135 | 0 |  |
| <i>Surr: Nitrobenzene-d5</i>      | 3.328 | 0.20                      | 5 | 0                     | 66.6 | 41-120 | 0 |  |
| <i>Surr: Phenol-d6</i>            | 3.303 | 0.20                      | 5 | 0                     | 66.1 | 20-120 | 0 |  |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030092  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **77246** Instrument ID **SV-4** Method: **SW8270**

| LCS                         |        |                             |         | Sample ID: <b>SLCSW2-140307-77246</b> |                       | Units: <b>µg/L</b> |                            | Analysis Date: <b>3/7/2014 12:01 PM</b> |              |      |
|-----------------------------|--------|-----------------------------|---------|---------------------------------------|-----------------------|--------------------|----------------------------|-----------------------------------------|--------------|------|
| Client ID:                  |        | Run ID: <b>SV-4_140307A</b> |         |                                       | SeqNo: <b>3559142</b> |                    | Prep Date: <b>3/7/2014</b> |                                         | DF: <b>1</b> |      |
| Analyte                     | Result | PQL                         | SPK Val | SPK Ref Value                         | %REC                  | Control Limit      | RPD Ref Value              | %RPD                                    | RPD Limit    | Qual |
| 1,1'-Biphenyl               | 4.207  | 0.20                        | 5       | 0                                     | 84.1                  | 45-125             |                            |                                         |              |      |
| 1-Methylnaphthalene         | 3.708  | 0.20                        | 5       | 0                                     | 74.2                  | 45-120             |                            |                                         |              |      |
| 2,4,5-Trichlorophenol       | 3.871  | 0.20                        | 5       | 0                                     | 77.4                  | 46-120             |                            |                                         |              |      |
| 2,4,6-Trichlorophenol       | 3.967  | 0.20                        | 5       | 0                                     | 79.3                  | 42-120             |                            |                                         |              |      |
| 2,4-Dichlorophenol          | 3.876  | 0.20                        | 5       | 0                                     | 77.5                  | 49-120             |                            |                                         |              |      |
| 2,4-Dimethylphenol          | 3.676  | 0.20                        | 5       | 0                                     | 73.5                  | 35-120             |                            |                                         |              |      |
| 2,4-Dinitrophenol           | 4.415  | 1.0                         | 5       | 0                                     | 88.3                  | 15-120             |                            |                                         |              |      |
| 2,4-Dinitrotoluene          | 3.956  | 0.20                        | 5       | 0                                     | 79.1                  | 50-122             |                            |                                         |              |      |
| 2,6-Dinitrotoluene          | 3.855  | 0.20                        | 5       | 0                                     | 77.1                  | 50-120             |                            |                                         |              |      |
| 2-Chloronaphthalene         | 3.682  | 0.20                        | 5       | 0                                     | 73.6                  | 50-120             |                            |                                         |              |      |
| 2-Chlorophenol              | 3.482  | 0.20                        | 5       | 0                                     | 69.6                  | 40-120             |                            |                                         |              |      |
| 2-Methylnaphthalene         | 3.808  | 0.20                        | 5       | 0                                     | 76.2                  | 50-120             |                            |                                         |              |      |
| 2-Methylphenol              | 3.412  | 0.20                        | 5       | 0                                     | 68.2                  | 45-120             |                            |                                         |              |      |
| 2-Nitroaniline              | 4.123  | 0.20                        | 5       | 0                                     | 82.5                  | 28-139             |                            |                                         |              |      |
| 2-Nitrophenol               | 3.889  | 0.20                        | 5       | 0                                     | 77.8                  | 40-120             |                            |                                         |              |      |
| 3&4-Methylphenol            | 3.561  | 0.20                        | 5       | 0                                     | 71.2                  | 35-120             |                            |                                         |              |      |
| 3,3'-Dichlorobenzidine      | 4.995  | 0.20                        | 5       | 0                                     | 99.9                  | 15-120             |                            |                                         |              |      |
| 3-Nitroaniline              | 3.84   | 0.20                        | 5       | 0                                     | 76.8                  | 30-120             |                            |                                         |              |      |
| 4,6-Dinitro-2-methylphenol  | 4.395  | 0.20                        | 5       | 0                                     | 87.9                  | 25-121             |                            |                                         |              |      |
| 4-Bromophenyl phenyl ether  | 3.964  | 0.20                        | 5       | 0                                     | 79.3                  | 45-120             |                            |                                         |              |      |
| 4-Chloro-3-methylphenol     | 3.777  | 0.20                        | 5       | 0                                     | 75.5                  | 47-120             |                            |                                         |              |      |
| 4-Chloroaniline             | 3.536  | 0.20                        | 5       | 0                                     | 70.7                  | 20-120             |                            |                                         |              |      |
| 4-Chlorophenyl phenyl ether | 3.861  | 0.20                        | 5       | 0                                     | 77.2                  | 50-120             |                            |                                         |              |      |
| 4-Nitroaniline              | 3.836  | 0.20                        | 5       | 0                                     | 76.7                  | 30-133             |                            |                                         |              |      |
| 4-Nitrophenol               | 4.213  | 1.0                         | 5       | 0                                     | 84.3                  | 30-130             |                            |                                         |              |      |
| Acenaphthene                | 3.998  | 0.20                        | 5       | 0                                     | 80                    | 45-120             |                            |                                         |              |      |
| Acenaphthylene              | 3.885  | 0.20                        | 5       | 0                                     | 77.7                  | 47-120             |                            |                                         |              |      |
| Acetophenone                | 3.893  | 0.20                        | 5       | 0                                     | 77.9                  | 40-120             |                            |                                         |              |      |
| Anthracene                  | 3.776  | 0.20                        | 5       | 0                                     | 75.5                  | 45-120             |                            |                                         |              |      |
| Atrazine                    | 4.649  | 0.20                        | 5       | 0                                     | 93                    | 40-130             |                            |                                         |              |      |
| Benz(a)anthracene           | 3.786  | 0.20                        | 5       | 0                                     | 75.7                  | 40-120             |                            |                                         |              |      |
| Benzaldehyde                | 0.8087 | 0.20                        | 5       | 0                                     | 16.2                  | 15-120             |                            |                                         |              |      |
| Benzo(a)pyrene              | 3.976  | 0.20                        | 5       | 0                                     | 79.5                  | 45-120             |                            |                                         |              |      |
| Benzo(b)fluoranthene        | 4.065  | 0.20                        | 5       | 0                                     | 81.3                  | 50-120             |                            |                                         |              |      |
| Benzo(g,h,i)perylene        | 3.932  | 0.20                        | 5       | 0                                     | 78.6                  | 42-127             |                            |                                         |              |      |
| Benzo(k)fluoranthene        | 4.182  | 0.20                        | 5       | 0                                     | 83.6                  | 45-127             |                            |                                         |              |      |
| Bis(2-chloroethoxy)methane  | 3.37   | 0.20                        | 5       | 0                                     | 67.4                  | 45-120             |                            |                                         |              |      |
| Bis(2-chloroethyl)ether     | 3.179  | 0.20                        | 5       | 0                                     | 63.6                  | 37-121             |                            |                                         |              |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030092  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

| Batch ID: <b>77246</b>            |       | Instrument ID <b>SV-4</b> |   | Method: <b>SW8270</b> |      |        |   |
|-----------------------------------|-------|---------------------------|---|-----------------------|------|--------|---|
| Bis(2-chloroisopropyl)ether       | 3.432 | 0.20                      | 5 | 0                     | 68.6 | 40-120 |   |
| Bis(2-ethylhexyl)phthalate        | 3.818 | 0.20                      | 5 | 0                     | 76.4 | 40-139 |   |
| Butyl benzyl phthalate            | 3.886 | 0.20                      | 5 | 0                     | 77.7 | 47-123 |   |
| Caprolactam                       | 4.047 | 0.20                      | 5 | 0                     | 80.9 | 35-134 |   |
| Carbazole                         | 3.834 | 0.20                      | 5 | 0                     | 76.7 | 42-128 |   |
| Chrysene                          | 3.906 | 0.20                      | 5 | 0                     | 78.1 | 43-120 |   |
| Dibenz(a,h)anthracene             | 4.145 | 0.20                      | 5 | 0                     | 82.9 | 45-125 |   |
| Dibenzofuran                      | 3.903 | 0.20                      | 5 | 0                     | 78.1 | 50-120 |   |
| Diethyl phthalate                 | 3.714 | 0.20                      | 5 | 0                     | 74.3 | 41-120 |   |
| Dimethyl phthalate                | 3.836 | 0.20                      | 5 | 0                     | 76.7 | 40-122 |   |
| Di-n-butyl phthalate              | 3.962 | 0.20                      | 5 | 0                     | 79.2 | 45-123 |   |
| Di-n-octyl phthalate              | 3.758 | 0.20                      | 5 | 0                     | 75.2 | 45-129 |   |
| Fluoranthene                      | 3.775 | 0.20                      | 5 | 0                     | 75.5 | 45-125 |   |
| Fluorene                          | 3.81  | 0.20                      | 5 | 0                     | 76.2 | 49-120 |   |
| Hexachlorobenzene                 | 4.139 | 0.20                      | 5 | 0                     | 82.8 | 48-120 |   |
| Hexachlorobutadiene               | 3.892 | 0.20                      | 5 | 0                     | 77.8 | 40-120 |   |
| Hexachlorocyclopentadiene         | 4.134 | 0.20                      | 5 | 0                     | 82.7 | 34-136 |   |
| Hexachloroethane                  | 3.321 | 0.20                      | 5 | 0                     | 66.4 | 40-120 |   |
| Indeno(1,2,3-cd)pyrene            | 3.888 | 0.20                      | 5 | 0                     | 77.8 | 41-128 |   |
| Isophorone                        | 3.377 | 0.20                      | 5 | 0                     | 67.5 | 40-121 |   |
| Naphthalene                       | 3.777 | 0.20                      | 5 | 0                     | 75.5 | 45-120 |   |
| Nitrobenzene                      | 3.482 | 0.20                      | 5 | 0                     | 69.6 | 44-120 |   |
| N-Nitrosodi-n-propylamine         | 3.093 | 0.20                      | 5 | 0                     | 61.9 | 40-120 |   |
| N-Nitrosodiphenylamine            | 3.568 | 0.20                      | 5 | 0                     | 71.4 | 40-125 |   |
| Pentachlorophenol                 | 4.867 | 0.20                      | 5 | 0                     | 97.3 | 19-121 |   |
| Phenanthrene                      | 3.728 | 0.20                      | 5 | 0                     | 74.6 | 45-121 |   |
| Phenol                            | 3.35  | 0.20                      | 5 | 0                     | 67   | 20-124 |   |
| Pyrene                            | 3.912 | 0.20                      | 5 | 0                     | 78.2 | 40-130 |   |
| <i>Surr: 2,4,6-Tribromophenol</i> | 4.877 | 0.20                      | 5 | 0                     | 97.5 | 34-129 | 0 |
| <i>Surr: 2-Fluorobiphenyl</i>     | 3.916 | 0.20                      | 5 | 0                     | 78.3 | 40-125 | 0 |
| <i>Surr: 2-Fluorophenol</i>       | 3.515 | 0.20                      | 5 | 0                     | 70.3 | 20-120 | 0 |
| <i>Surr: 4-Terphenyl-d14</i>      | 4.059 | 0.20                      | 5 | 0                     | 81.2 | 40-135 | 0 |
| <i>Surr: Nitrobenzene-d5</i>      | 3.497 | 0.20                      | 5 | 0                     | 69.9 | 41-120 | 0 |
| <i>Surr: Phenol-d6</i>            | 3.407 | 0.20                      | 5 | 0                     | 68.1 | 20-120 | 0 |

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**Client:** Navajo Refining Company  
**Work Order:** 14030092  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **77246** Instrument ID **SV-4** Method: **SW8270**

| MS                          |        |                      |         | Sample ID: 14030181-02FMS |               | Units: µg/L   |                     | Analysis Date: 3/7/2014 01:45 PM |           |      |
|-----------------------------|--------|----------------------|---------|---------------------------|---------------|---------------|---------------------|----------------------------------|-----------|------|
| Client ID:                  |        | Run ID: SV-4_140307A |         |                           | SeqNo:3559147 |               | Prep Date: 3/7/2014 |                                  | DF: 1     |      |
| Analyte                     | Result | PQL                  | SPK Val | SPK Ref Value             | %REC          | Control Limit | RPD Ref Value       | %RPD                             | RPD Limit | Qual |
| 1,1'-Biphenyl               | 3.854  | 0.20                 | 5       | 0                         | 77.1          | 45-125        |                     |                                  |           |      |
| 1-Methylnaphthalene         | 3.213  | 0.20                 | 5       | 0                         | 64.3          | 45-120        |                     |                                  |           |      |
| 2,4,5-Trichlorophenol       | 3.796  | 0.20                 | 5       | 0                         | 75.9          | 46-120        |                     |                                  |           |      |
| 2,4,6-Trichlorophenol       | 3.646  | 0.20                 | 5       | 0                         | 72.9          | 42-120        |                     |                                  |           |      |
| 2,4-Dichlorophenol          | 3.387  | 0.20                 | 5       | 0                         | 67.7          | 49-120        |                     |                                  |           |      |
| 2,4-Dimethylphenol          | 3.089  | 0.20                 | 5       | 0                         | 61.8          | 35-120        |                     |                                  |           |      |
| 2,4-Dinitrophenol           | 4.48   | 1.0                  | 5       | 0                         | 89.6          | 15-120        |                     |                                  |           |      |
| 2,4-Dinitrotoluene          | 3.757  | 0.20                 | 5       | 0                         | 75.1          | 50-122        |                     |                                  |           |      |
| 2,6-Dinitrotoluene          | 3.537  | 0.20                 | 5       | 0                         | 70.7          | 50-120        |                     |                                  |           |      |
| 2-Chloronaphthalene         | 3.341  | 0.20                 | 5       | 0                         | 66.8          | 50-120        |                     |                                  |           |      |
| 2-Chlorophenol              | 3.176  | 0.20                 | 5       | 0                         | 63.5          | 40-120        |                     |                                  |           |      |
| 2-Methylnaphthalene         | 3.367  | 0.20                 | 5       | 0                         | 67.3          | 50-120        |                     |                                  |           |      |
| 2-Methylphenol              | 3.108  | 0.20                 | 5       | 0                         | 62.2          | 45-120        |                     |                                  |           |      |
| 2-Nitroaniline              | 3.701  | 0.20                 | 5       | 0                         | 74            | 28-139        |                     |                                  |           |      |
| 2-Nitrophenol               | 3.421  | 0.20                 | 5       | 0                         | 68.4          | 40-120        |                     |                                  |           |      |
| 3&4-Methylphenol            | 3.249  | 0.20                 | 5       | 0                         | 65            | 35-120        |                     |                                  |           |      |
| 3,3'-Dichlorobenzidine      | 2.587  | 0.20                 | 5       | 0                         | 51.7          | 15-120        |                     |                                  |           |      |
| 3-Nitroaniline              | 3.045  | 0.20                 | 5       | 0                         | 60.9          | 30-120        |                     |                                  |           |      |
| 4,6-Dinitro-2-methylphenol  | 4.308  | 0.20                 | 5       | 0                         | 86.2          | 25-121        |                     |                                  |           |      |
| 4-Bromophenyl phenyl ether  | 3.569  | 0.20                 | 5       | 0                         | 71.4          | 45-120        |                     |                                  |           |      |
| 4-Chloro-3-methylphenol     | 3.39   | 0.20                 | 5       | 0                         | 67.8          | 47-120        |                     |                                  |           |      |
| 4-Chloroaniline             | 2.169  | 0.20                 | 5       | 0                         | 43.4          | 20-120        |                     |                                  |           |      |
| 4-Chlorophenyl phenyl ether | 3.473  | 0.20                 | 5       | 0                         | 69.5          | 50-120        |                     |                                  |           |      |
| 4-Nitroaniline              | 3.456  | 0.20                 | 5       | 0                         | 69.1          | 30-133        |                     |                                  |           |      |
| 4-Nitrophenol               | 4.129  | 1.0                  | 5       | 0                         | 82.6          | 30-130        |                     |                                  |           |      |
| Acenaphthene                | 3.336  | 0.20                 | 5       | 0                         | 66.7          | 45-120        |                     |                                  |           |      |
| Acenaphthylene              | 3.493  | 0.20                 | 5       | 0                         | 69.9          | 47-120        |                     |                                  |           |      |
| Acetophenone                | 3.434  | 0.20                 | 5       | 0                         | 68.7          | 40-120        |                     |                                  |           |      |
| Anthracene                  | 3.653  | 0.20                 | 5       | 0                         | 73.1          | 45-120        |                     |                                  |           |      |
| Atrazine                    | 4.374  | 0.20                 | 5       | 0                         | 87.5          | 40-130        |                     |                                  |           |      |
| Benz(a)anthracene           | 3.633  | 0.20                 | 5       | 0                         | 72.7          | 40-120        |                     |                                  |           |      |
| Benzaldehyde                | 0.8385 | 0.20                 | 5       | 0                         | 16.8          | 15-120        |                     |                                  |           |      |
| Benzo(a)pyrene              | 3.79   | 0.20                 | 5       | 0                         | 75.8          | 45-120        |                     |                                  |           |      |
| Benzo(b)fluoranthene        | 4.424  | 0.20                 | 5       | 0                         | 88.5          | 50-120        |                     |                                  |           |      |
| Benzo(g,h,i)perylene        | 3.759  | 0.20                 | 5       | 0                         | 75.2          | 42-127        |                     |                                  |           |      |
| Benzo(k)fluoranthene        | 3.979  | 0.20                 | 5       | 0                         | 79.6          | 45-127        |                     |                                  |           |      |
| Bis(2-chloroethoxy)methane  | 2.923  | 0.20                 | 5       | 0                         | 58.5          | 45-120        |                     |                                  |           |      |
| Bis(2-chloroethyl)ether     | 2.997  | 0.20                 | 5       | 0.08614                   | 58.2          | 37-121        |                     |                                  |           |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

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**Work Order:** 14030092  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

| Batch ID: <b>77246</b>            |       | Instrument ID <b>SV-4</b> |   | Method: <b>SW8270</b> |      |        |   |
|-----------------------------------|-------|---------------------------|---|-----------------------|------|--------|---|
| Bis(2-chloroisopropyl)ether       | 7.844 | 0.20                      | 5 | 4.339                 | 70.1 | 40-120 |   |
| Bis(2-ethylhexyl)phthalate        | 3.621 | 0.20                      | 5 | 0.08023               | 70.8 | 40-139 |   |
| Butyl benzyl phthalate            | 3.667 | 0.20                      | 5 | 0                     | 73.3 | 47-123 |   |
| Caprolactam                       | 3.755 | 0.20                      | 5 | 0                     | 75.1 | 35-134 |   |
| Carbazole                         | 4.256 | 0.20                      | 5 | 0                     | 85.1 | 42-128 |   |
| Chrysene                          | 3.487 | 0.20                      | 5 | 0                     | 69.7 | 43-120 |   |
| Dibenz(a,h)anthracene             | 3.935 | 0.20                      | 5 | 0                     | 78.7 | 45-125 |   |
| Dibenzofuran                      | 3.479 | 0.20                      | 5 | 0                     | 69.6 | 50-120 |   |
| Diethyl phthalate                 | 3.514 | 0.20                      | 5 | 0                     | 70.3 | 41-120 |   |
| Dimethyl phthalate                | 3.501 | 0.20                      | 5 | 0                     | 70   | 40-122 |   |
| Di-n-butyl phthalate              | 3.88  | 0.20                      | 5 | 0                     | 77.6 | 45-123 |   |
| Di-n-octyl phthalate              | 3.656 | 0.20                      | 5 | 0.0503                | 72.1 | 45-129 |   |
| Fluoranthene                      | 3.674 | 0.20                      | 5 | 0                     | 73.5 | 45-125 |   |
| Fluorene                          | 3.493 | 0.20                      | 5 | 0                     | 69.9 | 49-120 |   |
| Hexachlorobenzene                 | 3.828 | 0.20                      | 5 | 0                     | 76.6 | 48-120 |   |
| Hexachlorobutadiene               | 3.401 | 0.20                      | 5 | 0                     | 68   | 40-120 |   |
| Hexachlorocyclopentadiene         | 3.71  | 0.20                      | 5 | 0                     | 74.2 | 34-136 |   |
| Hexachloroethane                  | 3.028 | 0.20                      | 5 | 0                     | 60.6 | 40-120 |   |
| Indeno(1,2,3-cd)pyrene            | 3.629 | 0.20                      | 5 | 0                     | 72.6 | 41-128 |   |
| Isophorone                        | 2.955 | 0.20                      | 5 | 0                     | 59.1 | 40-121 |   |
| Naphthalene                       | 3.361 | 0.20                      | 5 | 0                     | 67.2 | 45-120 |   |
| Nitrobenzene                      | 2.973 | 0.20                      | 5 | 0                     | 59.5 | 44-120 |   |
| N-Nitrosodi-n-propylamine         | 2.774 | 0.20                      | 5 | 0                     | 55.5 | 40-120 |   |
| N-Nitrosodiphenylamine            | 3.419 | 0.20                      | 5 | 0                     | 68.4 | 40-125 |   |
| Pentachlorophenol                 | 4.861 | 0.20                      | 5 | 0                     | 97.2 | 19-121 |   |
| Phenanthrene                      | 3.627 | 0.20                      | 5 | 0                     | 72.5 | 45-121 |   |
| Phenol                            | 3.021 | 0.20                      | 5 | 0                     | 60.4 | 20-124 |   |
| Pyrene                            | 3.636 | 0.20                      | 5 | 0                     | 72.7 | 40-130 |   |
| <i>Surr: 2,4,6-Tribromophenol</i> | 4.688 | 0.20                      | 5 | 0                     | 93.8 | 34-129 | 0 |
| <i>Surr: 2-Fluorobiphenyl</i>     | 3.563 | 0.20                      | 5 | 0                     | 71.3 | 40-125 | 0 |
| <i>Surr: 2-Fluorophenol</i>       | 3.146 | 0.20                      | 5 | 0                     | 62.9 | 20-120 | 0 |
| <i>Surr: 4-Terphenyl-d14</i>      | 4.059 | 0.20                      | 5 | 0                     | 81.2 | 40-135 | 0 |
| <i>Surr: Nitrobenzene-d5</i>      | 3.121 | 0.20                      | 5 | 0                     | 62.4 | 41-120 | 0 |
| <i>Surr: Phenol-d6</i>            | 3.183 | 0.20                      | 5 | 0                     | 63.7 | 20-120 | 0 |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030092  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **77246** Instrument ID **SV-4** Method: **SW8270**

| MSD                         |        | Sample ID: <b>14030181-02FMSD</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>3/7/2014 02:06 PM</b> |           |              |
|-----------------------------|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|-----------------------------------------|-----------|--------------|
| Client ID:                  |        | Run ID: <b>SV-4_140307A</b>       |         |               |      | SeqNo: <b>3559148</b> |               | Prep Date: <b>3/7/2014</b>              |           | DF: <b>1</b> |
| Analyte                     | Result | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                    | RPD Limit | Qual         |
| 1,1'-Biphenyl               | 3.828  | 0.20                              | 5       | 0             | 76.6 | 45-125                | 3.854         | 0.678                                   | 20        |              |
| 1-Methylnaphthalene         | 3.222  | 0.20                              | 5       | 0             | 64.4 | 45-120                | 3.213         | 0.274                                   | 20        |              |
| 2,4,5-Trichlorophenol       | 3.573  | 0.20                              | 5       | 0             | 71.5 | 46-120                | 3.796         | 6.05                                    | 20        |              |
| 2,4,6-Trichlorophenol       | 3.473  | 0.20                              | 5       | 0             | 69.5 | 42-120                | 3.646         | 4.86                                    | 20        |              |
| 2,4-Dichlorophenol          | 3.335  | 0.20                              | 5       | 0             | 66.7 | 49-120                | 3.387         | 1.56                                    | 20        |              |
| 2,4-Dimethylphenol          | 3.138  | 0.20                              | 5       | 0             | 62.8 | 35-120                | 3.089         | 1.57                                    | 20        |              |
| 2,4-Dinitrophenol           | 4.39   | 1.0                               | 5       | 0             | 87.8 | 15-120                | 4.48          | 2.02                                    | 50        |              |
| 2,4-Dinitrotoluene          | 3.758  | 0.20                              | 5       | 0             | 75.2 | 50-122                | 3.757         | 0.036                                   | 20        |              |
| 2,6-Dinitrotoluene          | 3.713  | 0.20                              | 5       | 0             | 74.3 | 50-120                | 3.537         | 4.86                                    | 20        |              |
| 2-Chloronaphthalene         | 3.139  | 0.20                              | 5       | 0             | 62.8 | 50-120                | 3.341         | 6.23                                    | 20        |              |
| 2-Chlorophenol              | 3.074  | 0.20                              | 5       | 0             | 61.5 | 40-120                | 3.176         | 3.26                                    | 20        |              |
| 2-Methylnaphthalene         | 3.308  | 0.20                              | 5       | 0             | 66.2 | 50-120                | 3.367         | 1.75                                    | 20        |              |
| 2-Methylphenol              | 2.987  | 0.20                              | 5       | 0             | 59.7 | 45-120                | 3.108         | 3.95                                    | 20        |              |
| 2-Nitroaniline              | 3.67   | 0.20                              | 5       | 0             | 73.4 | 28-139                | 3.701         | 0.838                                   | 20        |              |
| 2-Nitrophenol               | 3.407  | 0.20                              | 5       | 0             | 68.1 | 40-120                | 3.421         | 0.405                                   | 20        |              |
| 3&4-Methylphenol            | 3.154  | 0.20                              | 5       | 0             | 63.1 | 35-120                | 3.249         | 2.97                                    | 20        |              |
| 3,3'-Dichlorobenzidine      | 2.897  | 0.20                              | 5       | 0             | 57.9 | 15-120                | 2.587         | 11.3                                    | 20        |              |
| 3-Nitroaniline              | 3.232  | 0.20                              | 5       | 0             | 64.6 | 30-120                | 3.045         | 5.96                                    | 20        |              |
| 4,6-Dinitro-2-methylphenol  | 4.266  | 0.20                              | 5       | 0             | 85.3 | 25-121                | 4.308         | 0.967                                   | 20        |              |
| 4-Bromophenyl phenyl ether  | 3.476  | 0.20                              | 5       | 0             | 69.5 | 45-120                | 3.569         | 2.65                                    | 20        |              |
| 4-Chloro-3-methylphenol     | 3.306  | 0.20                              | 5       | 0             | 66.1 | 47-120                | 3.39          | 2.51                                    | 20        |              |
| 4-Chloroaniline             | 2.428  | 0.20                              | 5       | 0             | 48.6 | 20-120                | 2.169         | 11.3                                    | 20        |              |
| 4-Chlorophenyl phenyl ether | 3.497  | 0.20                              | 5       | 0             | 69.9 | 50-120                | 3.473         | 0.676                                   | 20        |              |
| 4-Nitroaniline              | 3.751  | 0.20                              | 5       | 0             | 75   | 30-133                | 3.456         | 8.16                                    | 20        |              |
| 4-Nitrophenol               | 3.677  | 1.0                               | 5       | 0             | 73.5 | 30-130                | 4.129         | 11.6                                    | 20        |              |
| Acenaphthene                | 3.291  | 0.20                              | 5       | 0             | 65.8 | 45-120                | 3.336         | 1.38                                    | 20        |              |
| Acenaphthylene              | 3.44   | 0.20                              | 5       | 0             | 68.8 | 47-120                | 3.493         | 1.55                                    | 20        |              |
| Acetophenone                | 3.453  | 0.20                              | 5       | 0             | 69.1 | 40-120                | 3.434         | 0.562                                   | 20        |              |
| Anthracene                  | 3.524  | 0.20                              | 5       | 0             | 70.5 | 45-120                | 3.653         | 3.59                                    | 20        |              |
| Atrazine                    | 4.351  | 0.20                              | 5       | 0             | 87   | 40-130                | 4.374         | 0.517                                   | 20        |              |
| Benz(a)anthracene           | 3.572  | 0.20                              | 5       | 0             | 71.4 | 40-120                | 3.633         | 1.69                                    | 20        |              |
| Benzaldehyde                | 0.7583 | 0.20                              | 5       | 0             | 15.2 | 15-120                | 0.8385        | 10                                      | 30        |              |
| Benzo(a)pyrene              | 3.715  | 0.20                              | 5       | 0             | 74.3 | 45-120                | 3.79          | 1.99                                    | 20        |              |
| Benzo(b)fluoranthene        | 4      | 0.20                              | 5       | 0             | 80   | 50-120                | 4.424         | 10.1                                    | 20        |              |
| Benzo(g,h,i)perylene        | 3.709  | 0.20                              | 5       | 0             | 74.2 | 42-127                | 3.759         | 1.33                                    | 20        |              |
| Benzo(k)fluoranthene        | 3.688  | 0.20                              | 5       | 0             | 73.8 | 45-127                | 3.979         | 7.6                                     | 20        |              |
| Bis(2-chloroethoxy)methane  | 2.951  | 0.20                              | 5       | 0             | 59   | 45-120                | 2.923         | 0.967                                   | 20        |              |
| Bis(2-chloroethyl)ether     | 3.297  | 0.20                              | 5       | 0.08614       | 64.2 | 37-121                | 2.997         | 9.52                                    | 20        |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030092  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

| Batch ID: <b>77246</b>            |       | Instrument ID <b>SV-4</b> |   | Method: <b>SW8270</b> |      |        |       |        |    |     |
|-----------------------------------|-------|---------------------------|---|-----------------------|------|--------|-------|--------|----|-----|
| Bis(2-chloroisopropyl)ether       | 12.42 | 0.20                      | 5 | 4.339                 | 162  | 40-120 | 7.844 | 45.2   | 20 | SRE |
| Bis(2-ethylhexyl)phthalate        | 3.658 | 0.20                      | 5 | 0.08023               | 71.6 | 40-139 | 3.621 | 1.03   | 20 |     |
| Butyl benzyl phthalate            | 3.655 | 0.20                      | 5 | 0                     | 73.1 | 47-123 | 3.667 | 0.321  | 20 |     |
| Caprolactam                       | 3.809 | 0.20                      | 5 | 0                     | 76.2 | 35-134 | 3.755 | 1.42   | 20 |     |
| Carbazole                         | 4.169 | 0.20                      | 5 | 0                     | 83.4 | 42-128 | 4.256 | 2.06   | 20 |     |
| Chrysene                          | 3.512 | 0.20                      | 5 | 0                     | 70.2 | 43-120 | 3.487 | 0.722  | 20 |     |
| Dibenz(a,h)anthracene             | 3.65  | 0.20                      | 5 | 0                     | 73   | 45-125 | 3.935 | 7.52   | 20 |     |
| Dibenzofuran                      | 3.478 | 0.20                      | 5 | 0                     | 69.6 | 50-120 | 3.479 | 0.0288 | 20 |     |
| Diethyl phthalate                 | 3.505 | 0.20                      | 5 | 0                     | 70.1 | 41-120 | 3.514 | 0.271  | 20 |     |
| Dimethyl phthalate                | 3.531 | 0.20                      | 5 | 0                     | 70.6 | 40-122 | 3.501 | 0.853  | 20 |     |
| Di-n-butyl phthalate              | 3.765 | 0.20                      | 5 | 0                     | 75.3 | 45-123 | 3.88  | 2.99   | 20 |     |
| Di-n-octyl phthalate              | 3.612 | 0.20                      | 5 | 0.0503                | 71.2 | 45-129 | 3.656 | 1.23   | 20 |     |
| Fluoranthene                      | 3.668 | 0.20                      | 5 | 0                     | 73.4 | 45-125 | 3.674 | 0.17   | 20 |     |
| Fluorene                          | 3.484 | 0.20                      | 5 | 0                     | 69.7 | 49-120 | 3.493 | 0.275  | 20 |     |
| Hexachlorobenzene                 | 3.925 | 0.20                      | 5 | 0                     | 78.5 | 48-120 | 3.828 | 2.52   | 20 |     |
| Hexachlorobutadiene               | 3.503 | 0.20                      | 5 | 0                     | 70.1 | 40-120 | 3.401 | 2.94   | 20 |     |
| Hexachlorocyclopentadiene         | 3.595 | 0.20                      | 5 | 0                     | 71.9 | 34-136 | 3.71  | 3.15   | 20 |     |
| Hexachloroethane                  | 2.947 | 0.20                      | 5 | 0                     | 58.9 | 40-120 | 3.028 | 2.7    | 20 |     |
| Indeno(1,2,3-cd)pyrene            | 3.487 | 0.20                      | 5 | 0                     | 69.7 | 41-128 | 3.629 | 4      | 20 |     |
| Isophorone                        | 2.913 | 0.20                      | 5 | 0                     | 58.3 | 40-121 | 2.955 | 1.41   | 20 |     |
| Naphthalene                       | 3.335 | 0.20                      | 5 | 0                     | 66.7 | 45-120 | 3.361 | 0.775  | 20 |     |
| Nitrobenzene                      | 2.977 | 0.20                      | 5 | 0                     | 59.5 | 44-120 | 2.973 | 0.137  | 20 |     |
| N-Nitrosodi-n-propylamine         | 2.713 | 0.20                      | 5 | 0                     | 54.3 | 40-120 | 2.774 | 2.22   | 20 |     |
| N-Nitrosodiphenylamine            | 3.353 | 0.20                      | 5 | 0                     | 67.1 | 40-125 | 3.419 | 1.96   | 20 |     |
| Pentachlorophenol                 | 4.676 | 0.20                      | 5 | 0                     | 93.5 | 19-121 | 4.861 | 3.88   | 20 |     |
| Phenanthrene                      | 3.501 | 0.20                      | 5 | 0                     | 70   | 45-121 | 3.627 | 3.53   | 20 |     |
| Phenol                            | 2.971 | 0.20                      | 5 | 0                     | 59.4 | 20-124 | 3.021 | 1.65   | 20 |     |
| Pyrene                            | 3.655 | 0.20                      | 5 | 0                     | 73.1 | 40-130 | 3.636 | 0.528  | 20 |     |
| <i>Surr: 2,4,6-Tribromophenol</i> | 4.597 | 0.20                      | 5 | 0                     | 91.9 | 34-129 | 4.688 | 1.95   | 0  |     |
| <i>Surr: 2-Fluorobiphenyl</i>     | 3.454 | 0.20                      | 5 | 0                     | 69.1 | 40-125 | 3.563 | 3.12   | 0  |     |
| <i>Surr: 2-Fluorophenol</i>       | 2.951 | 0.20                      | 5 | 0                     | 59   | 20-120 | 3.146 | 6.4    | 0  |     |
| <i>Surr: 4-Terphenyl-d14</i>      | 3.799 | 0.20                      | 5 | 0                     | 76   | 40-135 | 4.059 | 6.61   | 0  |     |
| <i>Surr: Nitrobenzene-d5</i>      | 3.044 | 0.20                      | 5 | 0                     | 60.9 | 41-120 | 3.121 | 2.49   | 0  |     |
| <i>Surr: Phenol-d6</i>            | 2.985 | 0.20                      | 5 | 0                     | 59.7 | 20-120 | 3.183 | 6.4    | 0  |     |

The following samples were analyzed in this batch:

14030092-03E 14030092-04E

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030092  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162292** Instrument ID **VOA7** Method: **SW8260**

**MBLK** Sample ID: **VBLKW-140304-R162292** Units: **µg/L** Analysis Date: **3/4/2014 01:35 PM**  
 Client ID: Run ID: **VOA7\_140304B** SeqNo: **3551968** Prep Date: DF: **1**

| Analyte                   | Result | PQL | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|---------------------------|--------|-----|---------|---------------|------|---------------|---------------|------|-----------|------|
| 1,1,1-Trichloroethane     | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,1,2,2-Tetrachloroethane | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,1,2-Trichloroethane     | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,1-Dichloroethane        | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,1-Dichloroethene        | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,2,4-Trimethylbenzene    | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,2-Dibromoethane         | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,2-Dichloroethane        | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,2-Dichloropropane       | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 1,3,5-Trimethylbenzene    | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 2-Butanone                | ND     | 10  |         |               |      |               |               |      |           |      |
| 2-Hexanone                | ND     | 10  |         |               |      |               |               |      |           |      |
| 4-Isopropyltoluene        | ND     | 5.0 |         |               |      |               |               |      |           |      |
| 4-Methyl-2-pentanone      | ND     | 10  |         |               |      |               |               |      |           |      |
| Acetone                   | ND     | 10  |         |               |      |               |               |      |           |      |
| Benzene                   | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Bromodichloromethane      | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Bromoform                 | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Bromomethane              | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Carbon disulfide          | ND     | 10  |         |               |      |               |               |      |           |      |
| Carbon tetrachloride      | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Chlorobenzene             | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Chloroethane              | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Chloroform                | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Chloromethane             | ND     | 5.0 |         |               |      |               |               |      |           |      |
| cis-1,2-Dichloroethene    | ND     | 5.0 |         |               |      |               |               |      |           |      |
| cis-1,3-Dichloropropene   | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Dibromochloromethane      | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Ethylbenzene              | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Isopropylbenzene          | ND     | 5.0 |         |               |      |               |               |      |           |      |
| m,p-Xylene                | ND     | 10  |         |               |      |               |               |      |           |      |
| Methyl tert-butyl ether   | ND     | 5.0 |         |               |      |               |               |      |           |      |
| Methylene chloride        | ND     | 10  |         |               |      |               |               |      |           |      |
| Naphthalene               | ND     | 5.0 |         |               |      |               |               |      |           |      |
| n-Butylbenzene            | ND     | 5.0 |         |               |      |               |               |      |           |      |
| n-Propylbenzene           | ND     | 5.0 |         |               |      |               |               |      |           |      |
| o-Xylene                  | ND     | 5.0 |         |               |      |               |               |      |           |      |
| sec-Butylbenzene          | ND     | 5.0 |         |               |      |               |               |      |           |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

Client: Navajo Refining Company  
Work Order: 14030092  
Project: Navajo Lea Refinery Semi-Annual

QC BATCH REPORT

| Batch ID: <b>R162292</b>           |       | Instrument ID <b>VOA7</b> |    | Method: <b>SW8260</b> |      |        |   |  |
|------------------------------------|-------|---------------------------|----|-----------------------|------|--------|---|--|
| Styrene                            | ND    | 5.0                       |    |                       |      |        |   |  |
| Tetrachloroethene                  | ND    | 5.0                       |    |                       |      |        |   |  |
| Toluene                            | ND    | 5.0                       |    |                       |      |        |   |  |
| trans-1,2-Dichloroethene           | ND    | 5.0                       |    |                       |      |        |   |  |
| trans-1,3-Dichloropropene          | ND    | 5.0                       |    |                       |      |        |   |  |
| Trichloroethene                    | ND    | 5.0                       |    |                       |      |        |   |  |
| Vinyl chloride                     | ND    | 2.0                       |    |                       |      |        |   |  |
| Xylenes, Total                     | ND    | 15                        |    |                       |      |        |   |  |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 43.49 | 5.0                       | 50 | 0                     | 87   | 70-125 | 0 |  |
| <i>Surr: 4-Bromofluorobenzene</i>  | 46.64 | 5.0                       | 50 | 0                     | 93.3 | 72-125 | 0 |  |
| <i>Surr: Dibromofluoromethane</i>  | 45.48 | 5.0                       | 50 | 0                     | 91   | 71-125 | 0 |  |
| <i>Surr: Toluene-d8</i>            | 49.52 | 5.0                       | 50 | 0                     | 99   | 75-125 | 0 |  |

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030092  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162292** Instrument ID **VOA7** Method: **SW8260**

| LCS                       | Sample ID: VLCSW-140304-R162292 |     |         |               |                | Units: µg/L   |               | Analysis Date: 3/4/2014 12:02 PM |           |      |
|---------------------------|---------------------------------|-----|---------|---------------|----------------|---------------|---------------|----------------------------------|-----------|------|
| Client ID:                | Run ID: VOA7_140304B            |     |         |               | SeqNo: 3551967 |               | Prep Date:    |                                  | DF: 1     |      |
| Analyte                   | Result                          | PQL | SPK Val | SPK Ref Value | %REC           | Control Limit | RPD Ref Value | %RPD                             | RPD Limit | Qual |
| 1,1,1-Trichloroethane     | 52.1                            | 5.0 | 50      | 0             | 104            | 80-120        |               |                                  |           |      |
| 1,1,2,2-Tetrachloroethane | 48.06                           | 5.0 | 50      | 0             | 96.1           | 72-120        |               |                                  |           |      |
| 1,1,2-Trichloroethane     | 51.96                           | 5.0 | 50      | 0             | 104            | 80-120        |               |                                  |           |      |
| 1,1-Dichloroethane        | 48.19                           | 5.0 | 50      | 0             | 96.4           | 76-120        |               |                                  |           |      |
| 1,1-Dichloroethene        | 50.2                            | 5.0 | 50      | 0             | 100            | 73-124        |               |                                  |           |      |
| 1,2,4-Trimethylbenzene    | 52.94                           | 5.0 | 50      | 0             | 106            | 68-123        |               |                                  |           |      |
| 1,2-Dibromoethane         | 52.98                           | 5.0 | 50      | 0             | 106            | 80-120        |               |                                  |           |      |
| 1,2-Dichloroethane        | 51.53                           | 5.0 | 50      | 0             | 103            | 78-120        |               |                                  |           |      |
| 1,2-Dichloropropane       | 51.89                           | 5.0 | 50      | 0             | 104            | 80-120        |               |                                  |           |      |
| 1,3,5-Trimethylbenzene    | 52.88                           | 5.0 | 50      | 0             | 106            | 80-120        |               |                                  |           |      |
| 2-Butanone                | 97.11                           | 10  | 100     | 0             | 97.1           | 58-132        |               |                                  |           |      |
| 2-Hexanone                | 101.9                           | 10  | 100     | 0             | 102            | 61-130        |               |                                  |           |      |
| 4-Isopropyltoluene        | 55.2                            | 5.0 | 50      | 0             | 110            | 79-120        |               |                                  |           |      |
| 4-Methyl-2-pentanone      | 102.9                           | 10  | 100     | 0             | 103            | 65-127        |               |                                  |           |      |
| Acetone                   | 99.69                           | 10  | 100     | 0             | 99.7           | 59-137        |               |                                  |           |      |
| Benzene                   | 51.76                           | 5.0 | 50      | 0             | 104            | 73-121        |               |                                  |           |      |
| Bromodichloromethane      | 52.11                           | 5.0 | 50      | 0             | 104            | 75-125        |               |                                  |           |      |
| Bromoform                 | 53.52                           | 5.0 | 50      | 0             | 107            | 70-130        |               |                                  |           |      |
| Bromomethane              | 44.49                           | 5.0 | 50      | 0             | 89             | 60-145        |               |                                  |           |      |
| Carbon disulfide          | 100.9                           | 10  | 100     | 0             | 101            | 68-141        |               |                                  |           |      |
| Carbon tetrachloride      | 54.79                           | 5.0 | 50      | 0             | 110            | 75-125        |               |                                  |           |      |
| Chlorobenzene             | 51.03                           | 5.0 | 50      | 0             | 102            | 80-120        |               |                                  |           |      |
| Chloroethane              | 48.42                           | 5.0 | 50      | 0             | 96.8           | 70-130        |               |                                  |           |      |
| Chloroform                | 49.44                           | 5.0 | 50      | 0             | 98.9           | 70-130        |               |                                  |           |      |
| Chloromethane             | 48.4                            | 5.0 | 50      | 0             | 96.8           | 67-123        |               |                                  |           |      |
| cis-1,2-Dichloroethene    | 50.25                           | 5.0 | 50      | 0             | 100            | 78-120        |               |                                  |           |      |
| cis-1,3-Dichloropropene   | 55.21                           | 5.0 | 50      | 0             | 110            | 80-120        |               |                                  |           |      |
| Dibromochloromethane      | 52.1                            | 5.0 | 50      | 0             | 104            | 80-120        |               |                                  |           |      |
| Ethylbenzene              | 54.06                           | 5.0 | 50      | 0             | 108            | 80-120        |               |                                  |           |      |
| Isopropylbenzene          | 55.37                           | 5.0 | 50      | 0             | 111            | 75-130        |               |                                  |           |      |
| m,p-Xylene                | 109.2                           | 10  | 100     | 0             | 109            | 78-121        |               |                                  |           |      |
| Methyl tert-butyl ether   | 48.37                           | 5.0 | 50      | 0             | 96.7           | 73-121        |               |                                  |           |      |
| Methylene chloride        | 49.8                            | 10  | 50      | 0             | 99.6           | 65-133        |               |                                  |           |      |
| Naphthalene               | 50.12                           | 5.0 | 50      | 0             | 100            | 65-135        |               |                                  |           |      |
| n-Butylbenzene            | 57.34                           | 5.0 | 50      | 0             | 115            | 77-120        |               |                                  |           |      |
| n-Propylbenzene           | 53.69                           | 5.0 | 50      | 0             | 107            | 78-120        |               |                                  |           |      |
| o-Xylene                  | 53.67                           | 5.0 | 50      | 0             | 107            | 80-120        |               |                                  |           |      |
| sec-Butylbenzene          | 54.18                           | 5.0 | 50      | 0             | 108            | 78-120        |               |                                  |           |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030092  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

| Batch ID: <b>R162292</b>           |       | Instrument ID <b>VOA7</b> |     | Method: <b>SW8260</b> |      |        |   |
|------------------------------------|-------|---------------------------|-----|-----------------------|------|--------|---|
| Styrene                            | 55.3  | 5.0                       | 50  | 0                     | 111  | 80-120 |   |
| Tetrachloroethene                  | 53.54 | 5.0                       | 50  | 0                     | 107  | 79-120 |   |
| Toluene                            | 53.6  | 5.0                       | 50  | 0                     | 107  | 80-120 |   |
| trans-1,2-Dichloroethene           | 50.82 | 5.0                       | 50  | 0                     | 102  | 78-120 |   |
| trans-1,3-Dichloropropene          | 55.27 | 5.0                       | 50  | 0                     | 111  | 80-120 |   |
| Trichloroethene                    | 51.85 | 5.0                       | 50  | 0                     | 104  | 80-120 |   |
| Vinyl chloride                     | 50.39 | 2.0                       | 50  | 0                     | 101  | 70-127 |   |
| Xylenes, Total                     | 162.9 | 15                        | 150 | 0                     | 109  | 80-120 |   |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 42.74 | 5.0                       | 50  | 0                     | 85.5 | 70-125 | 0 |
| <i>Surr: 4-Bromofluorobenzene</i>  | 50.28 | 5.0                       | 50  | 0                     | 101  | 72-125 | 0 |
| <i>Surr: Dibromofluoromethane</i>  | 44.5  | 5.0                       | 50  | 0                     | 89   | 71-125 | 0 |
| <i>Surr: Toluene-d8</i>            | 47.86 | 5.0                       | 50  | 0                     | 95.7 | 75-125 | 0 |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** Navajo Refining Company  
**Work Order:** 14030092  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162292** Instrument ID **VOA7** Method: **SW8260**

| MS                        |        | Sample ID: <b>14021193-09AMS</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>3/4/2014 03:31 PM</b> |           |              |
|---------------------------|--------|----------------------------------|---------|---------------|------|-----------------------|---------------|-----------------------------------------|-----------|--------------|
| Client ID:                |        | Run ID: <b>VOA7_140304B</b>      |         |               |      | SeqNo: <b>3552471</b> |               | Prep Date:                              |           | DF: <b>1</b> |
| Analyte                   | Result | PQL                              | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                    | RPD Limit | Qual         |
| 1,1,1-Trichloroethane     | 45.26  | 5.0                              | 50      | 0             | 90.5 | 80-120                |               |                                         |           |              |
| 1,1,2,2-Tetrachloroethane | 47.17  | 5.0                              | 50      | 0             | 94.3 | 72-120                |               |                                         |           |              |
| 1,1,2-Trichloroethane     | 51.03  | 5.0                              | 50      | 0             | 102  | 80-120                |               |                                         |           |              |
| 1,1-Dichloroethane        | 45.41  | 5.0                              | 50      | 0             | 90.8 | 76-120                |               |                                         |           |              |
| 1,1-Dichloroethene        | 43.96  | 5.0                              | 50      | 0             | 87.9 | 73-124                |               |                                         |           |              |
| 1,2,4-Trimethylbenzene    | 46.84  | 5.0                              | 50      | 0             | 93.7 | 68-123                |               |                                         |           |              |
| 1,2-Dibromoethane         | 52.72  | 5.0                              | 50      | 0             | 105  | 80-120                |               |                                         |           |              |
| 1,2-Dichloroethane        | 49.7   | 5.0                              | 50      | 0             | 99.4 | 78-120                |               |                                         |           |              |
| 1,2-Dichloropropane       | 49.79  | 5.0                              | 50      | 0             | 99.6 | 80-120                |               |                                         |           |              |
| 1,3,5-Trimethylbenzene    | 46.79  | 5.0                              | 50      | 0             | 93.6 | 80-120                |               |                                         |           |              |
| 2-Butanone                | 94.91  | 10                               | 100     | 0             | 94.9 | 58-132                |               |                                         |           |              |
| 2-Hexanone                | 102.6  | 10                               | 100     | 0             | 103  | 61-130                |               |                                         |           |              |
| 4-Isopropyltoluene        | 45.42  | 5.0                              | 50      | 0             | 90.8 | 79-120                |               |                                         |           |              |
| 4-Methyl-2-pentanone      | 101.6  | 10                               | 100     | 0             | 102  | 65-127                |               |                                         |           |              |
| Acetone                   | 98.9   | 10                               | 100     | 0             | 98.9 | 59-137                |               |                                         |           |              |
| Benzene                   | 48.41  | 5.0                              | 50      | 0             | 96.8 | 73-121                |               |                                         |           |              |
| Bromodichloromethane      | 49.85  | 5.0                              | 50      | 0             | 99.7 | 75-125                |               |                                         |           |              |
| Bromoform                 | 53.92  | 5.0                              | 50      | 0             | 108  | 70-130                |               |                                         |           |              |
| Bromomethane              | 41.18  | 5.0                              | 50      | 0             | 82.4 | 60-145                |               |                                         |           |              |
| Carbon disulfide          | 88.25  | 10                               | 100     | 0             | 88.3 | 68-141                |               |                                         |           |              |
| Carbon tetrachloride      | 48.02  | 5.0                              | 50      | 0             | 96   | 75-125                |               |                                         |           |              |
| Chlorobenzene             | 48.41  | 5.0                              | 50      | 0             | 96.8 | 80-120                |               |                                         |           |              |
| Chloroethane              | 45.03  | 5.0                              | 50      | 0             | 90.1 | 70-130                |               |                                         |           |              |
| Chloroform                | 46.89  | 5.0                              | 50      | 0             | 93.8 | 70-130                |               |                                         |           |              |
| Chloromethane             | 44.88  | 5.0                              | 50      | 0             | 89.8 | 67-123                |               |                                         |           |              |
| cis-1,2-Dichloroethene    | 46.87  | 5.0                              | 50      | 0             | 93.7 | 78-120                |               |                                         |           |              |
| cis-1,3-Dichloropropene   | 51.73  | 5.0                              | 50      | 0             | 103  | 80-120                |               |                                         |           |              |
| Dibromochloromethane      | 51.44  | 5.0                              | 50      | 0             | 103  | 80-120                |               |                                         |           |              |
| Ethylbenzene              | 49.27  | 5.0                              | 50      | 0             | 98.5 | 80-120                |               |                                         |           |              |
| Isopropylbenzene          | 49.44  | 5.0                              | 50      | 0             | 98.9 | 75-130                |               |                                         |           |              |
| m,p-Xylene                | 100.6  | 10                               | 100     | 0             | 101  | 78-121                |               |                                         |           |              |
| Methyl tert-butyl ether   | 47.15  | 5.0                              | 50      | 0             | 94.3 | 73-121                |               |                                         |           |              |
| Methylene chloride        | 47.85  | 10                               | 50      | 0             | 95.7 | 65-133                |               |                                         |           |              |
| Naphthalene               | 48.04  | 5.0                              | 50      | 0             | 96.1 | 65-135                |               |                                         |           |              |
| n-Butylbenzene            | 44.96  | 5.0                              | 50      | 0             | 89.9 | 77-120                |               |                                         |           |              |
| n-Propylbenzene           | 46.51  | 5.0                              | 50      | 0             | 93   | 78-120                |               |                                         |           |              |
| o-Xylene                  | 50.27  | 5.0                              | 50      | 0             | 101  | 80-120                |               |                                         |           |              |
| sec-Butylbenzene          | 44.87  | 5.0                              | 50      | 0             | 89.7 | 78-120                |               |                                         |           |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030092  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

| Batch ID: <b>R162292</b>           |       | Instrument ID <b>VOA7</b> |     | Method: <b>SW8260</b> |      |        |   |
|------------------------------------|-------|---------------------------|-----|-----------------------|------|--------|---|
| Styrene                            | 52.69 | 5.0                       | 50  | 0                     | 105  | 80-120 |   |
| Tetrachloroethene                  | 47.68 | 5.0                       | 50  | 0                     | 95.4 | 79-120 |   |
| Toluene                            | 49.42 | 5.0                       | 50  | 0                     | 98.8 | 80-120 |   |
| trans-1,2-Dichloroethene           | 45.71 | 5.0                       | 50  | 0                     | 91.4 | 78-120 |   |
| trans-1,3-Dichloropropene          | 53.62 | 5.0                       | 50  | 0                     | 107  | 80-120 |   |
| Trichloroethene                    | 47.3  | 5.0                       | 50  | 0                     | 94.6 | 80-120 |   |
| Vinyl chloride                     | 44.49 | 2.0                       | 50  | 0                     | 89   | 70-127 |   |
| Xylenes, Total                     | 150.9 | 15                        | 150 | 0                     | 101  | 80-120 |   |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 41.8  | 5.0                       | 50  | 0                     | 83.6 | 70-125 | 0 |
| <i>Surr: 4-Bromofluorobenzene</i>  | 49.78 | 5.0                       | 50  | 0                     | 99.6 | 72-125 | 0 |
| <i>Surr: Dibromofluoromethane</i>  | 43.54 | 5.0                       | 50  | 0                     | 87.1 | 71-125 | 0 |
| <i>Surr: Toluene-d8</i>            | 47.87 | 5.0                       | 50  | 0                     | 95.7 | 75-125 | 0 |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030092  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162292** Instrument ID **VOA7** Method: **SW8260**

| MSD                       |        | Sample ID: <b>14021193-09AMSD</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>3/4/2014 03:54 PM</b> |           |              |
|---------------------------|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|-----------------------------------------|-----------|--------------|
| Client ID:                |        | Run ID: <b>VOA7_140304B</b>       |         |               |      | SeqNo: <b>3552472</b> |               | Prep Date:                              |           | DF: <b>1</b> |
| Analyte                   | Result | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                    | RPD Limit | Qual         |
| 1,1,1-Trichloroethane     | 44.6   | 5.0                               | 50      | 0             | 89.2 | 80-120                | 45.26         | 1.48                                    | 20        |              |
| 1,1,2,2-Tetrachloroethane | 47.68  | 5.0                               | 50      | 0             | 95.4 | 72-120                | 47.17         | 1.08                                    | 20        |              |
| 1,1,2-Trichloroethane     | 51.19  | 5.0                               | 50      | 0             | 102  | 80-120                | 51.03         | 0.328                                   | 20        |              |
| 1,1-Dichloroethane        | 44.32  | 5.0                               | 50      | 0             | 88.6 | 76-120                | 45.41         | 2.42                                    | 20        |              |
| 1,1-Dichloroethene        | 42.65  | 5.0                               | 50      | 0             | 85.3 | 73-124                | 43.96         | 3.02                                    | 20        |              |
| 1,2,4-Trimethylbenzene    | 46.1   | 5.0                               | 50      | 0             | 92.2 | 68-123                | 46.84         | 1.61                                    | 20        |              |
| 1,2-Dibromoethane         | 52.93  | 5.0                               | 50      | 0             | 106  | 80-120                | 52.72         | 0.389                                   | 20        |              |
| 1,2-Dichloroethane        | 49.02  | 5.0                               | 50      | 0             | 98   | 78-120                | 49.7          | 1.38                                    | 20        |              |
| 1,2-Dichloropropane       | 49.1   | 5.0                               | 50      | 0             | 98.2 | 80-120                | 49.79         | 1.39                                    | 20        |              |
| 1,3,5-Trimethylbenzene    | 45.8   | 5.0                               | 50      | 0             | 91.6 | 80-120                | 46.79         | 2.14                                    | 20        |              |
| 2-Butanone                | 95.56  | 10                                | 100     | 0             | 95.6 | 58-132                | 94.91         | 0.674                                   | 20        |              |
| 2-Hexanone                | 104.8  | 10                                | 100     | 0             | 105  | 61-130                | 102.6         | 2.18                                    | 20        |              |
| 4-Isopropyltoluene        | 43.44  | 5.0                               | 50      | 0             | 86.9 | 79-120                | 45.42         | 4.48                                    | 20        |              |
| 4-Methyl-2-pentanone      | 104.2  | 10                                | 100     | 0             | 104  | 65-127                | 101.6         | 2.54                                    | 20        |              |
| Acetone                   | 96.62  | 10                                | 100     | 0             | 96.6 | 59-137                | 98.9          | 2.33                                    | 20        |              |
| Benzene                   | 47.9   | 5.0                               | 50      | 0             | 95.8 | 73-121                | 48.41         | 1.05                                    | 20        |              |
| Bromodichloromethane      | 49.45  | 5.0                               | 50      | 0             | 98.9 | 75-125                | 49.85         | 0.809                                   | 20        |              |
| Bromoform                 | 53.32  | 5.0                               | 50      | 0             | 107  | 70-130                | 53.92         | 1.12                                    | 20        |              |
| Bromomethane              | 41.39  | 5.0                               | 50      | 0             | 82.8 | 60-145                | 41.18         | 0.515                                   | 20        |              |
| Carbon disulfide          | 88.23  | 10                                | 100     | 0             | 88.2 | 68-141                | 88.25         | 0.0274                                  | 20        |              |
| Carbon tetrachloride      | 45.02  | 5.0                               | 50      | 0             | 90   | 75-125                | 48.02         | 6.43                                    | 20        |              |
| Chlorobenzene             | 48.56  | 5.0                               | 50      | 0             | 97.1 | 80-120                | 48.41         | 0.306                                   | 20        |              |
| Chloroethane              | 44.22  | 5.0                               | 50      | 0             | 88.4 | 76-121                | 45.03         | 1.8                                     | 20        |              |
| Chloroform                | 47.4   | 5.0                               | 50      | 0             | 94.8 | 70-130                | 46.89         | 1.08                                    | 20        |              |
| Chloromethane             | 44.58  | 5.0                               | 50      | 0             | 89.2 | 67-123                | 44.88         | 0.67                                    | 20        |              |
| cis-1,2-Dichloroethene    | 47.73  | 5.0                               | 50      | 0             | 95.5 | 78-120                | 46.87         | 1.81                                    | 20        |              |
| cis-1,3-Dichloropropene   | 51.12  | 5.0                               | 50      | 0             | 102  | 80-120                | 51.73         | 1.17                                    | 20        |              |
| Dibromochloromethane      | 51.49  | 5.0                               | 50      | 0             | 103  | 80-120                | 51.44         | 0.102                                   | 20        |              |
| Ethylbenzene              | 48.6   | 5.0                               | 50      | 0             | 97.2 | 80-120                | 49.27         | 1.37                                    | 20        |              |
| Isopropylbenzene          | 47.38  | 5.0                               | 50      | 0             | 94.8 | 75-130                | 49.44         | 4.27                                    | 20        |              |
| m,p-Xylene                | 98.66  | 10                                | 100     | 0             | 98.7 | 78-121                | 100.6         | 1.97                                    | 20        |              |
| Methyl tert-butyl ether   | 47.28  | 5.0                               | 50      | 0             | 94.6 | 73-121                | 47.15         | 0.264                                   | 20        |              |
| Methylene chloride        | 47.73  | 10                                | 50      | 0             | 95.5 | 65-133                | 47.85         | 0.25                                    | 20        |              |
| Naphthalene               | 47.03  | 5.0                               | 50      | 0             | 94.1 | 65-135                | 48.04         | 2.12                                    | 20        |              |
| n-Butylbenzene            | 42.73  | 5.0                               | 50      | 0             | 85.5 | 77-120                | 44.96         | 5.08                                    | 20        |              |
| n-Propylbenzene           | 45.06  | 5.0                               | 50      | 0             | 90.1 | 78-120                | 46.51         | 3.17                                    | 20        |              |
| o-Xylene                  | 49.86  | 5.0                               | 50      | 0             | 99.7 | 80-120                | 50.27         | 0.819                                   | 20        |              |
| sec-Butylbenzene          | 42.47  | 5.0                               | 50      | 0             | 84.9 | 78-120                | 44.87         | 5.5                                     | 20        |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030092  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

| Batch ID: <b>R162292</b>           |       | Instrument ID <b>VOA7</b> |     | Method: <b>SW8260</b> |      |        |       |       |    |
|------------------------------------|-------|---------------------------|-----|-----------------------|------|--------|-------|-------|----|
| Styrene                            | 51.97 | 5.0                       | 50  | 0                     | 104  | 80-120 | 52.69 | 1.38  | 20 |
| Tetrachloroethene                  | 45.72 | 5.0                       | 50  | 0                     | 91.4 | 79-120 | 47.68 | 4.18  | 20 |
| Toluene                            | 49.23 | 5.0                       | 50  | 0                     | 98.5 | 80-120 | 49.42 | 0.386 | 20 |
| trans-1,2-Dichloroethene           | 45.9  | 5.0                       | 50  | 0                     | 91.8 | 78-120 | 45.71 | 0.42  | 20 |
| trans-1,3-Dichloropropene          | 52.56 | 5.0                       | 50  | 0                     | 105  | 80-120 | 53.62 | 2     | 20 |
| Trichloroethene                    | 46.27 | 5.0                       | 50  | 0                     | 92.5 | 80-120 | 47.3  | 2.22  | 20 |
| Vinyl chloride                     | 43.63 | 2.0                       | 50  | 0                     | 87.3 | 70-127 | 44.49 | 1.93  | 20 |
| Xylenes, Total                     | 148.5 | 15                        | 150 | 0                     | 99   | 78-121 | 150.9 | 1.59  | 20 |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 42.17 | 5.0                       | 50  | 0                     | 84.3 | 70-125 | 41.8  | 0.881 | 20 |
| <i>Surr: 4-Bromofluorobenzene</i>  | 50.24 | 5.0                       | 50  | 0                     | 100  | 72-125 | 49.78 | 0.919 | 20 |
| <i>Surr: Dibromofluoromethane</i>  | 44.02 | 5.0                       | 50  | 0                     | 88   | 71-125 | 43.54 | 1.09  | 20 |
| <i>Surr: Toluene-d8</i>            | 48.36 | 5.0                       | 50  | 0                     | 96.7 | 75-125 | 47.87 | 1.02  | 20 |

The following samples were analyzed in this batch:

|              |              |              |              |
|--------------|--------------|--------------|--------------|
| 14030092-01A | 14030092-02A | 14030092-03A | 14030092-04A |
| 14030092-05A |              |              |              |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030092  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162428** Instrument ID **VOA7** Method: **SW8260**

| <b>MBLK</b>                 | Sample ID: <b>VBLKW-140306-R162428</b> |     |         |               | Units: <b>µg/L</b>    |               | Analysis Date: <b>3/6/2014 12:05 PM</b> |      |              |      |
|-----------------------------|----------------------------------------|-----|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| Client ID:                  | Run ID: <b>VOA7_140306A</b>            |     |         |               | SeqNo: <b>3555113</b> |               | Prep Date:                              |      | DF: <b>1</b> |      |
| Analyte                     | Result                                 | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Benzene                     | ND                                     | 5.0 |         |               |                       |               |                                         |      |              |      |
| Ethylbenzene                | ND                                     | 5.0 |         |               |                       |               |                                         |      |              |      |
| Surr: 1,2-Dichloroethane-d4 | 41.21                                  | 5.0 | 50      | 0             | 82.4                  | 70-125        | 0                                       |      |              |      |
| Surr: 4-Bromofluorobenzene  | 45.05                                  | 5.0 | 50      | 0             | 90.1                  | 72-125        | 0                                       |      |              |      |
| Surr: Dibromofluoromethane  | 42.05                                  | 5.0 | 50      | 0             | 84.1                  | 71-125        | 0                                       |      |              |      |
| Surr: Toluene-d8            | 47.13                                  | 5.0 | 50      | 0             | 94.3                  | 75-125        | 0                                       |      |              |      |

| <b>LCS</b>                  | Sample ID: <b>VLCSW-140304-R162428</b> |     |         |               | Units: <b>µg/L</b>    |               | Analysis Date: <b>3/6/2014 10:55 AM</b> |      |              |      |
|-----------------------------|----------------------------------------|-----|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| Client ID:                  | Run ID: <b>VOA7_140306A</b>            |     |         |               | SeqNo: <b>3555112</b> |               | Prep Date:                              |      | DF: <b>1</b> |      |
| Analyte                     | Result                                 | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Benzene                     | 49.29                                  | 5.0 | 50      | 0             | 98.6                  | 73-121        |                                         |      |              |      |
| Ethylbenzene                | 51.62                                  | 5.0 | 50      | 0             | 103                   | 80-120        |                                         |      |              |      |
| Surr: 1,2-Dichloroethane-d4 | 41.58                                  | 5.0 | 50      | 0             | 83.2                  | 70-125        | 0                                       |      |              |      |
| Surr: 4-Bromofluorobenzene  | 49.35                                  | 5.0 | 50      | 0             | 98.7                  | 72-125        | 0                                       |      |              |      |
| Surr: Dibromofluoromethane  | 42.97                                  | 5.0 | 50      | 0             | 85.9                  | 71-125        | 0                                       |      |              |      |
| Surr: Toluene-d8            | 47.57                                  | 5.0 | 50      | 0             | 95.1                  | 75-125        | 0                                       |      |              |      |

| <b>MS</b>                   | Sample ID: <b>14030171-01AMS</b> |     |         |               | Units: <b>µg/L</b>    |               | Analysis Date: <b>3/6/2014 02:48 PM</b> |      |                |      |
|-----------------------------|----------------------------------|-----|---------|---------------|-----------------------|---------------|-----------------------------------------|------|----------------|------|
| Client ID:                  | Run ID: <b>VOA7_140306A</b>      |     |         |               | SeqNo: <b>3555602</b> |               | Prep Date:                              |      | DF: <b>100</b> |      |
| Analyte                     | Result                           | PQL | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit      | Qual |
| Benzene                     | 5057                             | 500 | 5000    | 114.8         | 98.8                  | 73-121        |                                         |      |                |      |
| Ethylbenzene                | 4883                             | 500 | 5000    | 0             | 97.7                  | 80-120        |                                         |      |                |      |
| Surr: 1,2-Dichloroethane-d4 | 4139                             | 500 | 5000    | 0             | 82.8                  | 70-125        | 0                                       |      |                |      |
| Surr: 4-Bromofluorobenzene  | 4966                             | 500 | 5000    | 0             | 99.3                  | 72-125        | 0                                       |      |                |      |
| Surr: Dibromofluoromethane  | 4409                             | 500 | 5000    | 0             | 88.2                  | 71-125        | 0                                       |      |                |      |
| Surr: Toluene-d8            | 4849                             | 500 | 5000    | 0             | 97                    | 75-125        | 0                                       |      |                |      |

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030092  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162428** Instrument ID **VOA7** Method: **SW8260**

| MSD                                |        | Sample ID: <b>14030171-01AMSD</b> |         |               |      | Units: <b>µg/L</b>    |               | Analysis Date: <b>3/6/2014 03:11 PM</b> |           |                |
|------------------------------------|--------|-----------------------------------|---------|---------------|------|-----------------------|---------------|-----------------------------------------|-----------|----------------|
| Client ID:                         |        | Run ID: <b>VOA7_140306A</b>       |         |               |      | SeqNo: <b>3555603</b> |               | Prep Date:                              |           | DF: <b>100</b> |
| Analyte                            | Result | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit         | RPD Ref Value | %RPD                                    | RPD Limit | Qual           |
| Benzene                            | 4912   | 500                               | 5000    | 114.8         | 95.9 | 73-121                | 5057          | 2.92                                    | 20        |                |
| Ethylbenzene                       | 4994   | 500                               | 5000    | 0             | 99.9 | 80-120                | 4883          | 2.26                                    | 20        |                |
| <i>Surr: 1,2-Dichloroethane-d4</i> | 4136   | 500                               | 5000    | 0             | 82.7 | 70-125                | 4139          | 0.0629                                  | 20        |                |
| <i>Surr: 4-Bromofluorobenzene</i>  | 4862   | 500                               | 5000    | 0             | 97.2 | 72-125                | 4966          | 2.11                                    | 20        |                |
| <i>Surr: Dibromofluoromethane</i>  | 4332   | 500                               | 5000    | 0             | 86.6 | 71-125                | 4409          | 1.77                                    | 20        |                |
| <i>Surr: Toluene-d8</i>            | 4753   | 500                               | 5000    | 0             | 95.1 | 75-125                | 4849          | 2                                       | 20        |                |

The following samples were analyzed in this batch:

14030092-01A

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030092  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162344** Instrument ID **ManTech01** Method: **SM2320B** (Dissolve)

| <b>MBLK</b>                        | Sample ID: <b>WBLKW1-140304-R162344</b> |      |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/4/2014 07:36 PM</b> |      |              |      |
|------------------------------------|-----------------------------------------|------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| Client ID:                         | Run ID: <b>MANTECH01_140304F</b>        |      |         |               | SeqNo: <b>3553549</b> |               | Prep Date:                              |      | DF: <b>1</b> |      |
| Analyte                            | Result                                  | PQL  | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Alkalinity, Bicarbonate (As CaCO3) | ND                                      | 10.0 |         |               |                       |               |                                         |      |              |      |
| Alkalinity, Carbonate (As CaCO3)   | ND                                      | 10.0 |         |               |                       |               |                                         |      |              |      |
| Alkalinity, Hydroxide (As CaCO3)   | ND                                      | 10.0 |         |               |                       |               |                                         |      |              |      |
| Alkalinity, Total (As CaCO3)       | ND                                      | 10.0 |         |               |                       |               |                                         |      |              |      |

| <b>LCS</b>                   | Sample ID: <b>WLCSW1-140304-R162344</b> |      |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/4/2014 07:42 PM</b> |      |              |      |
|------------------------------|-----------------------------------------|------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| Client ID:                   | Run ID: <b>MANTECH01_140304F</b>        |      |         |               | SeqNo: <b>3553550</b> |               | Prep Date:                              |      | DF: <b>1</b> |      |
| Analyte                      | Result                                  | PQL  | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Alkalinity, Total (As CaCO3) | 963.4                                   | 10.0 | 1000    | 0             | 96.3                  | 80-120        |                                         |      |              |      |

| <b>LCSD</b>                  | Sample ID: <b>WLCSDW1-140314-R162344</b> |      |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/4/2014 10:10 PM</b> |      |              |      |
|------------------------------|------------------------------------------|------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| Client ID:                   | Run ID: <b>MANTECH01_140304F</b>         |      |         |               | SeqNo: <b>3553582</b> |               | Prep Date:                              |      | DF: <b>1</b> |      |
| Analyte                      | Result                                   | PQL  | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Alkalinity, Total (As CaCO3) | 1066                                     | 10.0 | 1000    | 0             | 107                   | 80-120        | 0                                       | 0    | 20           |      |

| <b>DUP</b>                         | Sample ID: <b>14030092-03DDUP</b> |      |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/4/2014 09:51 PM</b> |      |              |      |
|------------------------------------|-----------------------------------|------|---------|---------------|-----------------------|---------------|-----------------------------------------|------|--------------|------|
| Client ID: <b>EB-A-2-28-14</b>     | Run ID: <b>MANTECH01_140304F</b>  |      |         |               | SeqNo: <b>3553576</b> |               | Prep Date:                              |      | DF: <b>1</b> |      |
| Analyte                            | Result                            | PQL  | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Alkalinity, Bicarbonate (As CaCO3) | ND                                | 10.0 |         |               |                       |               | 20.68                                   | 0    | 0            |      |
| Alkalinity, Carbonate (As CaCO3)   | ND                                | 10.0 |         |               |                       |               | 0                                       | 0    | 0            |      |
| Alkalinity, Hydroxide (As CaCO3)   | ND                                | 10.0 |         |               |                       |               | 0                                       | 0    | 0            |      |
| Alkalinity, Total (As CaCO3)       | ND                                | 10.0 |         |               |                       |               | 20.68                                   | 0    | 20           |      |

The following samples were analyzed in this batch:

|              |              |
|--------------|--------------|
| 14030092-03D | 14030092-04D |
|--------------|--------------|

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030092  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162366** Instrument ID **ManTech01** Method: **SM4500H+ B (Dissolve)**

|            |        |                                  |         |               |      |                        |               |                                         |           |              |
|------------|--------|----------------------------------|---------|---------------|------|------------------------|---------------|-----------------------------------------|-----------|--------------|
| <b>LCS</b> |        | Sample ID: <b>LCS-PH-R162366</b> |         |               |      | Units: <b>pH Units</b> |               | Analysis Date: <b>3/4/2014 07:45 PM</b> |           |              |
| Client ID: |        | Run ID: <b>MANTECH01_140304G</b> |         |               |      | SeqNo: <b>3553799</b>  |               | Prep Date:                              |           | DF: <b>1</b> |
| Analyte    | Result | PQL                              | SPK Val | SPK Ref Value | %REC | Control Limit          | RPD Ref Value | %RPD                                    | RPD Limit | Qual         |
| pH         | 6.21   | 0.100                            | 6       | 0             | 104  | 95-105                 |               |                                         |           |              |

|                                |        |                                   |         |               |      |                        |               |                                         |           |              |
|--------------------------------|--------|-----------------------------------|---------|---------------|------|------------------------|---------------|-----------------------------------------|-----------|--------------|
| <b>DUP</b>                     |        | Sample ID: <b>14030092-03DDUP</b> |         |               |      | Units: <b>pH Units</b> |               | Analysis Date: <b>3/4/2014 09:51 PM</b> |           |              |
| Client ID: <b>EB-A-2-28-14</b> |        | Run ID: <b>MANTECH01_140304G</b>  |         |               |      | SeqNo: <b>3553824</b>  |               | Prep Date:                              |           | DF: <b>1</b> |
| Analyte                        | Result | PQL                               | SPK Val | SPK Ref Value | %REC | Control Limit          | RPD Ref Value | %RPD                                    | RPD Limit | Qual         |
| pH                             | 5.39   | 0.100                             |         |               |      |                        | 6.13          | 12.8                                    | 15        | H            |

The following samples were analyzed in this batch:

|              |              |
|--------------|--------------|
| 14030092-03D | 14030092-04D |
|--------------|--------------|

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



**Client:** Navajo Refining Company  
**Work Order:** 14030092  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162369** Instrument ID **ManTech01** Method: **M2510 B (Dissolve)**

|                       |                                         |      |         |               |                        |               |                                         |      |              |      |
|-----------------------|-----------------------------------------|------|---------|---------------|------------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>MBLK</b>           | Sample ID: <b>WBLKW1-140304-R162369</b> |      |         |               | Units: <b>µmhos/cm</b> |               | Analysis Date: <b>3/4/2014 07:36 PM</b> |      |              |      |
| Client ID:            | Run ID: <b>MANTECH01_140304H</b>        |      |         |               | SeqNo: <b>3553835</b>  |               | Prep Date:                              |      | DF: <b>1</b> |      |
| Analyte               | Result                                  | PQL  | SPK Val | SPK Ref Value | %REC                   | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Specific Conductivity | ND                                      | 5.00 |         |               |                        |               |                                         |      |              |      |

|                       |                                    |      |         |               |                        |               |                                         |      |              |      |
|-----------------------|------------------------------------|------|---------|---------------|------------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>LCS</b>            | Sample ID: <b>LCS-COND-R162369</b> |      |         |               | Units: <b>µmhos/cm</b> |               | Analysis Date: <b>3/4/2014 07:46 PM</b> |      |              |      |
| Client ID:            | Run ID: <b>MANTECH01_140304H</b>   |      |         |               | SeqNo: <b>3553838</b>  |               | Prep Date:                              |      | DF: <b>1</b> |      |
| Analyte               | Result                             | PQL  | SPK Val | SPK Ref Value | %REC                   | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Specific Conductivity | 1687                               | 5.00 | 1413    |               | 0                      | 119           | 80-120                                  |      |              |      |

|                                |                                   |      |         |               |                        |               |                                         |      |              |      |
|--------------------------------|-----------------------------------|------|---------|---------------|------------------------|---------------|-----------------------------------------|------|--------------|------|
| <b>DUP</b>                     | Sample ID: <b>14030092-03DDUP</b> |      |         |               | Units: <b>µmhos/cm</b> |               | Analysis Date: <b>3/4/2014 09:51 PM</b> |      |              |      |
| Client ID: <b>EB-A-2-28-14</b> | Run ID: <b>MANTECH01_140304H</b>  |      |         |               | SeqNo: <b>3553862</b>  |               | Prep Date:                              |      | DF: <b>1</b> |      |
| Analyte                        | Result                            | PQL  | SPK Val | SPK Ref Value | %REC                   | Control Limit | RPD Ref Value                           | %RPD | RPD Limit    | Qual |
| Specific Conductivity          | ND                                | 5.00 |         |               |                        |               |                                         | 0    | 0            | 20   |

The following samples were analyzed in this batch:

|              |              |
|--------------|--------------|
| 14030092-03D | 14030092-04D |
|--------------|--------------|

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030092  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162534** Instrument ID **Balance1** Method: **M2540C** **(Dissolve)**

**MBLK** Sample ID: **WBLK-030614-R162534** Units: **mg/L** Analysis Date: **3/6/2014 04:45 PM**

Client ID: Run ID: **BALANCE1\_140306F** SeqNo: **3557565** Prep Date: DF: **1**

| Analyte                              | Result | PQL  | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|--------------------------------------|--------|------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Total Dissolved Solids (Residue, Fil | ND     | 10.0 |         |               |      |               |               |      |           |      |

**LCS** Sample ID: **WLCS-030614-R162534** Units: **mg/L** Analysis Date: **3/6/2014 04:45 PM**

Client ID: Run ID: **BALANCE1\_140306F** SeqNo: **3557566** Prep Date: DF: **1**

| Analyte                              | Result | PQL  | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|--------------------------------------|--------|------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Total Dissolved Solids (Residue, Fil | 1054   | 10.0 | 1000    | 0             | 105  | 85-115        |               |      |           |      |

**DUP** Sample ID: **14030008-11EDUP** Units: **mg/L** Analysis Date: **3/6/2014 04:45 PM**

Client ID: Run ID: **BALANCE1\_140306F** SeqNo: **3557556** Prep Date: DF: **1**

| Analyte                              | Result | PQL  | SPK Val | SPK Ref Value | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|--------------------------------------|--------|------|---------|---------------|------|---------------|---------------|------|-----------|------|
| Total Dissolved Solids (Residue, Fil | 682    | 10.0 |         |               |      |               | 660           | 3.28 | 10        |      |

The following samples were analyzed in this batch:

14030092-03D 14030092-04D

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030092  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162957** Instrument ID **ICS2100** Method: **E300**

| <b>MBLK</b> | Sample ID: <b>WBLKW1-R162957</b> |       |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/17/2014 10:31 AM</b> |      |              |      |
|-------------|----------------------------------|-------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| Client ID:  | Run ID: <b>ICS2100_140317A</b>   |       |         |               | SeqNo: <b>3567201</b> |               | Prep Date:                               |      | DF: <b>1</b> |      |
| Analyte     | Result                           | PQL   | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Chloride    | ND                               | 0.500 |         |               |                       |               |                                          |      |              |      |
| Fluoride    | ND                               | 0.100 |         |               |                       |               |                                          |      |              |      |
| Sulfate     | ND                               | 0.500 |         |               |                       |               |                                          |      |              |      |

| <b>LCS</b> | Sample ID: <b>WLCSW1-R162957</b> |       |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/17/2014 09:37 AM</b> |      |              |      |
|------------|----------------------------------|-------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| Client ID: | Run ID: <b>ICS2100_140317A</b>   |       |         |               | SeqNo: <b>3567200</b> |               | Prep Date:                               |      | DF: <b>1</b> |      |
| Analyte    | Result                           | PQL   | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Chloride   | 20.07                            | 0.500 | 20      | 0             | 100                   | 90-110        |                                          |      |              |      |
| Fluoride   | 3.674                            | 0.100 | 4       | 0             | 91.8                  | 90-110        |                                          |      |              |      |
| Sulfate    | 18.63                            | 0.500 | 20      | 0             | 93.1                  | 90-110        |                                          |      |              |      |

| <b>MS</b>  | Sample ID: <b>14030282-02BMS</b> |      |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/17/2014 02:28 PM</b> |      |                |      |
|------------|----------------------------------|------|---------|---------------|-----------------------|---------------|------------------------------------------|------|----------------|------|
| Client ID: | Run ID: <b>ICS2100_140317A</b>   |      |         |               | SeqNo: <b>3567214</b> |               | Prep Date:                               |      | DF: <b>100</b> |      |
| Analyte    | Result                           | PQL  | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit      | Qual |
| Chloride   | 1017                             | 50.0 | 1000    | 8.69          | 101                   | 80-120        |                                          |      |                |      |
| Fluoride   | 162.8                            | 10.0 | 200     | 0             | 81.4                  | 80-120        |                                          |      |                |      |
| Sulfate    | 1502                             | 50.0 | 1000    | 500.8         | 100                   | 80-120        |                                          |      |                |      |

| <b>MSD</b> | Sample ID: <b>14030282-02BMSD</b> |      |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/17/2014 02:42 AM</b> |        |                |      |
|------------|-----------------------------------|------|---------|---------------|-----------------------|---------------|------------------------------------------|--------|----------------|------|
| Client ID: | Run ID: <b>ICS2100_140317A</b>    |      |         |               | SeqNo: <b>3567263</b> |               | Prep Date:                               |        | DF: <b>100</b> |      |
| Analyte    | Result                            | PQL  | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD   | RPD Limit      | Qual |
| Chloride   | 1010                              | 50.0 | 1000    | 0             | 101                   | 80-120        | 1017                                     | 0.761  | 20             |      |
| Fluoride   | 163                               | 10.0 | 200     | 0             | 81.5                  | 80-120        | 162.8                                    | 0.0614 | 20             |      |
| Sulfate    | 1483                              | 50.0 | 1000    | 500.8         | 98.2                  | 80-120        | 1502                                     | 1.27   | 20             |      |

The following samples were analyzed in this batch:

14030092-03D 14030092-04D

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Work Order:** 14030092  
**Project:** Navajo Lea Refinery Semi-Annual

## QC BATCH REPORT

Batch ID: **R162963** Instrument ID **ICS3K2** Method: **E300**

| <b>MBLK</b>            | Sample ID: <b>WBLKW1-R162963</b> |       |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/17/2014 11:17 AM</b> |      |              |      |
|------------------------|----------------------------------|-------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| Client ID:             | Run ID: <b>ICS3K2_140317A</b>    |       |         |               | SeqNo: <b>3567280</b> |               | Prep Date:                               |      | DF: <b>1</b> |      |
| Analyte                | Result                           | PQL   | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Nitrate/Nitrite (as N) | ND                               | 0.200 |         |               |                       |               |                                          |      |              |      |

| <b>LCS</b>             | Sample ID: <b>WLCSW1-R162963</b> |       |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/17/2014 11:41 AM</b> |      |              |      |
|------------------------|----------------------------------|-------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| Client ID:             | Run ID: <b>ICS3K2_140317A</b>    |       |         |               | SeqNo: <b>3567281</b> |               | Prep Date:                               |      | DF: <b>1</b> |      |
| Analyte                | Result                           | PQL   | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Nitrate/Nitrite (as N) | 7.787                            | 0.200 | 8       | 0             | 97.3                  | 90-110        |                                          |      |              |      |

| <b>MS</b>                      | Sample ID: <b>14030092-04BMS</b> |      |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/17/2014 01:14 PM</b> |      |              |      |
|--------------------------------|----------------------------------|------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| Client ID: <b>EB-B-2-28-14</b> | Run ID: <b>ICS3K2_140317A</b>    |      |         |               | SeqNo: <b>3567284</b> |               | Prep Date:                               |      | DF: <b>5</b> |      |
| Analyte                        | Result                           | PQL  | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Nitrate/Nitrite (as N)         | 19.93                            | 1.00 | 20      | 0             | 99.6                  | 80-120        |                                          |      |              |      |

| <b>MSD</b>                     | Sample ID: <b>14030092-04BMSD</b> |      |         |               | Units: <b>mg/L</b>    |               | Analysis Date: <b>3/17/2014 01:39 PM</b> |      |              |      |
|--------------------------------|-----------------------------------|------|---------|---------------|-----------------------|---------------|------------------------------------------|------|--------------|------|
| Client ID: <b>EB-B-2-28-14</b> | Run ID: <b>ICS3K2_140317A</b>     |      |         |               | SeqNo: <b>3567285</b> |               | Prep Date:                               |      | DF: <b>5</b> |      |
| Analyte                        | Result                            | PQL  | SPK Val | SPK Ref Value | %REC                  | Control Limit | RPD Ref Value                            | %RPD | RPD Limit    | Qual |
| Nitrate/Nitrite (as N)         | 19.59                             | 1.00 | 20      | 0             | 98                    | 80-120        | 19.93                                    | 1.7  | 20           |      |

The following samples were analyzed in this batch:

|              |              |
|--------------|--------------|
| 14030092-03B | 14030092-04B |
|--------------|--------------|

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Project:** Navajo Lea Refinery Semi-Annual  
**WorkOrder:** 14030092

## QUALIFIERS, ACRONYMS, UNITS

| <u>Qualifier</u> | <u>Description</u>                                                        |
|------------------|---------------------------------------------------------------------------|
| *                | Value exceeds Regulatory Limit                                            |
| a                | Not accredited                                                            |
| B                | Analyte detected in the associated Method Blank above the Reporting Limit |
| E                | Value above quantitation range                                            |
| H                | Analyzed outside of Holding Time                                          |
| J                | Analyte detected below quantitation limit                                 |
| M                | Manually integrated, see raw data for justification                       |
| n                | Not offered for accreditation                                             |
| ND               | Not Detected at the Reporting Limit                                       |
| O                | Sample amount is > 4 times amount spiked                                  |
| P                | Dual Column results percent difference > 40%                              |
| R                | RPD above laboratory control limit                                        |
| S                | Spike Recovery outside laboratory control limits                          |
| U                | Analyzed but not detected above the MDL                                   |

| <u>Acronym</u> | <u>Description</u>                  |
|----------------|-------------------------------------|
| DCS            | Detectability Check Study           |
| DUP            | Method Duplicate                    |
| LCS            | Laboratory Control Sample           |
| LCSD           | Laboratory Control Sample Duplicate |
| MBLK           | Method Blank                        |
| MDL            | Method Detection Limit              |
| MQL            | Method Quantitation Limit           |
| MS             | Matrix Spike                        |
| MSD            | Matrix Spike Duplicate              |
| PDS            | Post Digestion Spike                |
| PQL            | Practical Quantitation Limit        |
| SD             | Serial Dilution                     |
| SDL            | Sample Detection Limit              |
| TRRP           | Texas Risk Reduction Program        |

| <u>Units Reported</u> | <u>Description</u>   |
|-----------------------|----------------------|
| µg/L                  | Micrograms per Liter |
| µmhos/cm              | micro mho per cm     |
| mg/L                  | Milligrams per Liter |
| pH Units              |                      |

## Sample Receipt Checklist

Client Name: **NAVAJO REFINING**

Date/Time Received: **04-Mar-14 11:40**

Work Order: **14030092**

Received by: **DLF**

Checklist completed by Salvador A. Yanez  
eSignature

04-Mar-14  
Date

Reviewed by: Sonia West  
eSignature

05-Mar-14  
Date

Matrices: **Water**

Carrier name: **FedEx**

|                                                         |                                         |                                        |                                                 |
|---------------------------------------------------------|-----------------------------------------|----------------------------------------|-------------------------------------------------|
| Shipping container/cooler in good condition?            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Not Present <input type="checkbox"/>            |
| Custody seals intact on shipping container/cooler?      | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Not Present <input type="checkbox"/>            |
| Custody seals intact on sample bottles?                 | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Present <input checked="" type="checkbox"/> |
| Chain of custody present?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                                 |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                                 |
| Chain of custody agrees with sample labels?             | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                                 |
| Samples in proper container/bottle?                     | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                                 |
| Sample containers intact?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                                 |
| Sufficient sample volume for indicated test?            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                                 |
| All samples received within holding time?               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                                 |
| Container/Temp Blank temperature in compliance?         | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                                 |
| Temperature(s)/Thermometer(s):                          | <u>3.0c/3.0c c/u</u>                    |                                        |                                                 |
| Cooler(s)/Kit(s):                                       | <u>5528, 7178, 4365, 3077, 3340</u>     |                                        |                                                 |
| Date/Time sample(s) sent to storage:                    | <u>3/4/2014 12:26</u>                   |                                        |                                                 |
| Water - VOA vials have zero headspace?                  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | No VOA vials submitted <input type="checkbox"/> |
| Water - pH acceptable upon receipt?                     | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | N/A <input type="checkbox"/>                    |
| pH adjusted?                                            | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> | N/A <input type="checkbox"/>                    |
| pH adjusted by:                                         | <u>-</u>                                |                                        |                                                 |

Login Notes: COC says MW-15 2/28 @1845, Containers say MW-14 2/28 @1845. As per clients email labeled as MW-14.

Client Contacted:

Date Contacted:

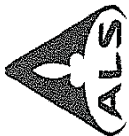
Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



Cincinnati, OH  
+1 513 733 5336  
Everett, WA  
+1 425 356 2600

Fort Collins, CO  
+1 970 490 1511  
Holland, MI  
+1 616 399 6070

## Chain of Custody Form

Page 1 of 1

COC ID: 101373

**Environmental**



14030092

NAVAJO REFINING: Navajo Refining Company  
Project: Navajo Lea Refinery Semi-Annual

ALS Project Manager:

| Customer Information |                             |         |      | Project Information |                                    |           |   |   |   |   |   |   |   |   |   |   |      |
|----------------------|-----------------------------|---------|------|---------------------|------------------------------------|-----------|---|---|---|---|---|---|---|---|---|---|------|
| Purchase Order       | 171658                      |         |      | Project Name        | Lovington Lea Refining Semi-Annual |           |   |   |   |   |   |   |   |   |   |   |      |
| Work Order           |                             |         |      | Project Number      |                                    |           |   |   |   |   |   |   |   |   |   |   |      |
| Company Name         | Navajo Refining Company     |         |      | Bill To Company     | Navajo Refining Company            |           |   |   |   |   |   |   |   |   |   |   |      |
| Send Report To       | Robert Combs                |         |      | Invoice Attn        | Robert Combs                       |           |   |   |   |   |   |   |   |   |   |   |      |
| Address              | PO Box 159<br>501 East Main |         |      | Address             | PO Box 159<br>501 East Main        |           |   |   |   |   |   |   |   |   |   |   |      |
| City/State/Zip       | Artesia, NM 88211           |         |      | City/State/Zip      | Artesia, NM 88211                  |           |   |   |   |   |   |   |   |   |   |   |      |
| Phone                | (575) 748-6733              |         |      | Phone               | (575) 748-6733                     |           |   |   |   |   |   |   |   |   |   |   |      |
| Fax                  | (575) 748-5421              |         |      | Fax                 | (575) 748-5421                     |           |   |   |   |   |   |   |   |   |   |   |      |
| e-Mail Address       | jisper@trasolutions.com     |         |      | e-Mail Address      | Robert.Combs@holtynter.com         |           |   |   |   |   |   |   |   |   |   |   |      |
| No.                  | Sample Description          | Date    | Time | Matrix              | Pres.                              | # Bottles | A | B | C | D | E | F | G | H | I | J | Hold |
| 1                    | MW-11                       | 2/28/14 | 1825 | GW                  | 1, B                               | 3         | X |   |   |   |   |   |   |   |   |   |      |
| 2                    | MW-15                       | 2/28/14 | 1845 | GW                  | 1, B                               | 3         | X |   |   |   |   |   |   |   |   |   |      |
| 3                    | EB-A-2-28-14                | 2/28/14 | 1900 | GW                  | 1, B                               | 8         | X | X |   |   | X | X | X | X | X | X |      |
| 4                    | EB-B-2-28-14                | 2/28/14 | 1900 | GW                  | 1, B                               | 8         | X | X |   |   | X | X | X | X | X | X |      |
| 5                    | EB-C-3-14                   | 2/28/14 | -    | W                   | 1, B                               | 2         | X |   |   |   |   |   |   |   |   |   |      |
| 6                    |                             |         |      |                     |                                    |           |   |   |   |   |   |   |   |   |   |   |      |
| 7                    |                             |         |      |                     |                                    |           |   |   |   |   |   |   |   |   |   |   |      |
| 8                    |                             |         |      |                     |                                    |           |   |   |   |   |   |   |   |   |   |   |      |
| 9                    |                             |         |      |                     |                                    |           |   |   |   |   |   |   |   |   |   |   |      |
| 10                   |                             |         |      |                     |                                    |           |   |   |   |   |   |   |   |   |   |   |      |

| Samples(s) Please Print & Sign |  | Shipment Method |  | Required Turnaround Time: (Check Box) |  | Results Due Date:                                          |  |
|--------------------------------|--|-----------------|--|---------------------------------------|--|------------------------------------------------------------|--|
| John Allen 3-3-14              |  | Fed Ex          |  | Other                                 |  |                                                            |  |
| Requested by:                  |  | Date: 3-3-14    |  | Std 10 WK Days                        |  | 10 Day TAT. ALS Project: Navajo - Lea Refinery Semi-Annual |  |
| Relinquished by:               |  | Date: 3/4/14    |  | 5 WK Days                             |  | 24 Hour                                                    |  |
| Logged by (Laboratory):        |  | Time: 1100      |  | Notes:                                |  | QC Package: (Check One Box Below)                          |  |
|                                |  | Time: 1100      |  | Cooler ID                             |  | Cooler Temp.                                               |  |
|                                |  | Time: 1100      |  | Level II Std QC                       |  | Level III Std QC/Raw Data                                  |  |
|                                |  |                 |  | Level IV SW646/CLP                    |  | TRRP CheckList                                             |  |
|                                |  |                 |  | Other / EDD                           |  | TRRP Level IV                                              |  |

Preservative Key: 1-HCl 2-HNO<sub>3</sub> 3-H<sub>2</sub>SO<sub>4</sub> 4-NaOH 5-Na<sub>2</sub>S<sub>2</sub>O<sub>3</sub> 6-NaHSO<sub>4</sub> 7-Other 8-4°C 9-5035

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.

3. The Chain of Custody is a legal document. All information must be completed accurately.

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**ALS Environmental**

10450 Stancilff Rd., Suite 210  
Houston, Texas 77099  
Tel. +1 281 530 5656  
Fax. +1 281 530 5887

**CUSTODY SEAL**

Date: 3-3-14 Time: 1100  
Name: [Signature]  
Company: [Signature]

Seal Broken By:

Date:



**ALS Environmental**

10450 Stancilff Rd., Suite 210  
Houston, Texas 77099  
Tel. +1 281 530 5656  
Fax. +1 281 530 5887

**CUSTODY SEAL**

Date: 3-3-14 Time: 1100  
Name: [Signature]  
Company: [Signature]

Seal Broken By:

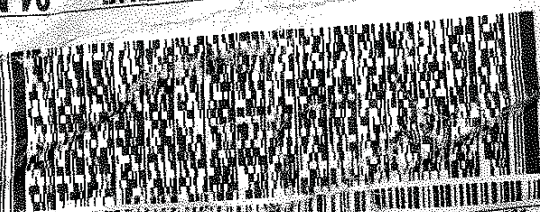
Date:



**AB SGRA**

TRK# 8042 5198 8809  
1 of 5  
## MASTER ##  
0215

TUE - 04 MAR 10:30A  
PRIORITY OVERNIGHT  
77099 IAH TX-US



UNITED STATES US  
CLIENT SERVICES  
ALS LABORATORY GROUP  
10450 STANCLIFF RD  
STE 210  
HOUSTON TX 77099  
REF: (281) 530-5656

SHI P. DATE: 03/04/14  
ACTI AGT: SB, LB  
DIM S: 39x13x14 IN  
BY LL RECIPIENT





Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

March 25, 2014

Robert Combs  
Navajo Refining Company  
P.O. Box 159  
Artesia, NM 88211-0159  
TEL: (575) 748-3311  
FAX

RE: Skinner List

OrderNo.: 1403230

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 3/6/2014 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1403230**

Date Reported: 3/25/2014

**CLIENT:** Navajo Refining Company

**Client Sample ID:** East Water Well

**Project:** Skinner List

**Collection Date:** 3/5/2014 7:00:00 AM

**Lab ID:** 1403230-001

**Matrix:** AQUEOUS

**Received Date:** 3/6/2014 9:15:00 AM

| Analyses                                   | Result  | MDL      | RL      | Qual | Units | DF | Date Analyzed         | Batch ID |
|--------------------------------------------|---------|----------|---------|------|-------|----|-----------------------|----------|
| <b>EPA METHOD 7470: MERCURY</b>            |         |          |         |      |       |    | Analyst: <b>JML</b>   |          |
| Mercury                                    | 0.00011 | 0.000087 | 0.00020 | J    | mg/L  | 1  | 3/11/2014 1:21:56 PM  | 12104    |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |         |          |         |      |       |    | Analyst: <b>ELS</b>   |          |
| Antimony                                   | ND      | 0.015    | 0.050   |      | mg/L  | 1  | 3/12/2014 12:52:39 PM | 12125    |
| Arsenic                                    | ND      | 0.0093   | 0.020   |      | mg/L  | 1  | 3/12/2014 12:52:39 PM | 12125    |
| Barium                                     | 0.099   | 0.00062  | 0.020   |      | mg/L  | 1  | 3/12/2014 12:52:39 PM | 12125    |
| Beryllium                                  | ND      | 0.00035  | 0.0030  |      | mg/L  | 1  | 3/12/2014 12:52:39 PM | 12125    |
| Cadmium                                    | ND      | 0.00063  | 0.0020  |      | mg/L  | 1  | 3/12/2014 12:52:39 PM | 12125    |
| Chromium                                   | 0.012   | 0.0017   | 0.0060  |      | mg/L  | 1  | 3/12/2014 12:52:39 PM | 12125    |
| Cobalt                                     | ND      | 0.0015   | 0.0060  |      | mg/L  | 1  | 3/12/2014 12:52:39 PM | 12125    |
| Copper                                     | 0.017   | 0.0046   | 0.0060  |      | mg/L  | 1  | 3/12/2014 12:52:39 PM | 12125    |
| Lead                                       | ND      | 0.0048   | 0.0050  |      | mg/L  | 1  | 3/12/2014 12:52:39 PM | 12125    |
| Nickel                                     | ND      | 0.0019   | 0.010   |      | mg/L  | 1  | 3/12/2014 12:52:39 PM | 12125    |
| Selenium                                   | ND      | 0.022    | 0.050   |      | mg/L  | 1  | 3/12/2014 12:52:39 PM | 12125    |
| Silver                                     | ND      | 0.00052  | 0.0050  |      | mg/L  | 1  | 3/12/2014 12:52:39 PM | 12125    |
| Vanadium                                   | 0.027   | 0.0055   | 0.050   | J    | mg/L  | 1  | 3/12/2014 12:52:39 PM | 12125    |
| Zinc                                       | 0.019   | 0.0049   | 0.020   | J    | mg/L  | 1  | 3/12/2014 12:52:39 PM | 12125    |
| <b>EPA METHOD 8260B: VOLATILES</b>         |         |          |         |      |       |    | Analyst: <b>KJH</b>   |          |
| Benzene                                    | ND      | 0.46     | 1.0     |      | µg/L  | 1  | 3/7/2014 4:21:30 PM   | R17203   |
| Toluene                                    | ND      | 0.44     | 1.0     |      | µg/L  | 1  | 3/7/2014 4:21:30 PM   | R17203   |
| Ethylbenzene                               | ND      | 0.45     | 1.0     |      | µg/L  | 1  | 3/7/2014 4:21:30 PM   | R17203   |
| Methyl tert-butyl ether (MTBE)             | ND      | 0.77     | 1.0     |      | µg/L  | 1  | 3/7/2014 4:21:30 PM   | R17203   |
| 1,2-Dichloroethane (EDC)                   | ND      | 0.33     | 1.0     |      | µg/L  | 1  | 3/7/2014 4:21:30 PM   | R17203   |
| 1,2-Dibromoethane (EDB)                    | ND      | 0.45     | 1.0     |      | µg/L  | 1  | 3/7/2014 4:21:30 PM   | R17203   |
| 2-Butanone                                 | ND      | 1.4      | 10      |      | µg/L  | 1  | 3/7/2014 4:21:30 PM   | R17203   |
| Carbon disulfide                           | ND      | 0.80     | 10      |      | µg/L  | 1  | 3/7/2014 4:21:30 PM   | R17203   |
| Chlorobenzene                              | ND      | 0.49     | 1.0     |      | µg/L  | 1  | 3/7/2014 4:21:30 PM   | R17203   |
| Chloroform                                 | ND      | 0.47     | 1.0     |      | µg/L  | 1  | 3/7/2014 4:21:30 PM   | R17203   |
| 1,1-Dichloroethane                         | ND      | 0.33     | 1.0     |      | µg/L  | 1  | 3/7/2014 4:21:30 PM   | R17203   |
| Styrene                                    | ND      | 0.58     | 1.0     |      | µg/L  | 1  | 3/7/2014 4:21:30 PM   | R17203   |
| Tetrachloroethene (PCE)                    | ND      | 0.49     | 1.0     |      | µg/L  | 1  | 3/7/2014 4:21:30 PM   | R17203   |
| 1,1,2-Trichloroethane                      | ND      | 0.42     | 1.0     |      | µg/L  | 1  | 3/7/2014 4:21:30 PM   | R17203   |
| Trichloroethene (TCE)                      | ND      | 0.42     | 1.0     |      | µg/L  | 1  | 3/7/2014 4:21:30 PM   | R17203   |
| Xylenes, Total                             | ND      | 1.4      | 1.5     |      | µg/L  | 1  | 3/7/2014 4:21:30 PM   | R17203   |
| 1,4-Dioxane                                | ND      | 10       | 10      |      | µg/L  | 1  | 3/7/2014 4:21:30 PM   | R17203   |
| Surr: 1,2-Dichloroethane-d4                | 93.3    | 0        | 70-130  |      | %REC  | 1  | 3/7/2014 4:21:30 PM   | R17203   |
| Surr: 4-Bromofluorobenzene                 | 90.8    | 0        | 70-130  |      | %REC  | 1  | 3/7/2014 4:21:30 PM   | R17203   |
| Surr: Dibromofluoromethane                 | 98.5    | 0        | 70-130  |      | %REC  | 1  | 3/7/2014 4:21:30 PM   | R17203   |
| Surr: Toluene-d8                           | 88.5    | 0        | 70-130  |      | %REC  | 1  | 3/7/2014 4:21:30 PM   | R17203   |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |                                                   |                                                      |
|--------------------|---------------------------------------------------|------------------------------------------------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    |
|                    | E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |
|                    | J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               |
|                    | O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
|                    | R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
|                    | S Spike Recovery outside accepted recovery limits |                                                      |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1403230**

Date Reported: 3/25/2014

**CLIENT:** Navajo Refining Company

**Client Sample ID:** East Water Well

**Project:** Skinner List

**Collection Date:** 3/5/2014 7:00:00 AM

**Lab ID:** 1403230-001

**Matrix:** AQUEOUS

**Received Date:** 3/6/2014 9:15:00 AM

| Analyses                        | Result | MDL    | RL     | Qual | Units | DF | Date Analyzed | Batch ID |
|---------------------------------|--------|--------|--------|------|-------|----|---------------|----------|
| <b>EPA 8270D: SEMIVOLATILES</b> |        |        |        |      |       |    | Analyst: SUB  |          |
| Dibenz(a,h)acridine             | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| Benzenethiol                    | ND     | 0.5000 | 5.000  |      | µg/L  | 1  | 3/17/2014     | R17550   |
| Indene                          | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| 1,2-Dichlorobenzene             | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| 1,3-Dichlorobenzene             | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| 1,4-Dichlorobenzene             | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| 1-Methylnaphthalene             | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| 2,4-Dimethylphenol              | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| 2,4-Dinitrophenol               | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| 2-Methylphenol                  | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| 3+4-Methylphenol                | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| 4-Nitrophenol                   | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| Acenaphthylene                  | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| Anthracene                      | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| Benz(a)anthracene               | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| Benzo(a)pyrene                  | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| Benzo(b)fluoranthene            | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| Benzo(k)fluoranthene            | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| Bis(2-ethylhexyl)phthalate      | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| Chrysene                        | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| Dibenz(a,h)anthracene           | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| Diethyl phthalate               | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| Dimethyl phthalate              | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| Di-n-butyl phthalate            | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| Fluoranthene                    | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| Fluorene                        | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| Indeno(1,2,3-cd)pyrene          | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| Naphthalene                     | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| Phenanthrene                    | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| Phenol                          | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| Pyrene                          | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| Pyridine                        | ND     | 0.1000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| Quinoline                       | ND     | 0.5000 | 0.5000 |      | µg/L  | 1  | 3/17/2014     | R17550   |
| Surr: 2,4,6-Tribromophenol      | 104    | 0      | 53-122 |      | %REC  | 1  | 3/17/2014     | R17550   |
| Surr: 2-Fluorobiphenyl          | 89.6   | 0      | 12-116 |      | %REC  | 1  | 3/17/2014     | R17550   |
| Surr: 2-Fluorophenol            | 99.4   | 0      | 10-139 |      | %REC  | 1  | 3/17/2014     | R17550   |
| Surr: Nitrobenzene-d5           | 94.4   | 0      | 68-118 |      | %REC  | 1  | 3/17/2014     | R17550   |
| Surr: Phenol-d5                 | 112    | 0      | 28-154 |      | %REC  | 1  | 3/17/2014     | R17550   |
| Surr: Terphenyl-d14             | 101    | 0      | 52-144 |      | %REC  | 1  | 3/17/2014     | R17550   |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |   |                                                 |    |                                                    |
|--------------------|---|-------------------------------------------------|----|----------------------------------------------------|
| <b>Qualifiers:</b> | * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    |
|                    | E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |
|                    | J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |
|                    | O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |
|                    | R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |
|                    | S | Spike Recovery outside accepted recovery limits |    |                                                    |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1403230**

Date Reported: 3/25/2014

**CLIENT:** Navajo Refining Company

**Client Sample ID:** East Water Well

**Project:** Skinner List

**Collection Date:** 3/5/2014 7:00:00 AM

**Lab ID:** 1403230-001

**Matrix:** AQUEOUS

**Received Date:** 3/6/2014 9:15:00 AM

| Analyses                               | Result | MDL   | RL    | Qual | Units | DF | Date Analyzed       | Batch ID |
|----------------------------------------|--------|-------|-------|------|-------|----|---------------------|----------|
| <b>EPA 335.4: TOTAL CYANIDE SUBBED</b> |        |       |       |      |       |    | Analyst: <b>SUB</b> |          |
| Cyanide                                | ND     | 0.010 | 0.010 |      | mg/L  | 1  | 3/12/2014           | R17550   |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |   |                                                 |    |                                                    |
|--------------------|---|-------------------------------------------------|----|----------------------------------------------------|
| <b>Qualifiers:</b> | * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    |
|                    | E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |
|                    | J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |
|                    | O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |
|                    | R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |
|                    | S | Spike Recovery outside accepted recovery limits |    |                                                    |

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1403230**

Date Reported: 3/25/2014

**CLIENT:** Navajo Refining Company

**Client Sample ID:** TRIP BLANK

**Project:** Skinner List

**Collection Date:**

**Lab ID:** 1403230-002

**Matrix:** TRIP BLANK

**Received Date:** 3/6/2014 9:15:00 AM

| Analyses                           | Result | MDL  | RL     | Qual | Units | DF | Date Analyzed       | Batch ID |
|------------------------------------|--------|------|--------|------|-------|----|---------------------|----------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |      |        |      |       |    | Analyst: <b>KJH</b> |          |
| Benzene                            | ND     | 0.46 | 1.0    |      | µg/L  | 1  | 3/7/2014 4:49:32 PM | R17203   |
| Toluene                            | ND     | 0.44 | 1.0    |      | µg/L  | 1  | 3/7/2014 4:49:32 PM | R17203   |
| Ethylbenzene                       | ND     | 0.45 | 1.0    |      | µg/L  | 1  | 3/7/2014 4:49:32 PM | R17203   |
| Methyl tert-butyl ether (MTBE)     | ND     | 0.77 | 1.0    |      | µg/L  | 1  | 3/7/2014 4:49:32 PM | R17203   |
| 1,2-Dichloroethane (EDC)           | ND     | 0.33 | 1.0    |      | µg/L  | 1  | 3/7/2014 4:49:32 PM | R17203   |
| 1,2-Dibromoethane (EDB)            | ND     | 0.45 | 1.0    |      | µg/L  | 1  | 3/7/2014 4:49:32 PM | R17203   |
| 2-Butanone                         | 3.0    | 1.4  | 10     | J    | µg/L  | 1  | 3/7/2014 4:49:32 PM | R17203   |
| Carbon disulfide                   | ND     | 0.80 | 10     |      | µg/L  | 1  | 3/7/2014 4:49:32 PM | R17203   |
| Chlorobenzene                      | ND     | 0.49 | 1.0    |      | µg/L  | 1  | 3/7/2014 4:49:32 PM | R17203   |
| Chloroform                         | ND     | 0.47 | 1.0    |      | µg/L  | 1  | 3/7/2014 4:49:32 PM | R17203   |
| 1,1-Dichloroethane                 | ND     | 0.33 | 1.0    |      | µg/L  | 1  | 3/7/2014 4:49:32 PM | R17203   |
| Styrene                            | ND     | 0.58 | 1.0    |      | µg/L  | 1  | 3/7/2014 4:49:32 PM | R17203   |
| Tetrachloroethene (PCE)            | ND     | 0.49 | 1.0    |      | µg/L  | 1  | 3/7/2014 4:49:32 PM | R17203   |
| 1,1,1-Trichloroethane              | ND     | 0.40 | 1.0    |      | µg/L  | 1  | 3/7/2014 4:49:32 PM | R17203   |
| Trichloroethene (TCE)              | ND     | 0.42 | 1.0    |      | µg/L  | 1  | 3/7/2014 4:49:32 PM | R17203   |
| Xylenes, Total                     | ND     | 1.4  | 1.5    |      | µg/L  | 1  | 3/7/2014 4:49:32 PM | R17203   |
| 1,4-Dioxane                        | ND     | 10   | 10     |      | µg/L  | 1  | 3/7/2014 4:49:32 PM | R17203   |
| Surr: 1,2-Dichloroethane-d4        | 88.8   | 0    | 70-130 |      | %REC  | 1  | 3/7/2014 4:49:32 PM | R17203   |
| Surr: 4-Bromofluorobenzene         | 90.2   | 0    | 70-130 |      | %REC  | 1  | 3/7/2014 4:49:32 PM | R17203   |
| Surr: Dibromofluoromethane         | 93.9   | 0    | 70-130 |      | %REC  | 1  | 3/7/2014 4:49:32 PM | R17203   |
| Surr: Toluene-d8                   | 91.5   | 0    | 70-130 |      | %REC  | 1  | 3/7/2014 4:49:32 PM | R17203   |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |   |                                                 |    |                                                    |
|--------------------|---|-------------------------------------------------|----|----------------------------------------------------|
| <b>Qualifiers:</b> | * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    |
|                    | E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |
|                    | J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |
|                    | O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |
|                    | R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |
|                    | S | Spike Recovery outside accepted recovery limits |    |                                                    |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1403230

25-Mar-14

Client: Navajo Refining Company

Project: Skinner List

|                                |        |                         |           |             |                                       |          |             |      |          |      |
|--------------------------------|--------|-------------------------|-----------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID                      | 5ml-rb | SampType: MBLK          |           |             | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID:                     | PBW    | Batch ID: R17203        |           |             | RunNo: 17203                          |          |             |      |          |      |
| Prep Date:                     |        | Analysis Date: 3/7/2014 |           |             | SeqNo: 494990                         |          | Units: µg/L |      |          |      |
| Analyte                        | Result | PQL                     | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                        | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Toluene                        | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Ethylbenzene                   | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Methyl tert-butyl ether (MTBE) | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,2,4-Trimethylbenzene         | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,3,5-Trimethylbenzene         | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,2-Dichloroethane (EDC)       | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,2-Dibromoethane (EDB)        | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Naphthalene                    | ND     | 2.0                     |           |             |                                       |          |             |      |          |      |
| 1-Methylnaphthalene            | ND     | 4.0                     |           |             |                                       |          |             |      |          |      |
| 2-Methylnaphthalene            | ND     | 4.0                     |           |             |                                       |          |             |      |          |      |
| Acetone                        | ND     | 10                      |           |             |                                       |          |             |      |          |      |
| Bromobenzene                   | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Bromodichloromethane           | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Bromoform                      | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Bromomethane                   | ND     | 3.0                     |           |             |                                       |          |             |      |          |      |
| Carbon disulfide               | ND     | 10                      |           |             |                                       |          |             |      |          |      |
| Carbon Tetrachloride           | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Chlorobenzene                  | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Chloroethane                   | ND     | 2.0                     |           |             |                                       |          |             |      |          |      |
| Chloroform                     | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Chloromethane                  | ND     | 3.0                     |           |             |                                       |          |             |      |          |      |
| 2-Chlorotoluene                | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 4-Chlorotoluene                | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| cis-1,2-DCE                    | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| cis-1,3-Dichloropropene        | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,2-Dibromo-3-chloropropane    | ND     | 2.0                     |           |             |                                       |          |             |      |          |      |
| Dibromochloromethane           | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Dibromomethane                 | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,2-Dichlorobenzene            | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,3-Dichlorobenzene            | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,4-Dichlorobenzene            | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Dichlorodifluoromethane        | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,1-Dichloroethane             | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,1-Dichloroethene             | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,2-Dichloropropane            | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,3-Dichloropropane            | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 2,2-Dichloropropane            | ND     | 2.0                     |           |             |                                       |          |             |      |          |      |
| 1,1-Dichloropropene            | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1403230

25-Mar-14

Client: Navajo Refining Company

Project: Skinner List

|                             |        |                         |           |             |      |                                       |             |      |          |      |
|-----------------------------|--------|-------------------------|-----------|-------------|------|---------------------------------------|-------------|------|----------|------|
| Sample ID                   | 5ml-rb | SampType: MBLK          |           |             |      | TestCode: EPA Method 8260B: VOLATILES |             |      |          |      |
| Client ID:                  | PBW    | Batch ID: R17203        |           |             |      | RunNo: 17203                          |             |      |          |      |
| Prep Date:                  |        | Analysis Date: 3/7/2014 |           |             |      | SeqNo: 494990                         | Units: µg/L |      |          |      |
| Analyte                     | Result | PQL                     | SPK value | SPK Ref Val | %REC | LowLimit                              | HighLimit   | %RPD | RPDLimit | Qual |
| Hexachlorobutadiene         | ND     | 1.0                     |           |             |      |                                       |             |      |          |      |
| 2-Hexanone                  | ND     | 10                      |           |             |      |                                       |             |      |          |      |
| Isopropylbenzene            | ND     | 1.0                     |           |             |      |                                       |             |      |          |      |
| 4-Isopropyltoluene          | ND     | 1.0                     |           |             |      |                                       |             |      |          |      |
| 4-Methyl-2-pentanone        | ND     | 10                      |           |             |      |                                       |             |      |          |      |
| Methylene Chloride          | ND     | 3.0                     |           |             |      |                                       |             |      |          |      |
| n-Butylbenzene              | ND     | 3.0                     |           |             |      |                                       |             |      |          |      |
| n-Propylbenzene             | ND     | 1.0                     |           |             |      |                                       |             |      |          |      |
| sec-Butylbenzene            | ND     | 1.0                     |           |             |      |                                       |             |      |          |      |
| Styrene                     | ND     | 1.0                     |           |             |      |                                       |             |      |          |      |
| tert-Butylbenzene           | ND     | 1.0                     |           |             |      |                                       |             |      |          |      |
| 1,1,1,2-Tetrachloroethane   | ND     | 1.0                     |           |             |      |                                       |             |      |          |      |
| 1,1,2,2-Tetrachloroethane   | ND     | 2.0                     |           |             |      |                                       |             |      |          |      |
| Tetrachloroethene (PCE)     | ND     | 1.0                     |           |             |      |                                       |             |      |          |      |
| trans-1,2-DCE               | ND     | 1.0                     |           |             |      |                                       |             |      |          |      |
| trans-1,3-Dichloropropene   | ND     | 1.0                     |           |             |      |                                       |             |      |          |      |
| 1,2,3-Trichlorobenzene      | ND     | 1.0                     |           |             |      |                                       |             |      |          |      |
| 1,2,4-Trichlorobenzene      | ND     | 1.0                     |           |             |      |                                       |             |      |          |      |
| 1,1,1-Trichloroethane       | ND     | 1.0                     |           |             |      |                                       |             |      |          |      |
| 1,1,2-Trichloroethane       | ND     | 1.0                     |           |             |      |                                       |             |      |          |      |
| Trichloroethene (TCE)       | ND     | 1.0                     |           |             |      |                                       |             |      |          |      |
| Trichlorofluoromethane      | ND     | 1.0                     |           |             |      |                                       |             |      |          |      |
| 1,2,3-Trichloropropane      | ND     | 2.0                     |           |             |      |                                       |             |      |          |      |
| Vinyl chloride              | ND     | 1.0                     |           |             |      |                                       |             |      |          |      |
| Xylenes, Total              | ND     | 1.5                     |           |             |      |                                       |             |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 9.1    |                         | 10.00     |             | 91.3 | 70                                    | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 9.2    |                         | 10.00     |             | 92.2 | 70                                    | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 9.7    |                         | 10.00     |             | 97.0 | 70                                    | 130         |      |          |      |
| Surr: Toluene-d8            | 8.9    |                         | 10.00     |             | 88.7 | 70                                    | 130         |      |          |      |

|                    |                   |                         |           |             |      |                                       |             |      |          |      |
|--------------------|-------------------|-------------------------|-----------|-------------|------|---------------------------------------|-------------|------|----------|------|
| Sample ID          | 100nglcs200nganne | SampType: LCS           |           |             |      | TestCode: EPA Method 8260B: VOLATILES |             |      |          |      |
| Client ID:         | LCSW              | Batch ID: R17203        |           |             |      | RunNo: 17203                          |             |      |          |      |
| Prep Date:         |                   | Analysis Date: 3/7/2014 |           |             |      | SeqNo: 494992                         | Units: µg/L |      |          |      |
| Analyte            | Result            | PQL                     | SPK value | SPK Ref Val | %REC | LowLimit                              | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene            | 22                | 1.0                     | 20.00     | 0           | 108  | 70                                    | 130         |      |          |      |
| Toluene            | 20                | 1.0                     | 20.00     | 0           | 101  | 80                                    | 120         |      |          |      |
| Chlorobenzene      | 20                | 1.0                     | 20.00     | 0           | 99.4 | 70                                    | 130         |      |          |      |
| 1,1-Dichloroethene | 22                | 1.0                     | 20.00     | 0           | 108  | 90                                    | 143         |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1403230

25-Mar-14

Client: Navajo Refining Company

Project: Skinner List

|                             |                   |                         |           |             |                                       |          |             |      |          |      |
|-----------------------------|-------------------|-------------------------|-----------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 100nglcs200nganne | SampType: LCS           |           |             | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID:                  | LCSW              | Batch ID: R17203        |           |             | RunNo: 17203                          |          |             |      |          |      |
| Prep Date:                  |                   | Analysis Date: 3/7/2014 |           |             | SeqNo: 494992                         |          | Units: µg/L |      |          |      |
| Analyte                     | Result            | PQL                     | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Trichloroethene (TCE)       | 21                | 1.0                     | 20.00     | 0           | 103                                   | 70       | 130         |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 9.0               |                         | 10.00     |             | 90.2                                  | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 8.6               |                         | 10.00     |             | 85.8                                  | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 9.6               |                         | 10.00     |             | 96.0                                  | 70       | 130         |      |          |      |
| Surr: Toluene-d8            | 9.2               |                         | 10.00     |             | 91.8                                  | 70       | 130         |      |          |      |

### Qualifiers:

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E Value above quantitation range  
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H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1403230

25-Mar-14

Client: Navajo Refining Company

Project: Skinner List

|                            |                  |      |                                 |             |      |                                           |           |                    |          |      |
|----------------------------|------------------|------|---------------------------------|-------------|------|-------------------------------------------|-----------|--------------------|----------|------|
| Sample ID                  | <b>MB-R17550</b> |      | SampType: <b>MBLK</b>           |             |      | TestCode: <b>EPA 8270D: Semivolatiles</b> |           |                    |          |      |
| Client ID:                 | <b>PBW</b>       |      | Batch ID: <b>R17550</b>         |             |      | RunNo: <b>17550</b>                       |           |                    |          |      |
| Prep Date:                 |                  |      | Analysis Date: <b>3/17/2014</b> |             |      | SeqNo: <b>505607</b>                      |           | Units: <b>µg/L</b> |          |      |
| Analyte                    | Result           | PQL  | SPK value                       | SPK Ref Val | %REC | LowLimit                                  | HighLimit | %RPD               | RPDLimit | Qual |
| 1,2-Dichlorobenzene        | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| 1,3-Dichlorobenzene        | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| 1,4-Dichlorobenzene        | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| 1-Methylnaphthalene        | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| 2,4-Dimethylphenol         | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| 2,4-Dinitrophenol          | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| 2-Methylphenol             | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| 3+4-Methylphenol           | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| 4-Nitrophenol              | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| Acenaphthylene             | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| Anthracene                 | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| Benz(a)anthracene          | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| Benzo(a)pyrene             | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| Benzo(b)fluoranthene       | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| Benzo(k)fluoranthene       | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| Bis(2-ethylhexyl)phthalate | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| Chrysene                   | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| Dibenz(a,h)anthracene      | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| Diethyl phthalate          | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| Dimethyl phthalate         | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| Di-n-butyl phthalate       | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| Fluoranthene               | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| Fluorene                   | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| Indeno(1,2,3-cd)pyrene     | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| Naphthalene                | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| Phenanthrene               | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| Phenol                     | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| Pyrene                     | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |
| Pyridine                   | ND               | 0.50 |                                 |             |      |                                           |           |                    |          |      |

|                            |                   |      |                                 |             |      |                                           |           |                    |          |      |
|----------------------------|-------------------|------|---------------------------------|-------------|------|-------------------------------------------|-----------|--------------------|----------|------|
| Sample ID                  | <b>LCS-R17550</b> |      | SampType: <b>LCS</b>            |             |      | TestCode: <b>EPA 8270D: Semivolatiles</b> |           |                    |          |      |
| Client ID:                 | <b>LCSW</b>       |      | Batch ID: <b>R17550</b>         |             |      | RunNo: <b>17550</b>                       |           |                    |          |      |
| Prep Date:                 |                   |      | Analysis Date: <b>3/17/2014</b> |             |      | SeqNo: <b>505608</b>                      |           | Units: <b>µg/L</b> |          |      |
| Analyte                    | Result            | PQL  | SPK value                       | SPK Ref Val | %REC | LowLimit                                  | HighLimit | %RPD               | RPDLimit | Qual |
| 1,4-Dichlorobenzene        | 4.6               | 0.50 | 5.000                           | 0           | 92.0 | 14                                        | 99        |                    |          |      |
| 4-Nitrophenol              | 6.3               | 0.50 | 5.000                           | 0           | 126  | 19                                        | 137       |                    |          |      |
| Bis(2-ethylhexyl)phthalate | 5.5               | 0.50 | 5.000                           | 0           | 109  | 43                                        | 142       |                    |          |      |
| Phenol                     | 5.4               | 0.50 | 5.000                           | 0           | 108  | 45                                        | 134       |                    |          |      |

### Qualifiers:

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E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1403230

25-Mar-14

Client: Navajo Refining Company

Project: Skinner List

|            |            |      |                          |             |                                    |          |             |      |          |      |
|------------|------------|------|--------------------------|-------------|------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LCS-R17550 |      | SampType: LCS            |             | TestCode: EPA 8270D: Semivolatiles |          |             |      |          |      |
| Client ID: | LCSW       |      | Batch ID: R17550         |             | RunNo: 17550                       |          |             |      |          |      |
| Prep Date: |            |      | Analysis Date: 3/17/2014 |             | SeqNo: 505608                      |          | Units: µg/L |      |          |      |
| Analyte    | Result     | PQL  | SPK value                | SPK Ref Val | %REC                               | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Pyrene     | 5.3        | 0.50 | 5.000                    | 0           | 105                                | 45       | 139         |      |          |      |

### Qualifiers:

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RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1403230

25-Mar-14

Client: Navajo Refining Company

Project: Skinner List

|            |           |       |                          |             |      |                                           |           |             |          |      |  |
|------------|-----------|-------|--------------------------|-------------|------|-------------------------------------------|-----------|-------------|----------|------|--|
| Sample ID  | MB-R17550 |       | SampType: MBLK           |             |      | TestCode: EPA 335.4: Total Cyanide Subbed |           |             |          |      |  |
| Client ID: | PBW       |       | Batch ID: R17550         |             |      | RunNo: 17550                              |           |             |          |      |  |
| Prep Date: |           |       | Analysis Date: 3/12/2014 |             |      | SeqNo: 505610                             |           | Units: mg/L |          |      |  |
| Analyte    | Result    | PQL   | SPK value                | SPK Ref Val | %REC | LowLimit                                  | HighLimit | %RPD        | RPDLimit | Qual |  |
| Cyanide    | ND        | 0.010 |                          |             |      |                                           |           |             |          |      |  |

|            |            |       |                          |             |      |                                           |           |             |          |      |  |
|------------|------------|-------|--------------------------|-------------|------|-------------------------------------------|-----------|-------------|----------|------|--|
| Sample ID  | LCS-R17550 |       | SampType: LCS            |             |      | TestCode: EPA 335.4: Total Cyanide Subbed |           |             |          |      |  |
| Client ID: | LCSW       |       | Batch ID: R17550         |             |      | RunNo: 17550                              |           |             |          |      |  |
| Prep Date: |            |       | Analysis Date: 3/12/2014 |             |      | SeqNo: 505611                             |           | Units: mg/L |          |      |  |
| Analyte    | Result     | PQL   | SPK value                | SPK Ref Val | %REC | LowLimit                                  | HighLimit | %RPD        | RPDLimit | Qual |  |
| Cyanide    | 0.50       | 0.010 | 0.5000                   | 0           | 100  | 80                                        | 120       |             |          |      |  |

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ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1403230

25-Mar-14

Client: Navajo Refining Company

Project: Skinner List

|            |                  |         |                                 |             |                                           |          |                    |      |          |      |
|------------|------------------|---------|---------------------------------|-------------|-------------------------------------------|----------|--------------------|------|----------|------|
| Sample ID  | <b>MB-12104</b>  |         | SampType: <b>MBLK</b>           |             | TestCode: <b>EPA Method 7470: Mercury</b> |          |                    |      |          |      |
| Client ID: | <b>PBW</b>       |         | Batch ID: <b>12104</b>          |             | RunNo: <b>17228</b>                       |          |                    |      |          |      |
| Prep Date: | <b>3/10/2014</b> |         | Analysis Date: <b>3/11/2014</b> |             | SeqNo: <b>495987</b>                      |          | Units: <b>mg/L</b> |      |          |      |
| Analyte    | Result           | PQL     | SPK value                       | SPK Ref Val | %REC                                      | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| Mercury    | 0.00014          | 0.00020 |                                 |             |                                           |          |                    |      |          | J    |

|            |                  |         |                                 |             |                                           |          |                    |      |          |      |
|------------|------------------|---------|---------------------------------|-------------|-------------------------------------------|----------|--------------------|------|----------|------|
| Sample ID  | <b>LCS-12104</b> |         | SampType: <b>LCS</b>            |             | TestCode: <b>EPA Method 7470: Mercury</b> |          |                    |      |          |      |
| Client ID: | <b>LCSW</b>      |         | Batch ID: <b>12104</b>          |             | RunNo: <b>17228</b>                       |          |                    |      |          |      |
| Prep Date: | <b>3/10/2014</b> |         | Analysis Date: <b>3/11/2014</b> |             | SeqNo: <b>495988</b>                      |          | Units: <b>mg/L</b> |      |          |      |
| Analyte    | Result           | PQL     | SPK value                       | SPK Ref Val | %REC                                      | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| Mercury    | 0.0052           | 0.00020 | 0.005000                        | 0           | 105                                       | 80       | 120                |      |          |      |

|            |                        |         |                                 |             |                                           |          |                    |      |          |      |
|------------|------------------------|---------|---------------------------------|-------------|-------------------------------------------|----------|--------------------|------|----------|------|
| Sample ID  | <b>1403230-001BMS</b>  |         | SampType: <b>MS</b>             |             | TestCode: <b>EPA Method 7470: Mercury</b> |          |                    |      |          |      |
| Client ID: | <b>East Water Well</b> |         | Batch ID: <b>12104</b>          |             | RunNo: <b>17228</b>                       |          |                    |      |          |      |
| Prep Date: | <b>3/10/2014</b>       |         | Analysis Date: <b>3/11/2014</b> |             | SeqNo: <b>495990</b>                      |          | Units: <b>mg/L</b> |      |          |      |
| Analyte    | Result                 | PQL     | SPK value                       | SPK Ref Val | %REC                                      | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| Mercury    | 0.0051                 | 0.00020 | 0.005000                        | 0.0001138   | 99.9                                      | 75       | 125                |      |          |      |

|            |                        |         |                                 |             |                                           |          |                    |       |          |      |
|------------|------------------------|---------|---------------------------------|-------------|-------------------------------------------|----------|--------------------|-------|----------|------|
| Sample ID  | <b>1403230-001BMSD</b> |         | SampType: <b>MSD</b>            |             | TestCode: <b>EPA Method 7470: Mercury</b> |          |                    |       |          |      |
| Client ID: | <b>East Water Well</b> |         | Batch ID: <b>12104</b>          |             | RunNo: <b>17228</b>                       |          |                    |       |          |      |
| Prep Date: | <b>3/10/2014</b>       |         | Analysis Date: <b>3/11/2014</b> |             | SeqNo: <b>495991</b>                      |          | Units: <b>mg/L</b> |       |          |      |
| Analyte    | Result                 | PQL     | SPK value                       | SPK Ref Val | %REC                                      | LowLimit | HighLimit          | %RPD  | RPDLimit | Qual |
| Mercury    | 0.0051                 | 0.00020 | 0.005000                        | 0.0001138   | 99.7                                      | 75       | 125                | 0.159 | 20       |      |

### Qualifiers:

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S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1403230

25-Mar-14

Client: Navajo Refining Company

Project: Skinner List

|            |           |                |           |             |                                     |          |           |      |          |      |
|------------|-----------|----------------|-----------|-------------|-------------------------------------|----------|-----------|------|----------|------|
| Sample ID  | MB-12125  | SampType:      | MBLK      | TestCode:   | EPA 6010B: Total Recoverable Metals |          |           |      |          |      |
| Client ID: | PBW       | Batch ID:      | 12125     | RunNo:      | 17264                               |          |           |      |          |      |
| Prep Date: | 3/11/2014 | Analysis Date: | 3/12/2014 | SeqNo:      | 497223                              | Units:   | mg/L      |      |          |      |
| Analyte    | Result    | PQL            | SPK value | SPK Ref Val | %REC                                | LowLimit | HighLimit | %RPD | RPDLimit | Qual |

|           |    |        |  |  |  |  |  |  |  |  |
|-----------|----|--------|--|--|--|--|--|--|--|--|
| Antimony  | ND | 0.050  |  |  |  |  |  |  |  |  |
| Arsenic   | ND | 0.020  |  |  |  |  |  |  |  |  |
| Barium    | ND | 0.020  |  |  |  |  |  |  |  |  |
| Beryllium | ND | 0.0030 |  |  |  |  |  |  |  |  |
| Cadmium   | ND | 0.0020 |  |  |  |  |  |  |  |  |
| Chromium  | ND | 0.0060 |  |  |  |  |  |  |  |  |
| Cobalt    | ND | 0.0060 |  |  |  |  |  |  |  |  |
| Copper    | ND | 0.0060 |  |  |  |  |  |  |  |  |
| Lead      | ND | 0.0050 |  |  |  |  |  |  |  |  |
| Nickel    | ND | 0.010  |  |  |  |  |  |  |  |  |
| Selenium  | ND | 0.050  |  |  |  |  |  |  |  |  |
| Silver    | ND | 0.0050 |  |  |  |  |  |  |  |  |
| Vanadium  | ND | 0.050  |  |  |  |  |  |  |  |  |
| Zinc      | ND | 0.020  |  |  |  |  |  |  |  |  |

|            |           |                |           |             |                                     |          |           |      |          |      |
|------------|-----------|----------------|-----------|-------------|-------------------------------------|----------|-----------|------|----------|------|
| Sample ID  | LCS-12125 | SampType:      | LCS       | TestCode:   | EPA 6010B: Total Recoverable Metals |          |           |      |          |      |
| Client ID: | LCSW      | Batch ID:      | 12125     | RunNo:      | 17264                               |          |           |      |          |      |
| Prep Date: | 3/11/2014 | Analysis Date: | 3/12/2014 | SeqNo:      | 497224                              | Units:   | mg/L      |      |          |      |
| Analyte    | Result    | PQL            | SPK value | SPK Ref Val | %REC                                | LowLimit | HighLimit | %RPD | RPDLimit | Qual |

|           |      |        |        |   |      |    |     |  |  |  |
|-----------|------|--------|--------|---|------|----|-----|--|--|--|
| Antimony  | 0.50 | 0.050  | 0.5000 | 0 | 99.4 | 80 | 120 |  |  |  |
| Arsenic   | 0.50 | 0.020  | 0.5000 | 0 | 101  | 80 | 120 |  |  |  |
| Barium    | 0.48 | 0.020  | 0.5000 | 0 | 96.2 | 80 | 120 |  |  |  |
| Beryllium | 0.52 | 0.0030 | 0.5000 | 0 | 103  | 80 | 120 |  |  |  |
| Cadmium   | 0.49 | 0.0020 | 0.5000 | 0 | 97.0 | 80 | 120 |  |  |  |
| Chromium  | 0.48 | 0.0060 | 0.5000 | 0 | 96.5 | 80 | 120 |  |  |  |
| Cobalt    | 0.47 | 0.0060 | 0.5000 | 0 | 94.7 | 80 | 120 |  |  |  |
| Copper    | 0.50 | 0.0060 | 0.5000 | 0 | 100  | 80 | 120 |  |  |  |
| Lead      | 0.48 | 0.0050 | 0.5000 | 0 | 95.0 | 80 | 120 |  |  |  |
| Nickel    | 0.46 | 0.010  | 0.5000 | 0 | 92.6 | 80 | 120 |  |  |  |
| Selenium  | 0.49 | 0.050  | 0.5000 | 0 | 98.0 | 80 | 120 |  |  |  |
| Silver    | 0.10 | 0.0050 | 0.1000 | 0 | 101  | 80 | 120 |  |  |  |
| Vanadium  | 0.50 | 0.050  | 0.5000 | 0 | 101  | 80 | 120 |  |  |  |
| Zinc      | 0.48 | 0.020  | 0.5000 | 0 | 95.2 | 80 | 120 |  |  |  |

|            |                 |                |           |             |                                     |          |           |      |          |      |
|------------|-----------------|----------------|-----------|-------------|-------------------------------------|----------|-----------|------|----------|------|
| Sample ID  | 1403230-001BMS  | SampType:      | MS        | TestCode:   | EPA 6010B: Total Recoverable Metals |          |           |      |          |      |
| Client ID: | East Water Well | Batch ID:      | 12125     | RunNo:      | 17264                               |          |           |      |          |      |
| Prep Date: | 3/11/2014       | Analysis Date: | 3/12/2014 | SeqNo:      | 497237                              | Units:   | mg/L      |      |          |      |
| Analyte    | Result          | PQL            | SPK value | SPK Ref Val | %REC                                | LowLimit | HighLimit | %RPD | RPDLimit | Qual |

### Qualifiers:

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- J Analyte detected below quantitation limits
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- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1403230

25-Mar-14

Client: Navajo Refining Company

Project: Skinner List

|            |                 |                          |           |                                               |      |          |             |      |          |      |
|------------|-----------------|--------------------------|-----------|-----------------------------------------------|------|----------|-------------|------|----------|------|
| Sample ID  | 1403230-001BMS  | SampType: MS             |           | TestCode: EPA 6010B: Total Recoverable Metals |      |          |             |      |          |      |
| Client ID: | East Water Well | Batch ID: 12125          |           | RunNo: 17264                                  |      |          |             |      |          |      |
| Prep Date: | 3/11/2014       | Analysis Date: 3/12/2014 |           | SeqNo: 497237                                 |      |          | Units: mg/L |      |          |      |
| Analyte    | Result          | PQL                      | SPK value | SPK Ref Val                                   | %REC | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Antimony   | 0.51            | 0.050                    | 0.5000    | 0                                             | 102  | 75       | 125         |      |          |      |
| Arsenic    | 0.52            | 0.020                    | 0.5000    | 0                                             | 104  | 75       | 125         |      |          |      |
| Barium     | 0.58            | 0.020                    | 0.5000    | 0.09852                                       | 96.0 | 75       | 125         |      |          |      |
| Beryllium  | 0.51            | 0.0030                   | 0.5000    | 0                                             | 102  | 75       | 125         |      |          |      |
| Cadmium    | 0.49            | 0.0020                   | 0.5000    | 0                                             | 97.6 | 75       | 125         |      |          |      |
| Chromium   | 0.49            | 0.0060                   | 0.5000    | 0.01197                                       | 96.0 | 75       | 125         |      |          |      |
| Cobalt     | 0.47            | 0.0060                   | 0.5000    | 0                                             | 93.4 | 75       | 125         |      |          |      |
| Copper     | 0.52            | 0.0060                   | 0.5000    | 0.01697                                       | 101  | 75       | 125         |      |          |      |
| Lead       | 0.47            | 0.0050                   | 0.5000    | 0                                             | 94.1 | 75       | 125         |      |          |      |
| Nickel     | 0.45            | 0.010                    | 0.5000    | 0                                             | 89.9 | 75       | 125         |      |          |      |
| Selenium   | 0.48            | 0.050                    | 0.5000    | 0                                             | 96.6 | 75       | 125         |      |          |      |
| Silver     | 0.10            | 0.0050                   | 0.1000    | 0                                             | 103  | 75       | 125         |      |          |      |
| Vanadium   | 0.53            | 0.050                    | 0.5000    | 0.02710                                       | 101  | 75       | 125         |      |          |      |
| Zinc       | 0.48            | 0.020                    | 0.5000    | 0.01869                                       | 92.5 | 75       | 125         |      |          |      |

|            |                 |           |                |             |      |          |           |        |          |        |           |                                     |  |  |  |  |
|------------|-----------------|-----------|----------------|-------------|------|----------|-----------|--------|----------|--------|-----------|-------------------------------------|--|--|--|--|
| Sample ID  | 1403230-001BMSD | SampType: | MSD            |             |      |          |           |        |          |        | TestCode: | EPA 6010B: Total Recoverable Metals |  |  |  |  |
| Client ID: | East Water Well |           | Batch ID:      | 12125       |      |          | RunNo:    | 17264  |          |        |           |                                     |  |  |  |  |
| Prep Date: | 3/11/2014       |           | Analysis Date: | 3/12/2014   |      |          | SeqNo:    | 497238 |          | Units: | mg/L      |                                     |  |  |  |  |
| Analyte    | Result          | PQL       | SPK value      | SPK Ref Val | %REC | LowLimit | HighLimit | %RPD   | RPDLimit | Qual   |           |                                     |  |  |  |  |
| Antimony   | 0.50            | 0.050     | 0.5000         | 0           | 101  | 75       | 125       | 1.04   | 20       |        |           |                                     |  |  |  |  |
| Arsenic    | 0.51            | 0.020     | 0.5000         | 0           | 101  | 75       | 125       | 2.48   | 20       |        |           |                                     |  |  |  |  |
| Barium     | 0.57            | 0.020     | 0.5000         | 0.09852     | 94.9 | 75       | 125       | 0.931  | 20       |        |           |                                     |  |  |  |  |
| Beryllium  | 0.51            | 0.0030    | 0.5000         | 0           | 102  | 75       | 125       | 0.920  | 20       |        |           |                                     |  |  |  |  |
| Cadmium    | 0.48            | 0.0020    | 0.5000         | 0           | 95.9 | 75       | 125       | 1.79   | 20       |        |           |                                     |  |  |  |  |
| Chromium   | 0.48            | 0.0060    | 0.5000         | 0.01197     | 94.5 | 75       | 125       | 1.49   | 20       |        |           |                                     |  |  |  |  |
| Cobalt     | 0.46            | 0.0060    | 0.5000         | 0           | 91.7 | 75       | 125       | 1.79   | 20       |        |           |                                     |  |  |  |  |
| Copper     | 0.52            | 0.0060    | 0.5000         | 0.01697     | 100  | 75       | 125       | 1.27   | 20       |        |           |                                     |  |  |  |  |
| Lead       | 0.47            | 0.0050    | 0.5000         | 0           | 93.3 | 75       | 125       | 0.788  | 20       |        |           |                                     |  |  |  |  |
| Nickel     | 0.44            | 0.010     | 0.5000         | 0           | 88.4 | 75       | 125       | 1.73   | 20       |        |           |                                     |  |  |  |  |
| Selenium   | 0.47            | 0.050     | 0.5000         | 0           | 94.5 | 75       | 125       | 2.15   | 20       |        |           |                                     |  |  |  |  |
| Silver     | 0.10            | 0.0050    | 0.1000         | 0           | 99.5 | 75       | 125       | 2.98   | 20       |        |           |                                     |  |  |  |  |
| Vanadium   | 0.52            | 0.050     | 0.5000         | 0.02710     | 99.3 | 75       | 125       | 1.98   | 20       |        |           |                                     |  |  |  |  |
| Zinc       | 0.48            | 0.020     | 0.5000         | 0.01869     | 91.5 | 75       | 125       | 1.00   | 20       |        |           |                                     |  |  |  |  |

### Qualifiers:

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ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

## Sample Log-In Check List

Client Name: **NAVAJO REFINING CO**

Work Order Number: **1403230**

RcptNo: **1**

Received by/date:

*mg*

*03/06/14*

Logged By:

**Ashley Gallegos**

**3/6/2014 9:15:00 AM**

*AS*

Completed By:

**Ashley Gallegos**

**3/6/2014 11:07:51 AM**

*AS*

Reviewed By:

*[Signature]*

*03/06/14*

### Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? FedEx

### Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved bottles checked for pH: *2*  
(*<2 or >12 unless noted*)

Adjusted? *mg*

Checked by: *mg*

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via:

☐ eMail

☐ Phone

☐ Fax

☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

### 18. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|---------|-----------|-------------|---------|-----------|-----------|
| 1         | 1.0     | Good      | Yes         |         |           |           |



**Client:** Navajo Refining Co., L.L.C.

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

| Client: Navajo Refining Co., L.L.C.                           |         | X Standard <input type="checkbox"/> Rush                                    |                      |                      |                   |          |
|---------------------------------------------------------------|---------|-----------------------------------------------------------------------------|----------------------|----------------------|-------------------|----------|
| Mailing Address PO Box 159                                    |         | Project Name:                                                               |                      |                      |                   |          |
| Artesia, NM 88211-0159                                        |         | Skinner List                                                                |                      |                      |                   |          |
| Phone #: 575-748-5311                                         |         | Project #:                                                                  |                      |                      |                   |          |
| email or Fax#: 575-746-5451                                   |         | Project Manager:                                                            |                      |                      |                   |          |
| QA/QC Package:                                                |         | Robert Combs                                                                |                      |                      |                   |          |
| X Standard <input type="checkbox"/> Level 4 (Full Validation) |         | Sampler: Andres Sandoval                                                    |                      |                      |                   |          |
| <input type="checkbox"/> Other _____                          |         | On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No |                      |                      |                   |          |
| <input type="checkbox"/> EDD (Type) _____                     |         | Sample Temperature: 1.0                                                     |                      |                      |                   |          |
| Date                                                          | Time    | Matrix                                                                      | Sample Request ID    | Container Type and # | Preservative Type | HEAL No. |
| 3/5                                                           | 7:00 am | liquid                                                                      | East Water Well      | 3-40 mL VOAs         | HCl               | 1403230  |
| 3/5                                                           | 7:00    | liquid                                                                      | East Water Well      | 2-1L amber glass     | neat              | -001     |
| 3/5                                                           | 7:00    | liquid                                                                      | East Water Well      | 500 mL plastic       | HNO3              |          |
| 3/5                                                           | 7:00    | liquid                                                                      | East Water Well      | 500 mL plastic       | NaOH              |          |
|                                                               |         |                                                                             |                      |                      |                   |          |
|                                                               |         | liquid                                                                      | Tk-1210              | 3-40 mL VOAs         | HCl               | -002     |
|                                                               |         | liquid                                                                      | Tk-1210              | 2-1L amber glass     | neat              |          |
|                                                               |         | liquid                                                                      | Tk-1210              | 500 mL plastic       | HNO3              |          |
|                                                               |         | liquid                                                                      | Tk-1210              | 500 mL plastic       | NaOH              |          |
|                                                               |         |                                                                             |                      |                      |                   |          |
|                                                               |         |                                                                             |                      |                      |                   |          |
|                                                               |         |                                                                             |                      |                      |                   |          |
| Date:                                                         | Time:   | Relinquished by:                                                            | Received by:         | Date                 | Time              |          |
| 3/5/14                                                        | 7:00 am | [Signature]                                                                 | Michelle [Signature] | 03/05/14             | 0915              |          |





Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

April 17, 2014

Robert Combs  
Navajo Refining Company  
P.O. Box 159  
Artesia, NM 88211-0159  
TEL: (575) 748-3311  
FAX

RE: Skinner List

OrderNo.: 1403C37

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 3/29/2014 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read 'Andy Freeman', is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1403C37**

Date Reported: 4/17/2014

**CLIENT:** Navajo Refining Company

**Client Sample ID:** East Water Well

**Project:** Skinner List

**Collection Date:** 3/28/2014 8:00:00 AM

**Lab ID:** 1403C37-001

**Matrix:** AQUEOUS

**Received Date:** 3/29/2014 10:20:00 AM

| Analyses                                   | Result | MDL      | RL      | Qual | Units | DF | Date Analyzed        | Batch ID |
|--------------------------------------------|--------|----------|---------|------|-------|----|----------------------|----------|
| <b>EPA METHOD 7470: MERCURY</b>            |        |          |         |      |       |    | Analyst: <b>JML</b>  |          |
| Mercury                                    | ND     | 0.000087 | 0.00020 |      | mg/L  | 1  | 4/1/2014 4:01:24 PM  | 12467    |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |        |          |         |      |       |    | Analyst: <b>ELS</b>  |          |
| Antimony                                   | ND     | 0.015    | 0.050   |      | mg/L  | 1  | 4/2/2014 10:23:03 AM | 12471    |
| Arsenic                                    | ND     | 0.0093   | 0.020   |      | mg/L  | 1  | 4/2/2014 10:23:03 AM | 12471    |
| Barium                                     | 0.097  | 0.00062  | 0.020   |      | mg/L  | 1  | 4/2/2014 10:23:03 AM | 12471    |
| Beryllium                                  | ND     | 0.00035  | 0.0030  |      | mg/L  | 1  | 4/2/2014 10:23:03 AM | 12471    |
| Cadmium                                    | ND     | 0.00063  | 0.0020  |      | mg/L  | 1  | 4/2/2014 10:23:03 AM | 12471    |
| Chromium                                   | 0.013  | 0.0017   | 0.0060  |      | mg/L  | 1  | 4/2/2014 10:23:03 AM | 12471    |
| Cobalt                                     | ND     | 0.0015   | 0.0060  |      | mg/L  | 1  | 4/2/2014 10:23:03 AM | 12471    |
| Lead                                       | ND     | 0.0048   | 0.0050  |      | mg/L  | 1  | 4/2/2014 10:23:03 AM | 12471    |
| Nickel                                     | ND     | 0.0019   | 0.010   |      | mg/L  | 1  | 4/2/2014 10:23:03 AM | 12471    |
| Selenium                                   | ND     | 0.022    | 0.050   |      | mg/L  | 1  | 4/2/2014 10:23:03 AM | 12471    |
| Silver                                     | ND     | 0.00052  | 0.0050  |      | mg/L  | 1  | 4/2/2014 10:23:03 AM | 12471    |
| Vanadium                                   | 0.024  | 0.0055   | 0.050   | J    | mg/L  | 1  | 4/2/2014 10:23:03 AM | 12471    |
| Zinc                                       | 0.017  | 0.0049   | 0.020   | J    | mg/L  | 1  | 4/2/2014 10:23:03 AM | 12471    |
| <b>EPA METHOD 8260B: VOLATILES</b>         |        |          |         |      |       |    | Analyst: <b>KJH</b>  |          |
| Benzene                                    | ND     | 0.46     | 1.0     |      | µg/L  | 1  | 4/2/2014 1:20:55 PM  | R17758   |
| Toluene                                    | ND     | 0.44     | 1.0     |      | µg/L  | 1  | 4/2/2014 1:20:55 PM  | R17758   |
| Ethylbenzene                               | ND     | 0.45     | 1.0     |      | µg/L  | 1  | 4/2/2014 1:20:55 PM  | R17758   |
| Methyl tert-butyl ether (MTBE)             | ND     | 0.77     | 1.0     |      | µg/L  | 1  | 4/2/2014 1:20:55 PM  | R17758   |
| 1,2-Dichloroethane (EDC)                   | ND     | 0.33     | 1.0     |      | µg/L  | 1  | 4/2/2014 1:20:55 PM  | R17758   |
| 1,2-Dibromoethane (EDB)                    | ND     | 0.45     | 1.0     |      | µg/L  | 1  | 4/2/2014 1:20:55 PM  | R17758   |
| 2-Butanone                                 | ND     | 1.4      | 10      |      | µg/L  | 1  | 4/2/2014 1:20:55 PM  | R17758   |
| Carbon disulfide                           | ND     | 0.80     | 10      |      | µg/L  | 1  | 4/2/2014 1:20:55 PM  | R17758   |
| Chlorobenzene                              | ND     | 0.49     | 1.0     |      | µg/L  | 1  | 4/2/2014 1:20:55 PM  | R17758   |
| Chloroform                                 | ND     | 0.47     | 1.0     |      | µg/L  | 1  | 4/2/2014 1:20:55 PM  | R17758   |
| 1,1-Dichloroethane                         | ND     | 0.33     | 1.0     |      | µg/L  | 1  | 4/2/2014 1:20:55 PM  | R17758   |
| Styrene                                    | ND     | 0.58     | 1.0     |      | µg/L  | 1  | 4/2/2014 1:20:55 PM  | R17758   |
| Tetrachloroethene (PCE)                    | ND     | 0.49     | 1.0     |      | µg/L  | 1  | 4/2/2014 1:20:55 PM  | R17758   |
| 1,1,2-Trichloroethane                      | ND     | 0.42     | 1.0     |      | µg/L  | 1  | 4/2/2014 1:20:55 PM  | R17758   |
| Trichloroethene (TCE)                      | ND     | 0.42     | 1.0     |      | µg/L  | 1  | 4/2/2014 1:20:55 PM  | R17758   |
| Xylenes, Total                             | ND     | 1.4      | 1.5     |      | µg/L  | 1  | 4/2/2014 1:20:55 PM  | R17758   |
| 1,4-Dioxane                                | ND     | 10       | 10      |      | µg/L  | 1  | 4/2/2014 1:20:55 PM  | R17758   |
| Surr: 1,2-Dichloroethane-d4                | 90.0   | 0        | 70-130  |      | %REC  | 1  | 4/2/2014 1:20:55 PM  | R17758   |
| Surr: 4-Bromofluorobenzene                 | 96.9   | 0        | 70-130  |      | %REC  | 1  | 4/2/2014 1:20:55 PM  | R17758   |
| Surr: Dibromofluoromethane                 | 98.9   | 0        | 70-130  |      | %REC  | 1  | 4/2/2014 1:20:55 PM  | R17758   |
| Surr: Toluene-d8                           | 91.2   | 0        | 70-130  |      | %REC  | 1  | 4/2/2014 1:20:55 PM  | R17758   |

### EPA 8270D: SEMIVOLATILES

Analyst: **SUB**

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |   |                                                 |    |                                                    |
|--------------------|---|-------------------------------------------------|----|----------------------------------------------------|
| <b>Qualifiers:</b> | * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    |
|                    | E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |
|                    | J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |
|                    | O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |
|                    | R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |
|                    | S | Spike Recovery outside accepted recovery limits |    |                                                    |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1403C37**

Date Reported: 4/17/2014

**CLIENT:** Navajo Refining Company

**Client Sample ID:** East Water Well

**Project:** Skinner List

**Collection Date:** 3/28/2014 8:00:00 AM

**Lab ID:** 1403C37-001

**Matrix:** AQUEOUS

**Received Date:** 3/29/2014 10:20:00 AM

| Analyses                        | Result | MDL  | RL     | Qual | Units | DF | Date Analyzed | Batch ID |
|---------------------------------|--------|------|--------|------|-------|----|---------------|----------|
| <b>EPA 8270D: SEMIVOLATILES</b> |        |      |        |      |       |    | Analyst: SUB  |          |
| Dibenz(a,h)acridine             | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| Benzenethiol                    | ND     | 0.50 | 5.0    |      | µg/L  | 1  | 4/9/2014      | R18057   |
| Indene                          | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| 1,2-Dichlorobenzene             | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| 1,3-Dichlorobenzene             | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| 1,4-Dichlorobenzene             | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| 1-Methylnaphthalene             | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| 2,4-Dimethylphenol              | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| 2,4-Dinitrophenol               | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| 2-Methylphenol                  | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| 3+4-Methylphenol                | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| 4-Nitrophenol                   | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| Acenaphthylene                  | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| Anthracene                      | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| Benz(a)anthracene               | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| Benzo(a)pyrene                  | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| Benzo(b)fluoranthene            | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| Benzo(k)fluoranthene            | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| Bis(2-ethylhexyl)phthalate      | 0.87   | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| Chrysene                        | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| Dibenz(a,h)anthracene           | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| Diethyl phthalate               | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| Dimethyl phthalate              | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| Di-n-butyl phthalate            | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| Fluoranthene                    | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| Fluorene                        | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| Indeno(1,2,3-cd)pyrene          | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| Naphthalene                     | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| Phenanthrene                    | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| Phenol                          | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| Pyrene                          | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| Pyridine                        | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| Quinoline                       | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 4/9/2014      | R18057   |
| Surr: 2,4,6-Tribromophenol      | 83.9   | 0    | 53-122 |      | %REC  | 1  | 4/9/2014      | R18057   |
| Surr: 2-Fluorobiphenyl          | 80.9   | 0    | 12-116 |      | %REC  | 1  | 4/9/2014      | R18057   |
| Surr: 2-Fluorophenol            | 82.7   | 0    | 10-139 |      | %REC  | 1  | 4/9/2014      | R18057   |
| Surr: Nitrobenzene-d5           | 74.9   | 0    | 68-118 |      | %REC  | 1  | 4/9/2014      | R18057   |
| Surr: Phenol-d5                 | 84.3   | 0    | 28-154 |      | %REC  | 1  | 4/9/2014      | R18057   |
| Surr: Terphenyl-d14             | 89.9   | 0    | 52-144 |      | %REC  | 1  | 4/9/2014      | R18057   |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |                                                   |                                                      |
|--------------------|---------------------------------------------------|------------------------------------------------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    |
|                    | E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |
|                    | J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               |
|                    | O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
|                    | R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
|                    | S Spike Recovery outside accepted recovery limits |                                                      |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1403C37**

Date Reported: 4/17/2014

**CLIENT:** Navajo Refining Company

**Client Sample ID:** East Water Well

**Project:** Skinner List

**Collection Date:** 3/28/2014 8:00:00 AM

**Lab ID:** 1403C37-001

**Matrix:** AQUEOUS

**Received Date:** 3/29/2014 10:20:00 AM

| Analyses                               | Result | MDL     | RL     | Qual | Units | DF | Date Analyzed       | Batch ID |
|----------------------------------------|--------|---------|--------|------|-------|----|---------------------|----------|
| <b>EPA 335.4: TOTAL CYANIDE SUBBED</b> |        |         |        |      |       |    | Analyst: <b>SUB</b> |          |
| Cyanide                                | ND     | 0.00500 | 0.0100 |      | mg/L  | 1  | 4/8/2014            | R18057   |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |   |                                                 |    |                                                    |
|--------------------|---|-------------------------------------------------|----|----------------------------------------------------|
| <b>Qualifiers:</b> | * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    |
|                    | E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |
|                    | J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |
|                    | O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |
|                    | R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |
|                    | S | Spike Recovery outside accepted recovery limits |    |                                                    |

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1403C37**

Date Reported: 4/17/2014

**CLIENT:** Navajo Refining Company

**Client Sample ID:** TRIP BLANK

**Project:** Skinner List

**Collection Date:**

**Lab ID:** 1403C37-002

**Matrix:** TRIP BLANK

**Received Date:** 3/29/2014 10:20:00 AM

| Analyses                           | Result | MDL  | RL     | Qual | Units | DF | Date Analyzed       | Batch ID |
|------------------------------------|--------|------|--------|------|-------|----|---------------------|----------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |      |        |      |       |    | Analyst: <b>KJH</b> |          |
| Benzene                            | ND     | 0.46 | 1.0    |      | µg/L  | 1  | 4/2/2014 2:44:55 PM | R17758   |
| Toluene                            | ND     | 0.44 | 1.0    |      | µg/L  | 1  | 4/2/2014 2:44:55 PM | R17758   |
| Ethylbenzene                       | ND     | 0.45 | 1.0    |      | µg/L  | 1  | 4/2/2014 2:44:55 PM | R17758   |
| Methyl tert-butyl ether (MTBE)     | ND     | 0.77 | 1.0    |      | µg/L  | 1  | 4/2/2014 2:44:55 PM | R17758   |
| 1,2-Dichloroethane (EDC)           | ND     | 0.33 | 1.0    |      | µg/L  | 1  | 4/2/2014 2:44:55 PM | R17758   |
| 1,2-Dibromoethane (EDB)            | ND     | 0.45 | 1.0    |      | µg/L  | 1  | 4/2/2014 2:44:55 PM | R17758   |
| 2-Butanone                         | ND     | 1.4  | 10     |      | µg/L  | 1  | 4/2/2014 2:44:55 PM | R17758   |
| Carbon disulfide                   | ND     | 0.80 | 10     |      | µg/L  | 1  | 4/2/2014 2:44:55 PM | R17758   |
| Chlorobenzene                      | ND     | 0.49 | 1.0    |      | µg/L  | 1  | 4/2/2014 2:44:55 PM | R17758   |
| Chloroform                         | ND     | 0.47 | 1.0    |      | µg/L  | 1  | 4/2/2014 2:44:55 PM | R17758   |
| 1,1-Dichloroethane                 | ND     | 0.33 | 1.0    |      | µg/L  | 1  | 4/2/2014 2:44:55 PM | R17758   |
| Styrene                            | ND     | 0.58 | 1.0    |      | µg/L  | 1  | 4/2/2014 2:44:55 PM | R17758   |
| Tetrachloroethene (PCE)            | ND     | 0.49 | 1.0    |      | µg/L  | 1  | 4/2/2014 2:44:55 PM | R17758   |
| 1,1,1-Trichloroethane              | ND     | 0.40 | 1.0    |      | µg/L  | 1  | 4/2/2014 2:44:55 PM | R17758   |
| Trichloroethene (TCE)              | ND     | 0.42 | 1.0    |      | µg/L  | 1  | 4/2/2014 2:44:55 PM | R17758   |
| Xylenes, Total                     | ND     | 1.4  | 1.5    |      | µg/L  | 1  | 4/2/2014 2:44:55 PM | R17758   |
| 1,4-Dioxane                        | ND     | 10   | 10     |      | µg/L  | 1  | 4/2/2014 2:44:55 PM | R17758   |
| Surr: 1,2-Dichloroethane-d4        | 92.3   | 0    | 70-130 |      | %REC  | 1  | 4/2/2014 2:44:55 PM | R17758   |
| Surr: 4-Bromofluorobenzene         | 94.7   | 0    | 70-130 |      | %REC  | 1  | 4/2/2014 2:44:55 PM | R17758   |
| Surr: Dibromofluoromethane         | 99.4   | 0    | 70-130 |      | %REC  | 1  | 4/2/2014 2:44:55 PM | R17758   |
| Surr: Toluene-d8                   | 93.2   | 0    | 70-130 |      | %REC  | 1  | 4/2/2014 2:44:55 PM | R17758   |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |                                                   |                                                      |
|--------------------|---------------------------------------------------|------------------------------------------------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    |
|                    | E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |
|                    | J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               |
|                    | O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
|                    | R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
|                    | S Spike Recovery outside accepted recovery limits |                                                      |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1403C37

18-Apr-14

Client: Navajo Refining Company

Project: Skinner List

|                                |        |                         |           |             |                                       |          |             |      |          |      |
|--------------------------------|--------|-------------------------|-----------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID                      | 5mL-rb | SampType: MBLK          |           |             | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID:                     | PBW    | Batch ID: R17758        |           |             | RunNo: 17758                          |          |             |      |          |      |
| Prep Date:                     |        | Analysis Date: 4/2/2014 |           |             | SeqNo: 511515                         |          | Units: µg/L |      |          |      |
| Analyte                        | Result | PQL                     | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                        | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Toluene                        | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Ethylbenzene                   | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Methyl tert-butyl ether (MTBE) | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,2,4-Trimethylbenzene         | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,3,5-Trimethylbenzene         | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,2-Dichloroethane (EDC)       | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,2-Dibromoethane (EDB)        | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Naphthalene                    | ND     | 2.0                     |           |             |                                       |          |             |      |          |      |
| 1-Methylnaphthalene            | ND     | 4.0                     |           |             |                                       |          |             |      |          |      |
| 2-Methylnaphthalene            | ND     | 4.0                     |           |             |                                       |          |             |      |          |      |
| Acetone                        | ND     | 10                      |           |             |                                       |          |             |      |          |      |
| Bromobenzene                   | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Bromodichloromethane           | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Bromoform                      | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Bromomethane                   | ND     | 3.0                     |           |             |                                       |          |             |      |          |      |
| 2-Butanone                     | ND     | 10                      |           |             |                                       |          |             |      |          |      |
| Carbon disulfide               | ND     | 10                      |           |             |                                       |          |             |      |          |      |
| Carbon Tetrachloride           | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Chlorobenzene                  | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Chloroethane                   | ND     | 2.0                     |           |             |                                       |          |             |      |          |      |
| Chloroform                     | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Chloromethane                  | ND     | 3.0                     |           |             |                                       |          |             |      |          |      |
| 2-Chlorotoluene                | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 4-Chlorotoluene                | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| cis-1,2-DCE                    | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| cis-1,3-Dichloropropene        | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,2-Dibromo-3-chloropropane    | ND     | 2.0                     |           |             |                                       |          |             |      |          |      |
| Dibromochloromethane           | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Dibromomethane                 | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,2-Dichlorobenzene            | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,3-Dichlorobenzene            | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,4-Dichlorobenzene            | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Dichlorodifluoromethane        | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,1-Dichloroethane             | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,1-Dichloroethene             | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,2-Dichloropropane            | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,3-Dichloropropane            | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 2,2-Dichloropropane            | ND     | 2.0                     |           |             |                                       |          |             |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1403C37

18-Apr-14

Client: Navajo Refining Company

Project: Skinner List

|                             |        |                         |           |             |                                       |          |             |      |          |      |
|-----------------------------|--------|-------------------------|-----------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 5mL-rb | SampType: MBLK          |           |             | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID:                  | PBW    | Batch ID: R17758        |           |             | RunNo: 17758                          |          |             |      |          |      |
| Prep Date:                  |        | Analysis Date: 4/2/2014 |           |             | SeqNo: 511515                         |          | Units: µg/L |      |          |      |
| Analyte                     | Result | PQL                     | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| 1,1-Dichloropropene         | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Hexachlorobutadiene         | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 2-Hexanone                  | ND     | 10                      |           |             |                                       |          |             |      |          |      |
| Isopropylbenzene            | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 4-Isopropyltoluene          | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 4-Methyl-2-pentanone        | ND     | 10                      |           |             |                                       |          |             |      |          |      |
| Methylene Chloride          | ND     | 3.0                     |           |             |                                       |          |             |      |          |      |
| n-Butylbenzene              | ND     | 3.0                     |           |             |                                       |          |             |      |          |      |
| n-Propylbenzene             | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| sec-Butylbenzene            | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Styrene                     | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| tert-Butylbenzene           | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,1,1,2-Tetrachloroethane   | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,1,2,2-Tetrachloroethane   | ND     | 2.0                     |           |             |                                       |          |             |      |          |      |
| Tetrachloroethene (PCE)     | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| trans-1,2-DCE               | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| trans-1,3-Dichloropropene   | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,2,3-Trichlorobenzene      | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,2,4-Trichlorobenzene      | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,1,1-Trichloroethane       | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,1,2-Trichloroethane       | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Trichloroethene (TCE)       | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Trichlorofluoromethane      | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| 1,2,3-Trichloropropane      | ND     | 2.0                     |           |             |                                       |          |             |      |          |      |
| Vinyl chloride              | ND     | 1.0                     |           |             |                                       |          |             |      |          |      |
| Xylenes, Total              | ND     | 1.5                     |           |             |                                       |          |             |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 9.1    |                         | 10.00     |             | 90.8                                  | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 9.6    |                         | 10.00     |             | 96.3                                  | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 9.9    |                         | 10.00     |             | 99.1                                  | 70       | 130         |      |          |      |
| Surr: Toluene-d8            | 9.3    |                         | 10.00     |             | 93.2                                  | 70       | 130         |      |          |      |

|               |           |                         |           |             |                                       |          |             |      |          |      |
|---------------|-----------|-------------------------|-----------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID     | 100ng lcs | SampType: LCS           |           |             | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID:    | LCSW      | Batch ID: R17758        |           |             | RunNo: 17758                          |          |             |      |          |      |
| Prep Date:    |           | Analysis Date: 4/2/2014 |           |             | SeqNo: 511517                         |          | Units: µg/L |      |          |      |
| Analyte       | Result    | PQL                     | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene       | 22        | 1.0                     | 20.00     | 0           | 111                                   | 70       | 130         |      |          |      |
| Toluene       | 21        | 1.0                     | 20.00     | 0           | 105                                   | 80       | 120         |      |          |      |
| Chlorobenzene | 21        | 1.0                     | 20.00     | 0           | 104                                   | 70       | 130         |      |          |      |

### Qualifiers:

|   |                                                 |    |                                                    |
|---|-------------------------------------------------|----|----------------------------------------------------|
| * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    |
| E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |
| J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |
| O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |
| R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |
| S | Spike Recovery outside accepted recovery limits |    |                                                    |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1403C37

18-Apr-14

**Client:** Navajo Refining Company

**Project:** Skinner List

| Sample ID <b>100ng lcs</b>  | SampType: <b>LCS</b>           |     |           | TestCode: <b>EPA Method 8260B: VOLATILES</b> |      |                    |           |      |          |      |
|-----------------------------|--------------------------------|-----|-----------|----------------------------------------------|------|--------------------|-----------|------|----------|------|
| Client ID: <b>LCSW</b>      | Batch ID: <b>R17758</b>        |     |           | RunNo: <b>17758</b>                          |      |                    |           |      |          |      |
| Prep Date:                  | Analysis Date: <b>4/2/2014</b> |     |           | SeqNo: <b>511517</b>                         |      | Units: <b>µg/L</b> |           |      |          |      |
| Analyte                     | Result                         | PQL | SPK value | SPK Ref Val                                  | %REC | LowLimit           | HighLimit | %RPD | RPDLimit | Qual |
| 1,1-Dichloroethene          | 25                             | 1.0 | 20.00     | 0                                            | 123  | 90                 | 143       |      |          |      |
| Trichloroethene (TCE)       | 21                             | 1.0 | 20.00     | 0                                            | 104  | 70                 | 130       |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 9.2                            |     | 10.00     |                                              | 92.5 | 70                 | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 10                             |     | 10.00     |                                              | 99.6 | 70                 | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 9.9                            |     | 10.00     |                                              | 98.9 | 70                 | 130       |      |          |      |
| Surr: Toluene-d8            | 9.6                            |     | 10.00     |                                              | 96.1 | 70                 | 130       |      |          |      |

| Sample ID <b>1403C37-001a ms</b>  | SampType: <b>MS</b>            |     |           | TestCode: <b>EPA Method 8260B: VOLATILES</b> |      |                    |           |      |          |      |
|-----------------------------------|--------------------------------|-----|-----------|----------------------------------------------|------|--------------------|-----------|------|----------|------|
| Client ID: <b>East Water Well</b> | Batch ID: <b>R17758</b>        |     |           | RunNo: <b>17758</b>                          |      |                    |           |      |          |      |
| Prep Date:                        | Analysis Date: <b>4/2/2014</b> |     |           | SeqNo: <b>511523</b>                         |      | Units: <b>µg/L</b> |           |      |          |      |
| Analyte                           | Result                         | PQL | SPK value | SPK Ref Val                                  | %REC | LowLimit           | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                           | 23                             | 1.0 | 20.00     | 0                                            | 115  | 70                 | 130       |      |          |      |
| Toluene                           | 20                             | 1.0 | 20.00     | 0                                            | 102  | 67.5               | 123       |      |          |      |
| Chlorobenzene                     | 20                             | 1.0 | 20.00     | 0                                            | 102  | 70                 | 130       |      |          |      |
| 1,1-Dichloroethene                | 25                             | 1.0 | 20.00     | 0                                            | 125  | 81.9               | 134       |      |          |      |
| Trichloroethene (TCE)             | 21                             | 1.0 | 20.00     | 0                                            | 107  | 70                 | 130       |      |          |      |
| Surr: 1,2-Dichloroethane-d4       | 9.5                            |     | 10.00     |                                              | 95.3 | 70                 | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene        | 9.4                            |     | 10.00     |                                              | 93.7 | 70                 | 130       |      |          |      |
| Surr: Dibromofluoromethane        | 10                             |     | 10.00     |                                              | 102  | 70                 | 130       |      |          |      |
| Surr: Toluene-d8                  | 9.3                            |     | 10.00     |                                              | 92.6 | 70                 | 130       |      |          |      |

| Sample ID <b>1403C37-001a msd</b> | SampType: <b>MSD</b>           |     |           | TestCode: <b>EPA Method 8260B: VOLATILES</b> |      |                    |           |      |          |      |
|-----------------------------------|--------------------------------|-----|-----------|----------------------------------------------|------|--------------------|-----------|------|----------|------|
| Client ID: <b>East Water Well</b> | Batch ID: <b>R17758</b>        |     |           | RunNo: <b>17758</b>                          |      |                    |           |      |          |      |
| Prep Date:                        | Analysis Date: <b>4/2/2014</b> |     |           | SeqNo: <b>511524</b>                         |      | Units: <b>µg/L</b> |           |      |          |      |
| Analyte                           | Result                         | PQL | SPK value | SPK Ref Val                                  | %REC | LowLimit           | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                           | 22                             | 1.0 | 20.00     | 0                                            | 112  | 70                 | 130       | 2.08 | 20       |      |
| Toluene                           | 21                             | 1.0 | 20.00     | 0                                            | 104  | 67.5               | 123       | 1.62 | 20       |      |
| Chlorobenzene                     | 21                             | 1.0 | 20.00     | 0                                            | 105  | 70                 | 130       | 3.17 | 20       |      |
| 1,1-Dichloroethene                | 24                             | 1.0 | 20.00     | 0                                            | 121  | 81.9               | 134       | 3.64 | 20       |      |
| Trichloroethene (TCE)             | 21                             | 1.0 | 20.00     | 0                                            | 103  | 70                 | 130       | 3.99 | 20       |      |
| Surr: 1,2-Dichloroethane-d4       | 9.7                            |     | 10.00     |                                              | 97.4 | 70                 | 130       | 0    | 0        |      |
| Surr: 4-Bromofluorobenzene        | 9.4                            |     | 10.00     |                                              | 94.4 | 70                 | 130       | 0    | 0        |      |
| Surr: Dibromofluoromethane        | 11                             |     | 10.00     |                                              | 105  | 70                 | 130       | 0    | 0        |      |
| Surr: Toluene-d8                  | 9.5                            |     | 10.00     |                                              | 94.6 | 70                 | 130       | 0    | 0        |      |

### Qualifiers:

- |                                                   |                                                      |
|---------------------------------------------------|------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    |
| E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               |
| O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
| R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
| S Spike Recovery outside accepted recovery limits |                                                      |



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1403C37

18-Apr-14

Client: Navajo Refining Company

Project: Skinner List

|                            |                  |      |                                |             |                                           |          |                    |      |          |      |
|----------------------------|------------------|------|--------------------------------|-------------|-------------------------------------------|----------|--------------------|------|----------|------|
| Sample ID                  | <b>MB-R18057</b> |      | SampType: <b>MBLK</b>          |             | TestCode: <b>EPA 8270D: Semivolatiles</b> |          |                    |      |          |      |
| Client ID:                 | <b>PBW</b>       |      | Batch ID: <b>R18057</b>        |             | RunNo: <b>18057</b>                       |          |                    |      |          |      |
| Prep Date:                 |                  |      | Analysis Date: <b>4/9/2014</b> |             | SeqNo: <b>520992</b>                      |          | Units: <b>µg/L</b> |      |          |      |
| Analyte                    | Result           | PQL  | SPK value                      | SPK Ref Val | %REC                                      | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| 1,2-Dichlorobenzene        | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| 1,3-Dichlorobenzene        | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| 1,4-Dichlorobenzene        | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| 1-Methylnaphthalene        | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| 2,4-Dimethylphenol         | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| 2,4-Dinitrophenol          | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| 2-Methylphenol             | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| 3+4-Methylphenol           | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| 4-Nitrophenol              | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Acenaphthylene             | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Anthracene                 | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Benz(a)anthracene          | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Benzo(a)pyrene             | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Benzo(b)fluoranthene       | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Benzo(k)fluoranthene       | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Bis(2-ethylhexyl)phthalate | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Chrysene                   | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Dibenz(a,h)anthracene      | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Diethyl phthalate          | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Dimethyl phthalate         | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Di-n-butyl phthalate       | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Fluoranthene               | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Fluorene                   | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Indeno(1,2,3-cd)pyrene     | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Naphthalene                | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Phenanthrene               | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Phenol                     | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Pyrene                     | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Pyridine                   | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |

|                            |                   |      |                                |             |                                           |          |                    |      |          |      |
|----------------------------|-------------------|------|--------------------------------|-------------|-------------------------------------------|----------|--------------------|------|----------|------|
| Sample ID                  | <b>LCS-R18057</b> |      | SampType: <b>LCS</b>           |             | TestCode: <b>EPA 8270D: Semivolatiles</b> |          |                    |      |          |      |
| Client ID:                 | <b>LCSW</b>       |      | Batch ID: <b>R18057</b>        |             | RunNo: <b>18057</b>                       |          |                    |      |          |      |
| Prep Date:                 |                   |      | Analysis Date: <b>4/9/2014</b> |             | SeqNo: <b>520993</b>                      |          | Units: <b>µg/L</b> |      |          |      |
| Analyte                    | Result            | PQL  | SPK value                      | SPK Ref Val | %REC                                      | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| 1,4-Dichlorobenzene        | 4.2               | 0.50 | 5.000                          | 0           | 85.0                                      | 28       | 108                |      |          |      |
| 4-Nitrophenol              | 4.2               | 0.50 | 5.000                          | 0           | 85.0                                      | 19       | 137                |      |          |      |
| Bis(2-ethylhexyl)phthalate | 4.9               | 0.50 | 5.000                          | 0           | 97.4                                      | 43       | 142                |      |          |      |
| Phenol                     | 5.2               | 0.50 | 5.000                          | 0           | 104                                       | 45       | 134                |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1403C37

18-Apr-14

Client: Navajo Refining Company

Project: Skinner List

|            |            |      |                         |             |                                    |          |             |      |          |      |
|------------|------------|------|-------------------------|-------------|------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LCS-R18057 |      | SampType: LCS           |             | TestCode: EPA 8270D: Semivolatiles |          |             |      |          |      |
| Client ID: | LCSW       |      | Batch ID: R18057        |             | RunNo: 18057                       |          |             |      |          |      |
| Prep Date: |            |      | Analysis Date: 4/9/2014 |             | SeqNo: 520993                      |          | Units: µg/L |      |          |      |
| Analyte    | Result     | PQL  | SPK value               | SPK Ref Val | %REC                               | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Pyrene     | 5.4        | 0.50 | 5.000                   | 0           | 107                                | 45       | 139         |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1403C37

18-Apr-14

Client: Navajo Refining Company

Project: Skinner List

|            |                  |        |                                |             |                                                  |          |                    |      |          |      |
|------------|------------------|--------|--------------------------------|-------------|--------------------------------------------------|----------|--------------------|------|----------|------|
| Sample ID  | <b>MB-R18057</b> |        | SampType: <b>MBLK</b>          |             | TestCode: <b>EPA 335.4: Total Cyanide Subbed</b> |          |                    |      |          |      |
| Client ID: | <b>PBW</b>       |        | Batch ID: <b>R18057</b>        |             | RunNo: <b>18057</b>                              |          |                    |      |          |      |
| Prep Date: |                  |        | Analysis Date: <b>4/8/2014</b> |             | SeqNo: <b>520999</b>                             |          | Units: <b>mg/L</b> |      |          |      |
| Analyte    | Result           | PQL    | SPK value                      | SPK Ref Val | %REC                                             | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| Cyanide    | ND               | 0.0100 |                                |             |                                                  |          |                    |      |          |      |

|            |                   |        |                                |             |                                                  |          |                    |      |          |      |
|------------|-------------------|--------|--------------------------------|-------------|--------------------------------------------------|----------|--------------------|------|----------|------|
| Sample ID  | <b>LCS-R18057</b> |        | SampType: <b>LCS</b>           |             | TestCode: <b>EPA 335.4: Total Cyanide Subbed</b> |          |                    |      |          |      |
| Client ID: | <b>LCSW</b>       |        | Batch ID: <b>R18057</b>        |             | RunNo: <b>18057</b>                              |          |                    |      |          |      |
| Prep Date: |                   |        | Analysis Date: <b>4/8/2014</b> |             | SeqNo: <b>521000</b>                             |          | Units: <b>mg/L</b> |      |          |      |
| Analyte    | Result            | PQL    | SPK value                      | SPK Ref Val | %REC                                             | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| Cyanide    | 0.473             | 0.0100 | 0.5000                         | 0           | 94.6                                             | 80       | 120                |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1403C37

18-Apr-14

Client: Navajo Refining Company

Project: Skinner List

|            |          |         |                         |             |                                    |          |             |      |          |      |
|------------|----------|---------|-------------------------|-------------|------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | MB-12467 |         | SampType: MBLK          |             | TestCode: EPA Method 7470: Mercury |          |             |      |          |      |
| Client ID: | PBW      |         | Batch ID: 12467         |             | RunNo: 17715                       |          |             |      |          |      |
| Prep Date: | 4/1/2014 |         | Analysis Date: 4/1/2014 |             | SeqNo: 510289                      |          | Units: mg/L |      |          |      |
| Analyte    | Result   | PQL     | SPK value               | SPK Ref Val | %REC                               | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Mercurv    | ND       | 0.00020 |                         |             |                                    |          |             |      |          |      |

|            |           |         |                         |             |                                    |          |             |      |          |      |
|------------|-----------|---------|-------------------------|-------------|------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LCS-12467 |         | SampType: LCS           |             | TestCode: EPA Method 7470: Mercury |          |             |      |          |      |
| Client ID: | LCSW      |         | Batch ID: 12467         |             | RunNo: 17715                       |          |             |      |          |      |
| Prep Date: | 4/1/2014  |         | Analysis Date: 4/1/2014 |             | SeqNo: 510290                      |          | Units: mg/L |      |          |      |
| Analyte    | Result    | PQL     | SPK value               | SPK Ref Val | %REC                               | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Mercury    | 0.0049    | 0.00020 | 0.005000                | 0           | 99.0                               | 80       | 120         |      |          |      |

|            |                 |         |                         |             |                                    |          |             |      |          |      |
|------------|-----------------|---------|-------------------------|-------------|------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | 1403C37-001BMS  |         | SampType: MS            |             | TestCode: EPA Method 7470: Mercury |          |             |      |          |      |
| Client ID: | East Water Well |         | Batch ID: 12467         |             | RunNo: 17715                       |          |             |      |          |      |
| Prep Date: | 4/1/2014        |         | Analysis Date: 4/1/2014 |             | SeqNo: 510296                      |          | Units: mg/L |      |          |      |
| Analyte    | Result          | PQL     | SPK value               | SPK Ref Val | %REC                               | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Mercury    | 0.0044          | 0.00020 | 0.005000                | 0           | 87.6                               | 75       | 125         |      |          |      |

|            |                 |         |                         |             |                                    |          |             |       |          |      |
|------------|-----------------|---------|-------------------------|-------------|------------------------------------|----------|-------------|-------|----------|------|
| Sample ID  | 1403C37-001BMSD |         | SampType: MSD           |             | TestCode: EPA Method 7470: Mercury |          |             |       |          |      |
| Client ID: | East Water Well |         | Batch ID: 12467         |             | RunNo: 17715                       |          |             |       |          |      |
| Prep Date: | 4/1/2014        |         | Analysis Date: 4/1/2014 |             | SeqNo: 510297                      |          | Units: mg/L |       |          |      |
| Analyte    | Result          | PQL     | SPK value               | SPK Ref Val | %REC                               | LowLimit | HighLimit   | %RPD  | RPDLimit | Qual |
| Mercury    | 0.0044          | 0.00020 | 0.005000                | 0           | 88.2                               | 75       | 125         | 0.700 | 20       |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1403C37

18-Apr-14

Client: Navajo Refining Company

Project: Skinner List

|            |          |                |           |             |                                     |          |           |      |          |      |
|------------|----------|----------------|-----------|-------------|-------------------------------------|----------|-----------|------|----------|------|
| Sample ID  | MB-12471 | SampType:      | MBLK      | TestCode:   | EPA 6010B: Total Recoverable Metals |          |           |      |          |      |
| Client ID: | PBW      | Batch ID:      | 12471     | RunNo:      | 17732                               |          |           |      |          |      |
| Prep Date: | 4/1/2014 | Analysis Date: | 4/2/2014  | SeqNo:      | 510912                              | Units:   | mg/L      |      |          |      |
| Analyte    | Result   | PQL            | SPK value | SPK Ref Val | %REC                                | LowLimit | HighLimit | %RPD | RPDLimit | Qual |

|           |    |        |  |  |  |  |  |  |  |  |
|-----------|----|--------|--|--|--|--|--|--|--|--|
| Antimony  | ND | 0.050  |  |  |  |  |  |  |  |  |
| Arsenic   | ND | 0.020  |  |  |  |  |  |  |  |  |
| Barium    | ND | 0.020  |  |  |  |  |  |  |  |  |
| Beryllium | ND | 0.0030 |  |  |  |  |  |  |  |  |
| Cadmium   | ND | 0.0020 |  |  |  |  |  |  |  |  |
| Chromium  | ND | 0.0060 |  |  |  |  |  |  |  |  |
| Cobalt    | ND | 0.0060 |  |  |  |  |  |  |  |  |
| Copper    | ND | 0.0060 |  |  |  |  |  |  |  |  |
| Lead      | ND | 0.0050 |  |  |  |  |  |  |  |  |
| Nickel    | ND | 0.010  |  |  |  |  |  |  |  |  |
| Selenium  | ND | 0.050  |  |  |  |  |  |  |  |  |
| Silver    | ND | 0.0050 |  |  |  |  |  |  |  |  |
| Vanadium  | ND | 0.050  |  |  |  |  |  |  |  |  |
| Zinc      | ND | 0.020  |  |  |  |  |  |  |  |  |

|            |           |                |           |             |                                     |          |           |      |          |      |
|------------|-----------|----------------|-----------|-------------|-------------------------------------|----------|-----------|------|----------|------|
| Sample ID  | LCS-12471 | SampType:      | LCS       | TestCode:   | EPA 6010B: Total Recoverable Metals |          |           |      |          |      |
| Client ID: | LCSW      | Batch ID:      | 12471     | RunNo:      | 17732                               |          |           |      |          |      |
| Prep Date: | 4/1/2014  | Analysis Date: | 4/2/2014  | SeqNo:      | 510914                              | Units:   | mg/L      |      |          |      |
| Analyte    | Result    | PQL            | SPK value | SPK Ref Val | %REC                                | LowLimit | HighLimit | %RPD | RPDLimit | Qual |

|           |      |        |        |   |      |    |     |  |  |  |
|-----------|------|--------|--------|---|------|----|-----|--|--|--|
| Antimony  | 0.51 | 0.050  | 0.5000 | 0 | 101  | 80 | 120 |  |  |  |
| Arsenic   | 0.50 | 0.020  | 0.5000 | 0 | 99.7 | 80 | 120 |  |  |  |
| Barium    | 0.48 | 0.020  | 0.5000 | 0 | 95.0 | 80 | 120 |  |  |  |
| Beryllium | 0.50 | 0.0030 | 0.5000 | 0 | 101  | 80 | 120 |  |  |  |
| Cadmium   | 0.48 | 0.0020 | 0.5000 | 0 | 96.5 | 80 | 120 |  |  |  |
| Chromium  | 0.48 | 0.0060 | 0.5000 | 0 | 95.0 | 80 | 120 |  |  |  |
| Cobalt    | 0.46 | 0.0060 | 0.5000 | 0 | 92.8 | 80 | 120 |  |  |  |
| Copper    | 0.51 | 0.0060 | 0.5000 | 0 | 101  | 80 | 120 |  |  |  |
| Lead      | 0.46 | 0.0050 | 0.5000 | 0 | 92.8 | 80 | 120 |  |  |  |
| Nickel    | 0.45 | 0.010  | 0.5000 | 0 | 89.9 | 80 | 120 |  |  |  |
| Selenium  | 0.48 | 0.050  | 0.5000 | 0 | 96.5 | 80 | 120 |  |  |  |
| Silver    | 0.10 | 0.0050 | 0.1000 | 0 | 101  | 80 | 120 |  |  |  |
| Vanadium  | 0.50 | 0.050  | 0.5000 | 0 | 99.5 | 80 | 120 |  |  |  |
| Zinc      | 0.45 | 0.020  | 0.5000 | 0 | 90.8 | 80 | 120 |  |  |  |

|            |                 |                |           |             |                                     |          |           |      |          |      |
|------------|-----------------|----------------|-----------|-------------|-------------------------------------|----------|-----------|------|----------|------|
| Sample ID  | 1403C37-001BMS  | SampType:      | MS        | TestCode:   | EPA 6010B: Total Recoverable Metals |          |           |      |          |      |
| Client ID: | East Water Well | Batch ID:      | 12471     | RunNo:      | 17732                               |          |           |      |          |      |
| Prep Date: | 4/1/2014        | Analysis Date: | 4/2/2014  | SeqNo:      | 510932                              | Units:   | mg/L      |      |          |      |
| Analyte    | Result          | PQL            | SPK value | SPK Ref Val | %REC                                | LowLimit | HighLimit | %RPD | RPDLimit | Qual |

### Qualifiers:

- |                                                   |                                                      |
|---------------------------------------------------|------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    |
| E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               |
| O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
| R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
| S Spike Recovery outside accepted recovery limits |                                                      |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1403C37

18-Apr-14

**Client:** Navajo Refining Company

**Project:** Skinner List

|            |                 |                         |           |             |                                               |          |             |      |          |      |
|------------|-----------------|-------------------------|-----------|-------------|-----------------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | 1403C37-001BMS  | SampType: MS            |           |             | TestCode: EPA 6010B: Total Recoverable Metals |          |             |      |          |      |
| Client ID: | East Water Well | Batch ID: 12471         |           |             | RunNo: 17732                                  |          |             |      |          |      |
| Prep Date: | 4/1/2014        | Analysis Date: 4/2/2014 |           |             | SeqNo: 510932                                 |          | Units: mg/L |      |          |      |
| Analyte    | Result          | PQL                     | SPK value | SPK Ref Val | %REC                                          | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Antimony   | 0.52            | 0.050                   | 0.5000    | 0           | 105                                           | 75       | 125         |      |          |      |
| Arsenic    | 0.51            | 0.020                   | 0.5000    | 0           | 102                                           | 75       | 125         |      |          |      |
| Barium     | 0.59            | 0.020                   | 0.5000    | 0.09693     | 98.3                                          | 75       | 125         |      |          |      |
| Beryllium  | 0.52            | 0.0030                  | 0.5000    | 0           | 104                                           | 75       | 125         |      |          |      |
| Cadmium    | 0.49            | 0.0020                  | 0.5000    | 0           | 98.3                                          | 75       | 125         |      |          |      |
| Chromium   | 0.50            | 0.0060                  | 0.5000    | 0.01284     | 97.1                                          | 75       | 125         |      |          |      |
| Cobalt     | 0.47            | 0.0060                  | 0.5000    | 0           | 94.7                                          | 75       | 125         |      |          |      |
| Copper     | 0.52            | 0.0060                  | 0.5000    | 0           | 105                                           | 75       | 125         |      |          |      |
| Lead       | 0.47            | 0.0050                  | 0.5000    | 0           | 94.8                                          | 75       | 125         |      |          |      |
| Nickel     | 0.45            | 0.010                   | 0.5000    | 0           | 91.0                                          | 75       | 125         |      |          |      |
| Selenium   | 0.50            | 0.050                   | 0.5000    | 0           | 99.4                                          | 75       | 125         |      |          |      |
| Silver     | 0.10            | 0.0050                  | 0.1000    | 0           | 101                                           | 75       | 125         |      |          |      |
| Vanadium   | 0.53            | 0.050                   | 0.5000    | 0.02444     | 102                                           | 75       | 125         |      |          |      |
| Zinc       | 0.48            | 0.020                   | 0.5000    | 0.01691     | 93.6                                          | 75       | 125         |      |          |      |

|            |                 |                |           |             |           |                                     |           |        |          |      |
|------------|-----------------|----------------|-----------|-------------|-----------|-------------------------------------|-----------|--------|----------|------|
| Sample ID  | 1403C37-001BMSD | SampType:      | MSD       |             | TestCode: | EPA 6010B: Total Recoverable Metals |           |        |          |      |
| Client ID: | East Water Well | Batch ID:      | 12471     |             | RunNo:    | 17732                               |           |        |          |      |
| Prep Date: | 4/1/2014        | Analysis Date: | 4/2/2014  |             | SeqNo:    | 510933                              |           | Units: | mg/L     |      |
| Analyte    | Result          | PQL            | SPK value | SPK Ref Val | %REC      | LowLimit                            | HighLimit | %RPD   | RPDLimit | Qual |
| Antimony   | 0.51            | 0.050          | 0.5000    | 0           | 102       | 75                                  | 125       | 2.42   | 20       |      |
| Arsenic    | 0.51            | 0.020          | 0.5000    | 0           | 103       | 75                                  | 125       | 1.14   | 20       |      |
| Barium     | 0.58            | 0.020          | 0.5000    | 0.09693     | 96.3      | 75                                  | 125       | 1.76   | 20       |      |
| Beryllium  | 0.52            | 0.0030         | 0.5000    | 0           | 103       | 75                                  | 125       | 0.558  | 20       |      |
| Cadmium    | 0.49            | 0.0020         | 0.5000    | 0           | 97.2      | 75                                  | 125       | 1.14   | 20       |      |
| Chromium   | 0.49            | 0.0060         | 0.5000    | 0.01284     | 96.1      | 75                                  | 125       | 1.04   | 20       |      |
| Cobalt     | 0.47            | 0.0060         | 0.5000    | 0           | 93.1      | 75                                  | 125       | 1.72   | 20       |      |
| Copper     | 0.52            | 0.0060         | 0.5000    | 0           | 103       | 75                                  | 125       | 1.69   | 20       |      |
| Lead       | 0.47            | 0.0050         | 0.5000    | 0           | 94.3      | 75                                  | 125       | 0.594  | 20       |      |
| Nickel     | 0.45            | 0.010          | 0.5000    | 0           | 90.3      | 75                                  | 125       | 0.715  | 20       |      |
| Selenium   | 0.51            | 0.050          | 0.5000    | 0           | 102       | 75                                  | 125       | 2.23   | 20       |      |
| Silver     | 0.10            | 0.0050         | 0.1000    | 0           | 100       | 75                                  | 125       | 1.01   | 20       |      |
| Vanadium   | 0.53            | 0.050          | 0.5000    | 0.02444     | 100       | 75                                  | 125       | 1.16   | 20       |      |
| Zinc       | 0.48            | 0.020          | 0.5000    | 0.01691     | 93.0      | 75                                  | 125       | 0.588  | 20       |      |

### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

# Sample Log-In Check List

Client Name: **NAVAJO REFINING CO**

Work Order Number: **1403C37**

RcptNo: 1

Received by/date: AF 03/29/14

Logged By: **Anne Thorne** 3/29/2014 10:20:00 AM

*Anne Thorne*

Completed By: **Anne Thorne** 3/31/2014

*Anne Thorne*

Reviewed By: AF 03/31/14

## Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? FedEx

## Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH: 2 or 2 unless noted  
Adjusted? \_\_\_\_\_

Checked by: AF 03/31/14

## Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

|                      |       |       |                                                                                                                               |
|----------------------|-------|-------|-------------------------------------------------------------------------------------------------------------------------------|
| Person Notified:     | _____ | Date: | _____                                                                                                                         |
| By Whom:             | _____ | Via:  | <input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person |
| Regarding:           | _____ |       |                                                                                                                               |
| Client Instructions: | _____ |       |                                                                                                                               |

17. Additional remarks:

## 18. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|---------|-----------|-------------|---------|-----------|-----------|
| 1         | 1.4     | Good      | Yes         |         |           |           |







Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

May 19, 2014

Robert Combs  
Navajo Refining Company  
P.O. Box 159  
Artesia, NM 88211-0159  
TEL: (575) 748-3311  
FAX

RE: Skinner List

OrderNo.: 1404B93

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 4/30/2014 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1404B93**

Date Reported: 5/19/2014

**CLIENT:** Navajo Refining Company

**Client Sample ID:** East Water Well

**Project:** Skinner List

**Collection Date:** 4/29/2014 8:30:00 AM

**Lab ID:** 1404B93-001

**Matrix:** AQUEOUS

**Received Date:** 4/30/2014 8:40:00 AM

| Analyses                                   | Result  | MDL      | RL      | Qual | Units | DF | Date Analyzed        | Batch ID |
|--------------------------------------------|---------|----------|---------|------|-------|----|----------------------|----------|
| <b>EPA METHOD 7470: MERCURY</b>            |         |          |         |      |       |    | Analyst: <b>JML</b>  |          |
| Mercury                                    | 0.00012 | 0.000087 | 0.00020 | J    | mg/L  | 1  | 4/30/2014 3:39:40 PM | 12947    |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |         |          |         |      |       |    | Analyst: <b>ELS</b>  |          |
| Antimony                                   | ND      | 0.015    | 0.050   |      | mg/L  | 1  | 5/6/2014 12:10:44 PM | 13004    |
| Arsenic                                    | ND      | 0.0093   | 0.020   |      | mg/L  | 1  | 5/6/2014 12:10:44 PM | 13004    |
| Barium                                     | 0.099   | 0.00062  | 0.020   |      | mg/L  | 1  | 5/6/2014 12:10:44 PM | 13004    |
| Beryllium                                  | ND      | 0.00035  | 0.0030  |      | mg/L  | 1  | 5/6/2014 12:10:44 PM | 13004    |
| Cadmium                                    | ND      | 0.00063  | 0.0020  |      | mg/L  | 1  | 5/6/2014 12:10:44 PM | 13004    |
| Chromium                                   | 0.014   | 0.0017   | 0.0060  |      | mg/L  | 1  | 5/6/2014 12:10:44 PM | 13004    |
| Cobalt                                     | ND      | 0.0015   | 0.0060  |      | mg/L  | 1  | 5/6/2014 12:10:44 PM | 13004    |
| Copper                                     | 0.18    | 0.0046   | 0.0060  |      | mg/L  | 1  | 5/6/2014 12:10:44 PM | 13004    |
| Lead                                       | 0.0080  | 0.0048   | 0.0050  |      | mg/L  | 1  | 5/6/2014 12:10:44 PM | 13004    |
| Nickel                                     | ND      | 0.0019   | 0.010   |      | mg/L  | 1  | 5/6/2014 12:10:44 PM | 13004    |
| Selenium                                   | ND      | 0.022    | 0.050   |      | mg/L  | 1  | 5/6/2014 12:10:44 PM | 13004    |
| Silver                                     | ND      | 0.00052  | 0.0050  |      | mg/L  | 1  | 5/6/2014 12:10:44 PM | 13004    |
| Vanadium                                   | 0.027   | 0.0055   | 0.050   | J    | mg/L  | 1  | 5/6/2014 12:10:44 PM | 13004    |
| Zinc                                       | 0.11    | 0.0049   | 0.020   |      | mg/L  | 1  | 5/6/2014 12:10:44 PM | 13004    |
| <b>EPA METHOD 8260B: VOLATILES</b>         |         |          |         |      |       |    | Analyst: <b>DJF</b>  |          |
| Benzene                                    | ND      | 0.46     | 1.0     |      | µg/L  | 1  | 4/30/2014 5:22:33 PM | R18317   |
| Toluene                                    | ND      | 0.44     | 1.0     |      | µg/L  | 1  | 4/30/2014 5:22:33 PM | R18317   |
| Ethylbenzene                               | ND      | 0.45     | 1.0     |      | µg/L  | 1  | 4/30/2014 5:22:33 PM | R18317   |
| Methyl tert-butyl ether (MTBE)             | ND      | 0.77     | 1.0     |      | µg/L  | 1  | 4/30/2014 5:22:33 PM | R18317   |
| 1,2-Dichloroethane (EDC)                   | ND      | 0.33     | 1.0     |      | µg/L  | 1  | 4/30/2014 5:22:33 PM | R18317   |
| 1,2-Dibromoethane (EDB)                    | ND      | 0.45     | 1.0     |      | µg/L  | 1  | 4/30/2014 5:22:33 PM | R18317   |
| 2-Butanone                                 | ND      | 1.4      | 10      |      | µg/L  | 1  | 4/30/2014 5:22:33 PM | R18317   |
| Carbon disulfide                           | ND      | 0.80     | 10      |      | µg/L  | 1  | 4/30/2014 5:22:33 PM | R18317   |
| Chlorobenzene                              | ND      | 0.49     | 1.0     |      | µg/L  | 1  | 4/30/2014 5:22:33 PM | R18317   |
| Chloroform                                 | ND      | 0.47     | 1.0     |      | µg/L  | 1  | 4/30/2014 5:22:33 PM | R18317   |
| 1,1-Dichloroethane                         | ND      | 0.33     | 1.0     |      | µg/L  | 1  | 4/30/2014 5:22:33 PM | R18317   |
| Styrene                                    | ND      | 0.58     | 1.0     |      | µg/L  | 1  | 4/30/2014 5:22:33 PM | R18317   |
| Tetrachloroethene (PCE)                    | ND      | 0.49     | 1.0     |      | µg/L  | 1  | 4/30/2014 5:22:33 PM | R18317   |
| 1,1,2-Trichloroethane                      | ND      | 0.42     | 1.0     |      | µg/L  | 1  | 4/30/2014 5:22:33 PM | R18317   |
| Trichloroethene (TCE)                      | ND      | 0.42     | 1.0     |      | µg/L  | 1  | 4/30/2014 5:22:33 PM | R18317   |
| Xylenes, Total                             | ND      | 1.4      | 1.5     |      | µg/L  | 1  | 4/30/2014 5:22:33 PM | R18317   |
| 1,4-Dioxane                                | ND      | 10       | 10      |      | µg/L  | 1  | 4/30/2014 5:22:33 PM | R18317   |
| Surr: 1,2-Dichloroethane-d4                | 83.7    | 0        | 70-130  |      | %REC  | 1  | 4/30/2014 5:22:33 PM | R18317   |
| Surr: 4-Bromofluorobenzene                 | 85.8    | 0        | 70-130  |      | %REC  | 1  | 4/30/2014 5:22:33 PM | R18317   |
| Surr: Dibromofluoromethane                 | 103     | 0        | 70-130  |      | %REC  | 1  | 4/30/2014 5:22:33 PM | R18317   |
| Surr: Toluene-d8                           | 92.2    | 0        | 70-130  |      | %REC  | 1  | 4/30/2014 5:22:33 PM | R18317   |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |   |                                                 |    |                                                    |
|--------------------|---|-------------------------------------------------|----|----------------------------------------------------|
| <b>Qualifiers:</b> | * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    |
|                    | E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |
|                    | J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |
|                    | O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |
|                    | R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |
|                    | S | Spike Recovery outside accepted recovery limits |    |                                                    |

## Hall Environmental Analysis Laboratory, Inc.

CLIENT: Navajo Refining Company

Client Sample ID: East Water Well

Project: Skinner List

Collection Date: 4/29/2014 8:30:00 AM

Lab ID: 1404B93-001

Matrix: AQUEOUS

Received Date: 4/30/2014 8:40:00 AM

| Analyses                        | Result | MDL  | RL     | Qual | Units | DF | Date Analyzed | Batch ID |
|---------------------------------|--------|------|--------|------|-------|----|---------------|----------|
| <b>EPA 8270D: SEMIVOLATILES</b> |        |      |        |      |       |    | Analyst: SUB  |          |
| Dibenz(a,h)acridine             | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| Benzenethiol                    | ND     | 0.50 | 5.0    |      | µg/L  | 1  | 5/9/2014      | R18667   |
| Indene                          | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| 1,2-Dichlorobenzene             | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| 1,3-Dichlorobenzene             | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| 1,4-Dichlorobenzene             | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| 1-Methylnaphthalene             | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| 2,4-Dimethylphenol              | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| 2,4-Dinitrophenol               | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| 2-Methylphenol                  | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| 3+4-Methylphenol                | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| 4-Nitrophenol                   | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| Acenaphthylene                  | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| Anthracene                      | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| Benz(a)anthracene               | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| Benzo(a)pyrene                  | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| Benzo(b)fluoranthene            | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| Benzo(k)fluoranthene            | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| Bis(2-ethylhexyl)phthalate      | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| Chrysene                        | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| Dibenz(a,h)anthracene           | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| Diethyl phthalate               | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| Dimethyl phthalate              | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| Di-n-butyl phthalate            | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| Fluoranthene                    | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| Fluorene                        | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| Indeno(1,2,3-cd)pyrene          | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| Naphthalene                     | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| Phenanthrene                    | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| Phenol                          | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| Pyrene                          | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| Pyridine                        | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| Quinoline                       | ND     | 0.50 | 0.50   |      | µg/L  | 1  | 5/9/2014      | R18667   |
| Surr: 2,4,6-Tribromophenol      | 93.1   | 0    | 53-122 |      | %REC  | 1  | 5/9/2014      | R18667   |
| Surr: 2-Fluorobiphenyl          | 94.0   | 0    | 12-116 |      | %REC  | 1  | 5/9/2014      | R18667   |
| Surr: 2-Fluorophenol            | 90.6   | 0    | 10-139 |      | %REC  | 1  | 5/9/2014      | R18667   |
| Surr: Nitrobenzene-d5           | 85.4   | 0    | 68-118 |      | %REC  | 1  | 5/9/2014      | R18667   |
| Surr: Phenol-d5                 | 90.6   | 0    | 28-154 |      | %REC  | 1  | 5/9/2014      | R18667   |
| Surr: Terphenyl-d14             | 111    | 0    | 52-144 |      | %REC  | 1  | 5/9/2014      | R18667   |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |   |                                                 |    |                                                    |
|--------------------|---|-------------------------------------------------|----|----------------------------------------------------|
| <b>Qualifiers:</b> | * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    |
|                    | E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |
|                    | J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |
|                    | O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |
|                    | R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |
|                    | S | Spike Recovery outside accepted recovery limits |    |                                                    |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1404B93**

Date Reported: 5/19/2014

**CLIENT:** Navajo Refining Company

**Client Sample ID:** East Water Well

**Project:** Skinner List

**Collection Date:** 4/29/2014 8:30:00 AM

**Lab ID:** 1404B93-001

**Matrix:** AQUEOUS

**Received Date:** 4/30/2014 8:40:00 AM

| Analyses                               | Result | MDL    | RL     | Qual | Units | DF | Date Analyzed       | Batch ID |
|----------------------------------------|--------|--------|--------|------|-------|----|---------------------|----------|
| <b>EPA 335.4: TOTAL CYANIDE SUBBED</b> |        |        |        |      |       |    | Analyst: <b>SUB</b> |          |
| Cyanide                                | ND     | 0.0100 | 0.0100 |      | mg/L  | 1  | 5/13/2014           | R18669   |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |   |                                                 |    |                                                    |
|--------------------|---|-------------------------------------------------|----|----------------------------------------------------|
| <b>Qualifiers:</b> | * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    |
|                    | E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |
|                    | J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |
|                    | O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |
|                    | R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |
|                    | S | Spike Recovery outside accepted recovery limits |    |                                                    |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1404B93**

Date Reported: 5/19/2014

**CLIENT:** Navajo Refining Company**Client Sample ID:** TRIP BLANK**Project:** Skinner List**Collection Date:** 4/29/2014 8:30:00 AM**Lab ID:** 1404B93-002**Matrix:** TRIP BLANK**Received Date:** 4/30/2014 8:40:00 AM

| Analyses                           | Result | MDL  | RL     | Qual | Units | DF | Date Analyzed        | Batch ID |
|------------------------------------|--------|------|--------|------|-------|----|----------------------|----------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |      |        |      |       |    | Analyst: <b>DJF</b>  |          |
| Benzene                            | ND     | 0.46 | 1.0    |      | µg/L  | 1  | 4/30/2014 5:52:36 PM | R18317   |
| Toluene                            | ND     | 0.44 | 1.0    |      | µg/L  | 1  | 4/30/2014 5:52:36 PM | R18317   |
| Ethylbenzene                       | ND     | 0.45 | 1.0    |      | µg/L  | 1  | 4/30/2014 5:52:36 PM | R18317   |
| Methyl tert-butyl ether (MTBE)     | ND     | 0.77 | 1.0    |      | µg/L  | 1  | 4/30/2014 5:52:36 PM | R18317   |
| 1,2-Dichloroethane (EDC)           | ND     | 0.33 | 1.0    |      | µg/L  | 1  | 4/30/2014 5:52:36 PM | R18317   |
| 1,2-Dibromoethane (EDB)            | ND     | 0.45 | 1.0    |      | µg/L  | 1  | 4/30/2014 5:52:36 PM | R18317   |
| 2-Butanone                         | ND     | 1.4  | 10     |      | µg/L  | 1  | 4/30/2014 5:52:36 PM | R18317   |
| Carbon disulfide                   | ND     | 0.80 | 10     |      | µg/L  | 1  | 4/30/2014 5:52:36 PM | R18317   |
| Chlorobenzene                      | ND     | 0.49 | 1.0    |      | µg/L  | 1  | 4/30/2014 5:52:36 PM | R18317   |
| Chloroform                         | ND     | 0.47 | 1.0    |      | µg/L  | 1  | 4/30/2014 5:52:36 PM | R18317   |
| 1,1-Dichloroethane                 | ND     | 0.33 | 1.0    |      | µg/L  | 1  | 4/30/2014 5:52:36 PM | R18317   |
| Styrene                            | ND     | 0.58 | 1.0    |      | µg/L  | 1  | 4/30/2014 5:52:36 PM | R18317   |
| Tetrachloroethene (PCE)            | ND     | 0.49 | 1.0    |      | µg/L  | 1  | 4/30/2014 5:52:36 PM | R18317   |
| 1,1,1-Trichloroethane              | ND     | 0.40 | 1.0    |      | µg/L  | 1  | 4/30/2014 5:52:36 PM | R18317   |
| Trichloroethene (TCE)              | ND     | 0.42 | 1.0    |      | µg/L  | 1  | 4/30/2014 5:52:36 PM | R18317   |
| Xylenes, Total                     | ND     | 1.4  | 1.5    |      | µg/L  | 1  | 4/30/2014 5:52:36 PM | R18317   |
| 1,4-Dioxane                        | ND     | 10   | 10     |      | µg/L  | 1  | 4/30/2014 5:52:36 PM | R18317   |
| Surr: 1,2-Dichloroethane-d4        | 78.5   | 0    | 70-130 |      | %REC  | 1  | 4/30/2014 5:52:36 PM | R18317   |
| Surr: 4-Bromofluorobenzene         | 95.6   | 0    | 70-130 |      | %REC  | 1  | 4/30/2014 5:52:36 PM | R18317   |
| Surr: Dibromofluoromethane         | 94.7   | 0    | 70-130 |      | %REC  | 1  | 4/30/2014 5:52:36 PM | R18317   |
| Surr: Toluene-d8                   | 88.7   | 0    | 70-130 |      | %REC  | 1  | 4/30/2014 5:52:36 PM | R18317   |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |   |                                                 |    |                                                    |
|--------------------|---|-------------------------------------------------|----|----------------------------------------------------|
| <b>Qualifiers:</b> | * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    |
|                    | E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |
|                    | J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |
|                    | O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |
|                    | R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |
|                    | S | Spike Recovery outside accepted recovery limits |    |                                                    |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1404B93

19-May-14

Client: Navajo Refining Company

Project: Skinner List

|                                |        |                          |           |             |                                       |             |           |      |          |      |
|--------------------------------|--------|--------------------------|-----------|-------------|---------------------------------------|-------------|-----------|------|----------|------|
| Sample ID                      | 5mL rb | SampType: MBLK           |           |             | TestCode: EPA Method 8260B: VOLATILES |             |           |      |          |      |
| Client ID:                     | PBW    | Batch ID: R18317         |           |             | RunNo: 18317                          |             |           |      |          |      |
| Prep Date:                     |        | Analysis Date: 4/30/2014 |           |             | SeqNo: 529072                         | Units: µg/L |           |      |          |      |
| Analyte                        | Result | PQL                      | SPK value | SPK Ref Val | %REC                                  | LowLimit    | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                        | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Toluene                        | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Ethylbenzene                   | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Methyl tert-butyl ether (MTBE) | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,2,4-Trimethylbenzene         | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,3,5-Trimethylbenzene         | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,2-Dichloroethane (EDC)       | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,2-Dibromoethane (EDB)        | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Naphthalene                    | ND     | 2.0                      |           |             |                                       |             |           |      |          |      |
| 1-Methylnaphthalene            | ND     | 4.0                      |           |             |                                       |             |           |      |          |      |
| 2-Methylnaphthalene            | ND     | 4.0                      |           |             |                                       |             |           |      |          |      |
| Acetone                        | ND     | 10                       |           |             |                                       |             |           |      |          |      |
| Bromobenzene                   | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Bromodichloromethane           | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Bromoform                      | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Bromomethane                   | ND     | 3.0                      |           |             |                                       |             |           |      |          |      |
| 2-Butanone                     | ND     | 10                       |           |             |                                       |             |           |      |          |      |
| Carbon disulfide               | ND     | 10                       |           |             |                                       |             |           |      |          |      |
| Carbon Tetrachloride           | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Chlorobenzene                  | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Chloroethane                   | ND     | 2.0                      |           |             |                                       |             |           |      |          |      |
| Chloroform                     | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Chloromethane                  | ND     | 3.0                      |           |             |                                       |             |           |      |          |      |
| 2-Chlorotoluene                | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 4-Chlorotoluene                | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| cis-1,2-DCE                    | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| cis-1,3-Dichloropropene        | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,2-Dibromo-3-chloropropane    | ND     | 2.0                      |           |             |                                       |             |           |      |          |      |
| Dibromochloromethane           | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Dibromomethane                 | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,2-Dichlorobenzene            | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,3-Dichlorobenzene            | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,4-Dichlorobenzene            | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Dichlorodifluoromethane        | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,1-Dichloroethane             | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,1-Dichloroethene             | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,2-Dichloropropane            | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,3-Dichloropropane            | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 2,2-Dichloropropane            | ND     | 2.0                      |           |             |                                       |             |           |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1404B93

19-May-14

**Client:** Navajo Refining Company

**Project:** Skinner List

| Sample ID                   | 5mL rb | SampType: MBLK           |           |             |      | TestCode: EPA Method 8260B: VOLATILES |             |      |          |      |
|-----------------------------|--------|--------------------------|-----------|-------------|------|---------------------------------------|-------------|------|----------|------|
| Client ID:                  | PBW    | Batch ID: R18317         |           |             |      | RunNo: 18317                          |             |      |          |      |
| Prep Date:                  |        | Analysis Date: 4/30/2014 |           |             |      | SeqNo: 529072                         | Units: µg/L |      |          |      |
| Analyte                     | Result | PQL                      | SPK value | SPK Ref Val | %REC | LowLimit                              | HighLimit   | %RPD | RPDLimit | Qual |
| 1,1-Dichloropropene         | ND     | 1.0                      |           |             |      |                                       |             |      |          |      |
| Hexachlorobutadiene         | ND     | 1.0                      |           |             |      |                                       |             |      |          |      |
| 2-Hexanone                  | ND     | 10                       |           |             |      |                                       |             |      |          |      |
| Isopropylbenzene            | ND     | 1.0                      |           |             |      |                                       |             |      |          |      |
| 4-Isopropyltoluene          | ND     | 1.0                      |           |             |      |                                       |             |      |          |      |
| 4-Methyl-2-pentanone        | ND     | 10                       |           |             |      |                                       |             |      |          |      |
| Methylene Chloride          | 0.36   | 3.0                      |           |             |      |                                       |             |      |          | J    |
| n-Butylbenzene              | ND     | 3.0                      |           |             |      |                                       |             |      |          |      |
| n-Propylbenzene             | ND     | 1.0                      |           |             |      |                                       |             |      |          |      |
| sec-Butylbenzene            | ND     | 1.0                      |           |             |      |                                       |             |      |          |      |
| Styrene                     | ND     | 1.0                      |           |             |      |                                       |             |      |          |      |
| tert-Butylbenzene           | ND     | 1.0                      |           |             |      |                                       |             |      |          |      |
| 1,1,1,2-Tetrachloroethane   | ND     | 1.0                      |           |             |      |                                       |             |      |          |      |
| 1,1,2,2-Tetrachloroethane   | ND     | 2.0                      |           |             |      |                                       |             |      |          |      |
| Tetrachloroethene (PCE)     | ND     | 1.0                      |           |             |      |                                       |             |      |          |      |
| trans-1,2-DCE               | ND     | 1.0                      |           |             |      |                                       |             |      |          |      |
| trans-1,3-Dichloropropene   | ND     | 1.0                      |           |             |      |                                       |             |      |          |      |
| 1,2,3-Trichlorobenzene      | ND     | 1.0                      |           |             |      |                                       |             |      |          |      |
| 1,2,4-Trichlorobenzene      | ND     | 1.0                      |           |             |      |                                       |             |      |          |      |
| 1,1,1-Trichloroethane       | ND     | 1.0                      |           |             |      |                                       |             |      |          |      |
| 1,1,2-Trichloroethane       | ND     | 1.0                      |           |             |      |                                       |             |      |          |      |
| Trichloroethene (TCE)       | ND     | 1.0                      |           |             |      |                                       |             |      |          |      |
| Trichlorofluoromethane      | ND     | 1.0                      |           |             |      |                                       |             |      |          |      |
| 1,2,3-Trichloropropane      | ND     | 2.0                      |           |             |      |                                       |             |      |          |      |
| Vinyl chloride              | ND     | 1.0                      |           |             |      |                                       |             |      |          |      |
| Xylenes, Total              | ND     | 1.5                      |           |             |      |                                       |             |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 7.3    |                          | 10.00     |             | 73.3 | 70                                    | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 9.1    |                          | 10.00     |             | 90.7 | 70                                    | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 9.0    |                          | 10.00     |             | 90.4 | 70                                    | 130         |      |          |      |
| Surr: Toluene-d8            | 9.1    |                          | 10.00     |             | 91.3 | 70                                    | 130         |      |          |      |

| Sample ID     | 100nglcs.200ngann | SampType: LCS            |           |             |      | TestCode: EPA Method 8260B: VOLATILES |             |      |          |      |
|---------------|-------------------|--------------------------|-----------|-------------|------|---------------------------------------|-------------|------|----------|------|
| Client ID:    | LCSW              | Batch ID: R18317         |           |             |      | RunNo: 18317                          |             |      |          |      |
| Prep Date:    |                   | Analysis Date: 4/30/2014 |           |             |      | SeqNo: 529081                         | Units: µg/L |      |          |      |
| Analyte       | Result            | PQL                      | SPK value | SPK Ref Val | %REC | LowLimit                              | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene       | 20                | 1.0                      | 20.00     | 0           | 101  | 70                                    | 130         |      |          |      |
| Toluene       | 18                | 1.0                      | 20.00     | 0           | 91.7 | 80                                    | 120         |      |          |      |
| Chlorobenzene | 18                | 1.0                      | 20.00     | 0           | 92.2 | 70                                    | 130         |      |          |      |

### Qualifiers:

|   |                                                 |    |                                                    |
|---|-------------------------------------------------|----|----------------------------------------------------|
| * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    |
| E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |
| J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |
| O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |
| R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |
| S | Spike Recovery outside accepted recovery limits |    |                                                    |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1404B93

19-May-14

**Client:** Navajo Refining Company

**Project:** Skinner List

|                             |                   |     |                          |             |                                       |          |             |      |          |      |
|-----------------------------|-------------------|-----|--------------------------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 100nglcs.200ngann |     | SampType: LCS            |             | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID:                  | LCSW              |     | Batch ID: R18317         |             | RunNo: 18317                          |          |             |      |          |      |
| Prep Date:                  |                   |     | Analysis Date: 4/30/2014 |             | SeqNo: 529081                         |          | Units: µg/L |      |          |      |
| Analyte                     | Result            | PQL | SPK value                | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| 1,1-Dichloroethene          | 23                | 1.0 | 20.00                    | 0           | 117                                   | 90       | 143         |      |          |      |
| Trichloroethene (TCE)       | 20                | 1.0 | 20.00                    | 0           | 99.4                                  | 70       | 130         |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 7.1               |     | 10.00                    |             | 70.5                                  | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 8.8               |     | 10.00                    |             | 87.5                                  | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 8.2               |     | 10.00                    |             | 81.9                                  | 70       | 130         |      |          |      |
| Surr: Toluene-d8            | 8.8               |     | 10.00                    |             | 88.1                                  | 70       | 130         |      |          |      |

|                                |        |                          |           |             |                                       |          |             |      |          |      |
|--------------------------------|--------|--------------------------|-----------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID                      | b3     | SampType: MBLK           |           |             | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID:                     | PBW    | Batch ID: R18317         |           |             | RunNo: 18317                          |          |             |      |          |      |
| Prep Date:                     |        | Analysis Date: 4/30/2014 |           |             | SeqNo: 529108                         |          | Units: µg/L |      |          |      |
| Analyte                        | Result | PQL                      | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                        | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Toluene                        | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Ethylbenzene                   | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Methyl tert-butyl ether (MTBE) | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,2,4-Trimethylbenzene         | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,3,5-Trimethylbenzene         | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,2-Dichloroethane (EDC)       | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,2-Dibromoethane (EDB)        | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Naphthalene                    | ND     | 2.0                      |           |             |                                       |          |             |      |          |      |
| 1-Methylnaphthalene            | ND     | 4.0                      |           |             |                                       |          |             |      |          |      |
| 2-Methylnaphthalene            | ND     | 4.0                      |           |             |                                       |          |             |      |          |      |
| Acetone                        | ND     | 10                       |           |             |                                       |          |             |      |          |      |
| Bromobenzene                   | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Bromodichloromethane           | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Bromoform                      | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Bromomethane                   | ND     | 3.0                      |           |             |                                       |          |             |      |          |      |
| 2-Butanone                     | ND     | 10                       |           |             |                                       |          |             |      |          |      |
| Carbon disulfide               | ND     | 10                       |           |             |                                       |          |             |      |          |      |
| Carbon Tetrachloride           | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Chlorobenzene                  | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Chloroethane                   | ND     | 2.0                      |           |             |                                       |          |             |      |          |      |
| Chloroform                     | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Chloromethane                  | ND     | 3.0                      |           |             |                                       |          |             |      |          |      |
| 2-Chlorotoluene                | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 4-Chlorotoluene                | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| cis-1,2-DCE                    | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| cis-1,3-Dichloropropene        | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |

### Qualifiers:

|   |                                                 |    |                                                    |
|---|-------------------------------------------------|----|----------------------------------------------------|
| * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    |
| E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |
| J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |
| O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |
| R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |
| S | Spike Recovery outside accepted recovery limits |    |                                                    |



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1404B93

19-May-14

Client: Navajo Refining Company

Project: Skinner List

|                             |                                 |     |           |                                              |      |                    |           |      |          |      |
|-----------------------------|---------------------------------|-----|-----------|----------------------------------------------|------|--------------------|-----------|------|----------|------|
| Sample ID <b>b3</b>         | SampType: <b>MBLK</b>           |     |           | TestCode: <b>EPA Method 8260B: VOLATILES</b> |      |                    |           |      |          |      |
| Client ID: <b>PBW</b>       | Batch ID: <b>R18317</b>         |     |           | RunNo: <b>18317</b>                          |      |                    |           |      |          |      |
| Prep Date:                  | Analysis Date: <b>4/30/2014</b> |     |           | SeqNo: <b>529108</b>                         |      | Units: <b>µg/L</b> |           |      |          |      |
| Analyte                     | Result                          | PQL | SPK value | SPK Ref Val                                  | %REC | LowLimit           | HighLimit | %RPD | RPDLimit | Qual |
| 1,2-Dibromo-3-chloropropane | ND                              | 2.0 |           |                                              |      |                    |           |      |          |      |
| Dibromochloromethane        | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| Dibromomethane              | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| 1,2-Dichlorobenzene         | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| 1,3-Dichlorobenzene         | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| 1,4-Dichlorobenzene         | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| Dichlorodifluoromethane     | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| 1,1-Dichloroethane          | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| 1,1-Dichloroethene          | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| 1,2-Dichloropropane         | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| 1,3-Dichloropropane         | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| 2,2-Dichloropropane         | ND                              | 2.0 |           |                                              |      |                    |           |      |          |      |
| 1,1-Dichloropropene         | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| Hexachlorobutadiene         | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| 2-Hexanone                  | ND                              | 10  |           |                                              |      |                    |           |      |          |      |
| Isopropylbenzene            | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| 4-Isopropyltoluene          | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| 4-Methyl-2-pentanone        | ND                              | 10  |           |                                              |      |                    |           |      |          |      |
| Methylene Chloride          | 0.49                            | 3.0 |           |                                              |      |                    |           |      |          | J    |
| n-Butylbenzene              | ND                              | 3.0 |           |                                              |      |                    |           |      |          |      |
| n-Propylbenzene             | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| sec-Butylbenzene            | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| Styrene                     | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| tert-Butylbenzene           | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| 1,1,1,2-Tetrachloroethane   | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| 1,1,2,2-Tetrachloroethane   | ND                              | 2.0 |           |                                              |      |                    |           |      |          |      |
| Tetrachloroethene (PCE)     | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| trans-1,2-DCE               | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| trans-1,3-Dichloropropene   | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| 1,2,3-Trichlorobenzene      | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| 1,2,4-Trichlorobenzene      | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| 1,1,1-Trichloroethane       | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| 1,1,2-Trichloroethane       | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| Trichloroethene (TCE)       | 0.26                            | 1.0 |           |                                              |      |                    |           |      |          | J    |
| Trichlorofluoromethane      | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| 1,2,3-Trichloropropane      | ND                              | 2.0 |           |                                              |      |                    |           |      |          |      |
| Vinyl chloride              | ND                              | 1.0 |           |                                              |      |                    |           |      |          |      |
| Xylenes, Total              | ND                              | 1.5 |           |                                              |      |                    |           |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 11                              |     | 10.00     |                                              | 108  | 70                 | 130       |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1404B93

19-May-14

**Client:** Navajo Refining Company

**Project:** Skinner List

| Sample ID <b>b3</b>        | SampType: <b>MBLK</b>           |     |           | TestCode: <b>EPA Method 8260B: VOLATILES</b> |      |                    |           |      |          |      |
|----------------------------|---------------------------------|-----|-----------|----------------------------------------------|------|--------------------|-----------|------|----------|------|
| Client ID: <b>PBW</b>      | Batch ID: <b>R18317</b>         |     |           | RunNo: <b>18317</b>                          |      |                    |           |      |          |      |
| Prep Date:                 | Analysis Date: <b>4/30/2014</b> |     |           | SeqNo: <b>529108</b>                         |      | Units: <b>µg/L</b> |           |      |          |      |
| Analyte                    | Result                          | PQL | SPK value | SPK Ref Val                                  | %REC | LowLimit           | HighLimit | %RPD | RPDLimit | Qual |
| Surr: 4-Bromofluorobenzene | 8.8                             |     | 10.00     |                                              | 87.9 | 70                 | 130       |      |          |      |
| Surr: Dibromofluoromethane | 9.6                             |     | 10.00     |                                              | 95.6 | 70                 | 130       |      |          |      |
| Surr: Toluene-d8           | 9.1                             |     | 10.00     |                                              | 91.1 | 70                 | 130       |      |          |      |

| Sample ID <b>100ng lcs2</b> | SampType: <b>LCS</b>            |     |           | TestCode: <b>EPA Method 8260B: VOLATILES</b> |      |                    |           |      |          |      |
|-----------------------------|---------------------------------|-----|-----------|----------------------------------------------|------|--------------------|-----------|------|----------|------|
| Client ID: <b>LCSW</b>      | Batch ID: <b>R18317</b>         |     |           | RunNo: <b>18317</b>                          |      |                    |           |      |          |      |
| Prep Date:                  | Analysis Date: <b>4/30/2014</b> |     |           | SeqNo: <b>529109</b>                         |      | Units: <b>µg/L</b> |           |      |          |      |
| Analyte                     | Result                          | PQL | SPK value | SPK Ref Val                                  | %REC | LowLimit           | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                     | 21                              | 1.0 | 20.00     | 0                                            | 104  | 70                 | 130       |      |          |      |
| Toluene                     | 20                              | 1.0 | 20.00     | 0                                            | 98.2 | 80                 | 120       |      |          |      |
| Chlorobenzene               | 19                              | 1.0 | 20.00     | 0                                            | 95.0 | 70                 | 130       |      |          |      |
| 1,1-Dichloroethene          | 24                              | 1.0 | 20.00     | 0                                            | 119  | 90                 | 143       |      |          |      |
| Trichloroethene (TCE)       | 20                              | 1.0 | 20.00     | 0                                            | 101  | 70                 | 130       |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 7.6                             |     | 10.00     |                                              | 75.9 | 70                 | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 9.7                             |     | 10.00     |                                              | 96.9 | 70                 | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 8.3                             |     | 10.00     |                                              | 82.9 | 70                 | 130       |      |          |      |
| Surr: Toluene-d8            | 9.7                             |     | 10.00     |                                              | 96.6 | 70                 | 130       |      |          |      |

### Qualifiers:

- |                                                   |                                                      |
|---------------------------------------------------|------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    |
| E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               |
| O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
| R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
| S Spike Recovery outside accepted recovery limits |                                                      |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1404B93

19-May-14

Client: Navajo Refining Company

Project: Skinner List

|                            |                  |      |                                |             |                                           |          |                    |      |          |      |
|----------------------------|------------------|------|--------------------------------|-------------|-------------------------------------------|----------|--------------------|------|----------|------|
| Sample ID                  | <b>MB-R18667</b> |      | SampType: <b>MBLK</b>          |             | TestCode: <b>EPA 8270D: Semivolatiles</b> |          |                    |      |          |      |
| Client ID:                 | <b>PBW</b>       |      | Batch ID: <b>R18667</b>        |             | RunNo: <b>18667</b>                       |          |                    |      |          |      |
| Prep Date:                 |                  |      | Analysis Date: <b>5/9/2014</b> |             | SeqNo: <b>539391</b>                      |          | Units: <b>µg/L</b> |      |          |      |
| Analyte                    | Result           | PQL  | SPK value                      | SPK Ref Val | %REC                                      | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| 1,2-Dichlorobenzene        | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| 1,3-Dichlorobenzene        | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| 1,4-Dichlorobenzene        | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| 1-Methylnaphthalene        | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| 2,4-Dimethylphenol         | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| 2,4-Dinitrophenol          | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| 2-Methylphenol             | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| 3+4-Methylphenol           | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| 4-Nitrophenol              | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Acenaphthylene             | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Anthracene                 | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Benz(a)anthracene          | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Benzo(a)pyrene             | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Benzo(b)fluoranthene       | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Benzo(k)fluoranthene       | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Bis(2-ethylhexyl)phthalate | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Chrysene                   | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Dibenz(a,h)anthracene      | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Diethyl phthalate          | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Di-n-butyl phthalate       | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Fluoranthene               | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Fluorene                   | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Indeno(1,2,3-cd)pyrene     | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Naphthalene                | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Phenanthrene               | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Phenol                     | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Pyrene                     | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Pyridine                   | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |

|                            |                   |      |                                |             |                                           |          |                    |      |          |      |
|----------------------------|-------------------|------|--------------------------------|-------------|-------------------------------------------|----------|--------------------|------|----------|------|
| Sample ID                  | <b>LCS-R18667</b> |      | SampType: <b>LCS</b>           |             | TestCode: <b>EPA 8270D: Semivolatiles</b> |          |                    |      |          |      |
| Client ID:                 | <b>LCSW</b>       |      | Batch ID: <b>R18667</b>        |             | RunNo: <b>18667</b>                       |          |                    |      |          |      |
| Prep Date:                 |                   |      | Analysis Date: <b>5/9/2014</b> |             | SeqNo: <b>539392</b>                      |          | Units: <b>µg/L</b> |      |          |      |
| Analyte                    | Result            | PQL  | SPK value                      | SPK Ref Val | %REC                                      | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| 1,4-Dichlorobenzene        | 5.0               | 0.50 | 5.000                          | 0           | 99.2                                      | 28       | 108                |      |          |      |
| 4-Nitrophenol              | 3.8               | 0.50 | 5.000                          | 0           | 76.6                                      | 19       | 137                |      |          |      |
| Bis(2-ethylhexyl)phthalate | 7.0               | 0.50 | 5.000                          | 0           | 140                                       | 51       | 149                |      |          |      |
| Phenol                     | 5.8               | 0.50 | 5.000                          | 0           | 115                                       | 45       | 134                |      |          |      |
| Pyrene                     | 5.6               | 0.50 | 5.000                          | 0           | 111                                       | 45       | 139                |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1404B93

19-May-14

Client: Navajo Refining Company

Project: Skinner List

|            |           |        |                          |             |      |                                           |           |             |          |      |  |
|------------|-----------|--------|--------------------------|-------------|------|-------------------------------------------|-----------|-------------|----------|------|--|
| Sample ID  | MB-R18669 |        | SampType: MBLK           |             |      | TestCode: EPA 335.4: Total Cyanide Subbed |           |             |          |      |  |
| Client ID: | PBW       |        | Batch ID: R18669         |             |      | RunNo: 18669                              |           |             |          |      |  |
| Prep Date: |           |        | Analysis Date: 5/13/2014 |             |      | SeqNo: 539399                             |           | Units: mg/L |          |      |  |
| Analyte    | Result    | PQL    | SPK value                | SPK Ref Val | %REC | LowLimit                                  | HighLimit | %RPD        | RPDLimit | Qual |  |
| Cyanide    | ND        | 0.0100 |                          |             |      |                                           |           |             |          |      |  |

|            |            |        |                          |             |      |                                           |           |             |          |      |  |
|------------|------------|--------|--------------------------|-------------|------|-------------------------------------------|-----------|-------------|----------|------|--|
| Sample ID  | LCS-R18669 |        | SampType: LCS            |             |      | TestCode: EPA 335.4: Total Cyanide Subbed |           |             |          |      |  |
| Client ID: | LCSW       |        | Batch ID: R18669         |             |      | RunNo: 18669                              |           |             |          |      |  |
| Prep Date: |            |        | Analysis Date: 5/13/2014 |             |      | SeqNo: 539400                             |           | Units: mg/L |          |      |  |
| Analyte    | Result     | PQL    | SPK value                | SPK Ref Val | %REC | LowLimit                                  | HighLimit | %RPD        | RPDLimit | Qual |  |
| Cyanide    | 0.499      | 0.0100 | 0.5000                   | 0           | 99.8 | 80                                        | 120       |             |          |      |  |

### Qualifiers:

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O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1404B93

19-May-14

Client: Navajo Refining Company

Project: Skinner List

|            |           |                |           |             |                          |          |           |      |          |      |
|------------|-----------|----------------|-----------|-------------|--------------------------|----------|-----------|------|----------|------|
| Sample ID  | MB-12947  | SampType:      | MBLK      | TestCode:   | EPA Method 7470: Mercury |          |           |      |          |      |
| Client ID: | PBW       | Batch ID:      | 12947     | RunNo:      | 18312                    |          |           |      |          |      |
| Prep Date: | 4/30/2014 | Analysis Date: | 4/30/2014 | SeqNo:      | 528846                   | Units:   | mg/L      |      |          |      |
| Analyte    | Result    | PQL            | SPK value | SPK Ref Val | %REC                     | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Mercury    | ND        | 0.00020        |           |             |                          |          |           |      |          |      |

|            |           |                |           |             |                          |          |           |      |          |      |
|------------|-----------|----------------|-----------|-------------|--------------------------|----------|-----------|------|----------|------|
| Sample ID  | LCS-12947 | SampType:      | LCS       | TestCode:   | EPA Method 7470: Mercury |          |           |      |          |      |
| Client ID: | LCSW      | Batch ID:      | 12947     | RunNo:      | 18312                    |          |           |      |          |      |
| Prep Date: | 4/30/2014 | Analysis Date: | 4/30/2014 | SeqNo:      | 528847                   | Units:   | mg/L      |      |          |      |
| Analyte    | Result    | PQL            | SPK value | SPK Ref Val | %REC                     | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Mercury    | 0.0056    | 0.00020        | 0.005000  | 0           | 113                      | 80       | 120       |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1404B93

19-May-14

Client: Navajo Refining Company

Project: Skinner List

|            |          |                |           |             |                                     |          |           |      |          |      |
|------------|----------|----------------|-----------|-------------|-------------------------------------|----------|-----------|------|----------|------|
| Sample ID  | MB-13004 | SampType:      | MBLK      | TestCode:   | EPA 6010B: Total Recoverable Metals |          |           |      |          |      |
| Client ID: | PBW      | Batch ID:      | 13004     | RunNo:      | 18416                               |          |           |      |          |      |
| Prep Date: | 5/5/2014 | Analysis Date: | 5/6/2014  | SeqNo:      | 531883                              | Units:   | mg/L      |      |          |      |
| Analyte    | Result   | PQL            | SPK value | SPK Ref Val | %REC                                | LowLimit | HighLimit | %RPD | RPDLimit | Qual |

|           |       |        |  |  |  |  |  |  |  |   |
|-----------|-------|--------|--|--|--|--|--|--|--|---|
| Antimony  | 0.020 | 0.050  |  |  |  |  |  |  |  | J |
| Arsenic   | ND    | 0.020  |  |  |  |  |  |  |  |   |
| Barium    | ND    | 0.020  |  |  |  |  |  |  |  |   |
| Beryllium | ND    | 0.0030 |  |  |  |  |  |  |  |   |
| Cadmium   | ND    | 0.0020 |  |  |  |  |  |  |  |   |
| Chromium  | ND    | 0.0060 |  |  |  |  |  |  |  |   |
| Cobalt    | ND    | 0.0060 |  |  |  |  |  |  |  |   |
| Copper    | ND    | 0.0060 |  |  |  |  |  |  |  |   |
| Lead      | ND    | 0.0050 |  |  |  |  |  |  |  |   |
| Nickel    | ND    | 0.010  |  |  |  |  |  |  |  |   |
| Selenium  | ND    | 0.050  |  |  |  |  |  |  |  |   |
| Silver    | ND    | 0.0050 |  |  |  |  |  |  |  |   |
| Vanadium  | ND    | 0.050  |  |  |  |  |  |  |  |   |
| Zinc      | ND    | 0.020  |  |  |  |  |  |  |  |   |

|            |           |                |           |             |                                     |          |           |      |          |      |
|------------|-----------|----------------|-----------|-------------|-------------------------------------|----------|-----------|------|----------|------|
| Sample ID  | LCS-13004 | SampType:      | LCS       | TestCode:   | EPA 6010B: Total Recoverable Metals |          |           |      |          |      |
| Client ID: | LCSW      | Batch ID:      | 13004     | RunNo:      | 18416                               |          |           |      |          |      |
| Prep Date: | 5/5/2014  | Analysis Date: | 5/6/2014  | SeqNo:      | 531884                              | Units:   | mg/L      |      |          |      |
| Analyte    | Result    | PQL            | SPK value | SPK Ref Val | %REC                                | LowLimit | HighLimit | %RPD | RPDLimit | Qual |

|           |       |        |        |   |      |    |     |  |  |  |
|-----------|-------|--------|--------|---|------|----|-----|--|--|--|
| Antimony  | 0.50  | 0.050  | 0.5000 | 0 | 99.1 | 80 | 120 |  |  |  |
| Arsenic   | 0.49  | 0.020  | 0.5000 | 0 | 97.4 | 80 | 120 |  |  |  |
| Barium    | 0.47  | 0.020  | 0.5000 | 0 | 94.9 | 80 | 120 |  |  |  |
| Beryllium | 0.50  | 0.0030 | 0.5000 | 0 | 99.9 | 80 | 120 |  |  |  |
| Cadmium   | 0.47  | 0.0020 | 0.5000 | 0 | 94.5 | 80 | 120 |  |  |  |
| Chromium  | 0.47  | 0.0060 | 0.5000 | 0 | 94.8 | 80 | 120 |  |  |  |
| Cobalt    | 0.46  | 0.0060 | 0.5000 | 0 | 91.4 | 80 | 120 |  |  |  |
| Copper    | 0.48  | 0.0060 | 0.5000 | 0 | 96.6 | 80 | 120 |  |  |  |
| Lead      | 0.47  | 0.0050 | 0.5000 | 0 | 93.4 | 80 | 120 |  |  |  |
| Nickel    | 0.45  | 0.010  | 0.5000 | 0 | 90.9 | 80 | 120 |  |  |  |
| Selenium  | 0.46  | 0.050  | 0.5000 | 0 | 92.5 | 80 | 120 |  |  |  |
| Silver    | 0.099 | 0.0050 | 0.1000 | 0 | 99.1 | 80 | 120 |  |  |  |
| Vanadium  | 0.49  | 0.050  | 0.5000 | 0 | 98.7 | 80 | 120 |  |  |  |
| Zinc      | 0.46  | 0.020  | 0.5000 | 0 | 91.8 | 80 | 120 |  |  |  |

|            |                 |                |           |             |                                     |          |           |      |          |      |
|------------|-----------------|----------------|-----------|-------------|-------------------------------------|----------|-----------|------|----------|------|
| Sample ID  | 1404B93-001BMS  | SampType:      | MS        | TestCode:   | EPA 6010B: Total Recoverable Metals |          |           |      |          |      |
| Client ID: | East Water Well | Batch ID:      | 13004     | RunNo:      | 18416                               |          |           |      |          |      |
| Prep Date: | 5/5/2014        | Analysis Date: | 5/6/2014  | SeqNo:      | 531893                              | Units:   | mg/L      |      |          |      |
| Analyte    | Result          | PQL            | SPK value | SPK Ref Val | %REC                                | LowLimit | HighLimit | %RPD | RPDLimit | Qual |

### Qualifiers:

- |                                                   |                                                      |
|---------------------------------------------------|------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    |
| E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               |
| O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
| R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
| S Spike Recovery outside accepted recovery limits |                                                      |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1404B93

19-May-14

**Client:** Navajo Refining Company

**Project:** Skinner List

| Sample ID  | 1404B93-001BMS  |        | SampType:      | MS          |      | TestCode: | EPA 6010B: Total Recoverable Metals |      |             |      |
|------------|-----------------|--------|----------------|-------------|------|-----------|-------------------------------------|------|-------------|------|
| Client ID: | East Water Well |        | Batch ID:      | 13004       |      | RunNo:    | 18416                               |      |             |      |
| Prep Date: | 5/5/2014        |        | Analysis Date: | 5/6/2014    |      | SeqNo:    | 531893                              |      | Units: mg/L |      |
| Analyte    | Result          | PQL    | SPK value      | SPK Ref Val | %REC | LowLimit  | HighLimit                           | %RPD | RPDLimit    | Qual |
| Antimony   | 0.50            | 0.050  | 0.5000         | 0           | 101  | 75        | 125                                 |      |             |      |
| Arsenic    | 0.50            | 0.020  | 0.5000         | 0           | 100  | 75        | 125                                 |      |             |      |
| Barium     | 0.57            | 0.020  | 0.5000         | 0.09863     | 94.9 | 75        | 125                                 |      |             |      |
| Beryllium  | 0.51            | 0.0030 | 0.5000         | 0           | 102  | 75        | 125                                 |      |             |      |
| Cadmium    | 0.47            | 0.0020 | 0.5000         | 0           | 94.7 | 75        | 125                                 |      |             |      |
| Chromium   | 0.49            | 0.0060 | 0.5000         | 0.01392     | 95.8 | 75        | 125                                 |      |             |      |
| Cobalt     | 0.45            | 0.0060 | 0.5000         | 0           | 90.3 | 75        | 125                                 |      |             |      |
| Copper     | 0.67            | 0.0060 | 0.5000         | 0.1799      | 98.0 | 75        | 125                                 |      |             |      |
| Lead       | 0.47            | 0.0050 | 0.5000         | 0.008010    | 92.5 | 75        | 125                                 |      |             |      |
| Nickel     | 0.45            | 0.010  | 0.5000         | 0           | 89.9 | 75        | 125                                 |      |             |      |
| Selenium   | 0.46            | 0.050  | 0.5000         | 0           | 92.0 | 75        | 125                                 |      |             |      |
| Silver     | 0.10            | 0.0050 | 0.1000         | 0           | 101  | 75        | 125                                 |      |             |      |
| Vanadium   | 0.53            | 0.050  | 0.5000         | 0.02683     | 100  | 75        | 125                                 |      |             |      |
| Zinc       | 0.56            | 0.020  | 0.5000         | 0.1073      | 90.5 | 75        | 125                                 |      |             |      |

| Sample ID  | 1404B93-001BMSD |        | SampType:      | MSD         |      | TestCode: | EPA 6010B: Total Recoverable Metals |        |             |      |
|------------|-----------------|--------|----------------|-------------|------|-----------|-------------------------------------|--------|-------------|------|
| Client ID: | East Water Well |        | Batch ID:      | 13004       |      | RunNo:    | 18416                               |        |             |      |
| Prep Date: | 5/5/2014        |        | Analysis Date: | 5/6/2014    |      | SeqNo:    | 531894                              |        | Units: mg/L |      |
| Analyte    | Result          | PQL    | SPK value      | SPK Ref Val | %REC | LowLimit  | HighLimit                           | %RPD   | RPDLimit    | Qual |
| Antimony   | 0.50            | 0.050  | 0.5000         | 0           | 101  | 75        | 125                                 | 0.171  | 20          |      |
| Arsenic    | 0.50            | 0.020  | 0.5000         | 0           | 99.5 | 75        | 125                                 | 0.845  | 20          |      |
| Barium     | 0.57            | 0.020  | 0.5000         | 0.09863     | 95.0 | 75        | 125                                 | 0.0314 | 20          |      |
| Beryllium  | 0.50            | 0.0030 | 0.5000         | 0           | 101  | 75        | 125                                 | 1.46   | 20          |      |
| Cadmium    | 0.47            | 0.0020 | 0.5000         | 0           | 94.1 | 75        | 125                                 | 0.576  | 20          |      |
| Chromium   | 0.49            | 0.0060 | 0.5000         | 0.01392     | 95.2 | 75        | 125                                 | 0.651  | 20          |      |
| Cobalt     | 0.45            | 0.0060 | 0.5000         | 0           | 89.7 | 75        | 125                                 | 0.616  | 20          |      |
| Copper     | 0.66            | 0.0060 | 0.5000         | 0.1799      | 96.8 | 75        | 125                                 | 0.867  | 20          |      |
| Lead       | 0.47            | 0.0050 | 0.5000         | 0.008010    | 92.2 | 75        | 125                                 | 0.375  | 20          |      |
| Nickel     | 0.45            | 0.010  | 0.5000         | 0           | 89.7 | 75        | 125                                 | 0.194  | 20          |      |
| Selenium   | 0.46            | 0.050  | 0.5000         | 0           | 92.3 | 75        | 125                                 | 0.278  | 20          |      |
| Silver     | 0.10            | 0.0050 | 0.1000         | 0           | 100  | 75        | 125                                 | 0.941  | 20          |      |
| Vanadium   | 0.52            | 0.050  | 0.5000         | 0.02683     | 99.5 | 75        | 125                                 | 0.714  | 20          |      |
| Zinc       | 0.56            | 0.020  | 0.5000         | 0.1073      | 90.5 | 75        | 125                                 | 0.0179 | 20          |      |

### Qualifiers:

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 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 O RSD is greater than RSDlimit  
 R RPD outside accepted recovery limits  
 S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit  
 P Sample pH greater than 2.  
 RL Reporting Detection Limit

**Client Name: NAVAJO REFINING CO**

**Work Order Number: 1404B93**

RcptNo: 1

Received by/date: CS 04/30/14

Logged By: **Celina Sessa** 4/30/2014 8:40:00 AM

Completed By: **Celina Sessa** 4/30/2014 9:53:31 AM

Reviewed By: [Signature] / CS 04/30/14

### Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? FedEx

**Log In**

- |                                                                                                |                                         |                                        |                                       |
|------------------------------------------------------------------------------------------------|-----------------------------------------|----------------------------------------|---------------------------------------|
| 4. Was an attempt made to cool the samples?                                                    | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | NA <input type="checkbox"/>           |
| 5. Were all samples received at a temperature of $>0^{\circ}\text{C}$ to $6.0^{\circ}\text{C}$ | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | NA <input type="checkbox"/>           |
| 6. Sample(s) in proper container(s)?                                                           | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                       |
| 7. Sufficient sample volume for indicated test(s)?                                             | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                       |
| 8. Are samples (except VOA and ONG) properly preserved?                                        | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                       |
| 9. Was preservative added to bottles?                                                          | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> | NA <input type="checkbox"/>           |
| 10. VOA vials have zero headspace?                                                             | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | No VOA Vials <input type="checkbox"/> |
| 11. Were any sample containers received broken?                                                | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> |                                       |
| 12. Does paperwork match bottle labels?<br>(Note discrepancies on chain of custody)            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                       |
| 13. Are matrices correctly identified on Chain of Custody?                                     | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                       |
| 14. Is it clear what analyses were requested?                                                  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                       |
| 15. Were all holding times able to be met?<br>(If no, notify customer for authorization.)      | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                       |
- # of preserved bottles checked for pH: 2

Adjusted? ☒

Checked by: \_\_\_\_\_

# of preserved bottles checked for pH: 2 or > 12 (unless noted)

Adjusted? no

Checked by: [Signature]

**Special Handling (if applicable)**

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

|                      |  |       |                                                                                                                               |
|----------------------|--|-------|-------------------------------------------------------------------------------------------------------------------------------|
| Person Notified:     |  | Date: |                                                                                                                               |
| By Whom:             |  | Via:  | <input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person |
| Regarding:           |  |       |                                                                                                                               |
| Client Instructions: |  |       |                                                                                                                               |

17. Additional remarks:

## 18. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|---------|-----------|-------------|---------|-----------|-----------|
| 1         | 1.0     | Good      | Yes         |         |           |           |





## HALL ENVIRONMENTAL ANALYSIS LABORATORY

[www.hallenvironmental.com](http://www.hallenvironmental.com)

4901 Hawkins NE - Albuquerque, NM 87109

**Tel. 505-345-3975      Fax 505-345-4107**

## Analysis Request

| Client: Navajo Refining Co., L.L.C.                           |           | X Standard <input checked="" type="checkbox"/> Rush <input type="checkbox"/> |                   |                      |                   |          |
|---------------------------------------------------------------|-----------|------------------------------------------------------------------------------|-------------------|----------------------|-------------------|----------|
| Mailing Address                                               |           | Project Name:                                                                |                   |                      |                   |          |
| PO Box 159                                                    |           | Skinner List-PO 171258                                                       |                   |                      |                   |          |
| Artesia, NM 88211-0159                                        |           | Project #:                                                                   |                   |                      |                   |          |
| Phone #: 575-748-5311                                         |           | Project Manager:                                                             |                   |                      |                   |          |
| email or Fax#: 575-746-5451                                   |           | Robert Combs                                                                 |                   |                      |                   |          |
| QA/QC Package:                                                |           | Sampler: Andres Sandoval                                                     |                   |                      |                   |          |
| X Standard <input type="checkbox"/> Level 4 (Full Validation) |           | On Ice: <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No  |                   |                      |                   |          |
| <input type="checkbox"/> Other _____                          |           | Sample Temperature: 100°                                                     |                   |                      |                   |          |
| <input type="checkbox"/> EDD (Type) _____                     |           | HEAL No. 1404893                                                             |                   |                      |                   |          |
| Date                                                          | Time      | Matrix                                                                       | Sample Request ID | Container Type and # | Preservative Type | HEAL No. |
| 4/29/14                                                       | 8:30 a.m. | liquid                                                                       | East Water Well   | 3-40 mL VOAs         | HCl               | -001     |
|                                                               |           | liquid                                                                       | East Water Well   | 2-1L amber glass     | neat              | -001     |
|                                                               |           | liquid                                                                       | East Water Well   | 500 mL plastic       | HNO3              | -001     |
|                                                               |           | liquid                                                                       | East Water Well   | 500 mL plastic       | NaOH              | -001     |
|                                                               |           | liquid                                                                       | Tk-1210           | 3-40 mL VOAs         | HCl               |          |
|                                                               |           | liquid                                                                       | Tk-1210           | 2-1L amber glass     | neat              |          |
|                                                               |           | liquid                                                                       | Tk-1210           | 500 mL plastic       | HNO3              |          |
|                                                               |           | liquid                                                                       | Tk-1210           | 500 mL plastic       | NaOH              |          |
|                                                               |           |                                                                              |                   |                      |                   |          |
|                                                               |           |                                                                              |                   |                      |                   |          |
|                                                               |           |                                                                              |                   |                      |                   |          |
| Date:                                                         | Time:     | Relinquished by:                                                             | Received by:      | Date                 | Time              |          |
| 4/29/14                                                       | 8:45      | [Signature]                                                                  | [Signature]       | 04/30/14             | 8:40              |          |



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

July 22, 2014

Robert Combs  
Navajo Refining Company  
P.O. Box 159  
Artesia, NM 88211-0159  
TEL: (575) 748-5311  
FAX (575) 746-5451

RE: Skinner List

OrderNo.: 1406B32

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 1 sample(s) on 6/25/2014 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1406B32**

Date Reported: 7/22/2014

**CLIENT:** Navajo Refining Company

**Client Sample ID:** East Water Well

**Project:** Skinner List

**Collection Date:** 6/24/2014 7:11:00 AM

**Lab ID:** 1406B32-001

**Matrix:** AQUEOUS

**Received Date:** 6/25/2014 8:45:00 AM

| Analyses                                   | Result | MDL      | RL      | Qual | Units | DF | Date Analyzed        | Batch ID |
|--------------------------------------------|--------|----------|---------|------|-------|----|----------------------|----------|
| <b>EPA METHOD 7470: MERCURY</b>            |        |          |         |      |       |    | Analyst: <b>TES</b>  |          |
| Mercury                                    | ND     | 0.000087 | 0.00020 |      | mg/L  | 1  | 7/1/2014 2:09:03 PM  | 13988    |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |        |          |         |      |       |    | Analyst: <b>ELS</b>  |          |
| Antimony                                   | ND     | 0.015    | 0.050   |      | mg/L  | 1  | 7/9/2014 1:37:23 PM  | 13986    |
| Arsenic                                    | ND     | 0.0093   | 0.020   |      | mg/L  | 1  | 7/9/2014 1:37:23 PM  | 13986    |
| Barium                                     | 0.097  | 0.00062  | 0.020   |      | mg/L  | 1  | 7/9/2014 1:37:23 PM  | 13986    |
| Beryllium                                  | ND     | 0.00035  | 0.0030  |      | mg/L  | 1  | 7/9/2014 1:37:23 PM  | 13986    |
| Cadmium                                    | ND     | 0.00063  | 0.0020  |      | mg/L  | 1  | 7/9/2014 1:37:23 PM  | 13986    |
| Chromium                                   | 0.013  | 0.0017   | 0.0060  |      | mg/L  | 1  | 7/9/2014 1:37:23 PM  | 13986    |
| Cobalt                                     | ND     | 0.0015   | 0.0060  |      | mg/L  | 1  | 7/9/2014 1:37:23 PM  | 13986    |
| Copper                                     | 0.018  | 0.0046   | 0.0060  |      | mg/L  | 1  | 7/9/2014 1:37:23 PM  | 13986    |
| Lead                                       | ND     | 0.0048   | 0.0050  |      | mg/L  | 1  | 7/9/2014 1:37:23 PM  | 13986    |
| Nickel                                     | ND     | 0.0019   | 0.010   |      | mg/L  | 1  | 7/9/2014 1:37:23 PM  | 13986    |
| Selenium                                   | ND     | 0.022    | 0.050   |      | mg/L  | 1  | 7/9/2014 1:37:23 PM  | 13986    |
| Silver                                     | ND     | 0.00052  | 0.0050  |      | mg/L  | 1  | 7/9/2014 1:37:23 PM  | 13986    |
| Vanadium                                   | 0.026  | 0.0055   | 0.050   | J    | mg/L  | 1  | 7/9/2014 1:37:23 PM  | 13986    |
| Zinc                                       | 0.014  | 0.0049   | 0.020   | J    | mg/L  | 1  | 7/9/2014 1:37:23 PM  | 13986    |
| <b>EPA METHOD 8260B: VOLATILES</b>         |        |          |         |      |       |    | Analyst: <b>RAA</b>  |          |
| Benzene                                    | ND     | 0.46     | 1.0     |      | µg/L  | 1  | 6/27/2014 6:09:35 PM | R19552   |
| Toluene                                    | ND     | 0.44     | 1.0     |      | µg/L  | 1  | 6/27/2014 6:09:35 PM | R19552   |
| Ethylbenzene                               | ND     | 0.45     | 1.0     |      | µg/L  | 1  | 6/27/2014 6:09:35 PM | R19552   |
| Methyl tert-butyl ether (MTBE)             | ND     | 0.77     | 1.0     |      | µg/L  | 1  | 6/27/2014 6:09:35 PM | R19552   |
| 1,2-Dichloroethane (EDC)                   | ND     | 0.33     | 1.0     |      | µg/L  | 1  | 6/27/2014 6:09:35 PM | R19552   |
| 1,2-Dibromoethane (EDB)                    | ND     | 0.45     | 1.0     |      | µg/L  | 1  | 6/27/2014 6:09:35 PM | R19552   |
| 2-Butanone                                 | ND     | 1.4      | 10      |      | µg/L  | 1  | 6/27/2014 6:09:35 PM | R19552   |
| Carbon disulfide                           | ND     | 0.80     | 10      |      | µg/L  | 1  | 6/27/2014 6:09:35 PM | R19552   |
| Chlorobenzene                              | ND     | 0.49     | 1.0     |      | µg/L  | 1  | 6/27/2014 6:09:35 PM | R19552   |
| Chloroform                                 | ND     | 0.47     | 1.0     |      | µg/L  | 1  | 6/27/2014 6:09:35 PM | R19552   |
| 1,1-Dichloroethane                         | ND     | 0.33     | 1.0     |      | µg/L  | 1  | 6/27/2014 6:09:35 PM | R19552   |
| Styrene                                    | ND     | 0.58     | 1.0     |      | µg/L  | 1  | 6/27/2014 6:09:35 PM | R19552   |
| Tetrachloroethene (PCE)                    | ND     | 0.49     | 1.0     |      | µg/L  | 1  | 6/27/2014 6:09:35 PM | R19552   |
| 1,1,1-Trichloroethane                      | ND     | 0.40     | 1.0     |      | µg/L  | 1  | 6/27/2014 6:09:35 PM | R19552   |
| Trichloroethene (TCE)                      | ND     | 0.42     | 1.0     |      | µg/L  | 1  | 6/27/2014 6:09:35 PM | R19552   |
| Xylenes, Total                             | ND     | 1.4      | 1.5     |      | µg/L  | 1  | 6/27/2014 6:09:35 PM | R19552   |
| 1,4-Dioxane                                | ND     | 10       | 10      |      | µg/L  | 1  | 6/27/2014 6:09:35 PM | R19552   |
| Surr: 1,2-Dichloroethane-d4                | 91.3   | 0        | 70-130  |      | %REC  | 1  | 6/27/2014 6:09:35 PM | R19552   |
| Surr: 4-Bromofluorobenzene                 | 92.7   | 0        | 70-130  |      | %REC  | 1  | 6/27/2014 6:09:35 PM | R19552   |
| Surr: Dibromofluoromethane                 | 94.8   | 0        | 70-130  |      | %REC  | 1  | 6/27/2014 6:09:35 PM | R19552   |
| Surr: Toluene-d8                           | 92.6   | 0        | 70-130  |      | %REC  | 1  | 6/27/2014 6:09:35 PM | R19552   |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |   |                                                 |    |                                                    |
|--------------------|---|-------------------------------------------------|----|----------------------------------------------------|
| <b>Qualifiers:</b> | * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    |
|                    | E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |
|                    | J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |
|                    | O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |
|                    | R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |
|                    | S | Spike Recovery outside accepted recovery limits |    |                                                    |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1406B32**

Date Reported: 7/22/2014

**CLIENT:** Navajo Refining Company

**Client Sample ID:** East Water Well

**Project:** Skinner List

**Collection Date:** 6/24/2014 7:11:00 AM

**Lab ID:** 1406B32-001

**Matrix:** AQUEOUS

**Received Date:** 6/25/2014 8:45:00 AM

| Analyses                        | Result | MDL  | RL     | Qual | Units | DF | Date Analyzed       | Batch ID |
|---------------------------------|--------|------|--------|------|-------|----|---------------------|----------|
| <b>EPA 8270D: SEMIVOLATILES</b> |        |      |        |      |       |    | Analyst: <b>SUB</b> |          |
| Dibenz(a,h)acridine             | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| Benzenethiol                    | ND     | 0.50 | 5.0    |      | µg/L  | 1  | 7/1/2014            | R20053   |
| Indene                          | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| 1,2-Dichlorobenzene             | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| 1,3-Dichlorobenzene             | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| 1,4-Dichlorobenzene             | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| 1-Methylnaphthalene             | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| 2,4-Dimethylphenol              | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| 2,4-Dinitrophenol               | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| 2-Methylphenol                  | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| 3+4-Methylphenol                | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| 4-Nitrophenol                   | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| Acenaphthylene                  | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| Anthracene                      | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| Benz(a)anthracene               | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| Benzo(a)pyrene                  | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| Benzo(b)fluoranthene            | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| Benzo(k)fluoranthene            | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| Bis(2-ethylhexyl)phthalate      | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| Chrysene                        | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| Dibenz(a,h)anthracene           | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| Diethyl phthalate               | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| Dimethyl phthalate              | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| Di-n-butyl phthalate            | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| Fluoranthene                    | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| Fluorene                        | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| Indeno(1,2,3-cd)pyrene          | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| Naphthalene                     | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| Phenanthrene                    | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| Phenol                          | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| Pyrene                          | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| Pyridine                        | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| Quinoline                       | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 7/1/2014            | R20053   |
| Surr: 2,4,6-Tribromophenol      | 82.4   | 0    | 53-122 |      | %REC  | 1  | 7/1/2014            | R20053   |
| Surr: 2-Fluorobiphenyl          | 95.2   | 0    | 12-116 |      | %REC  | 1  | 7/1/2014            | R20053   |
| Surr: 2-Fluorophenol            | 83.6   | 0    | 10-139 |      | %REC  | 1  | 7/1/2014            | R20053   |
| Surr: Nitrobenzene-d5           | 106    | 0    | 68-118 |      | %REC  | 1  | 7/1/2014            | R20053   |
| Surr: Phenol-d5                 | 91.5   | 0    | 28-154 |      | %REC  | 1  | 7/1/2014            | R20053   |
| Surr: Terphenyl-d14             | 95.4   | 0    | 52-144 |      | %REC  | 1  | 7/1/2014            | R20053   |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |   |                                                 |    |                                                    |
|--------------------|---|-------------------------------------------------|----|----------------------------------------------------|
| <b>Qualifiers:</b> | * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    |
|                    | E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |
|                    | J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |
|                    | O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |
|                    | R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |
|                    | S | Spike Recovery outside accepted recovery limits |    |                                                    |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1406B32**

Date Reported: 7/22/2014

**CLIENT:** Navajo Refining Company

**Client Sample ID:** East Water Well

**Project:** Skinner List

**Collection Date:** 6/24/2014 7:11:00 AM

**Lab ID:** 1406B32-001

**Matrix:** AQUEOUS

**Received Date:** 6/25/2014 8:45:00 AM

| Analyses                               | Result | MDL    | RL     | Qual | Units | DF | Date Analyzed       | Batch ID |
|----------------------------------------|--------|--------|--------|------|-------|----|---------------------|----------|
| <b>EPA 335.4: TOTAL CYANIDE SUBBED</b> |        |        |        |      |       |    | Analyst: <b>SUB</b> |          |
| Cyanide                                | ND     | 0.0100 | 0.0100 |      | mg/L  | 1  | 6/30/2014           | R20054   |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |   |                                                 |    |                                                    |
|--------------------|---|-------------------------------------------------|----|----------------------------------------------------|
| <b>Qualifiers:</b> | * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    |
|                    | E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |
|                    | J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |
|                    | O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |
|                    | R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |
|                    | S | Spike Recovery outside accepted recovery limits |    |                                                    |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1406B32

22-Jul-14

**Client:** Navajo Refining Company

**Project:** Skinner List

| Sample ID <b>5mL-rb</b>     | SampType: <b>MBLK</b>           |     |           | TestCode: <b>EPA Method 8260B: VOLATILES</b> |      |                    |           |      |          |      |
|-----------------------------|---------------------------------|-----|-----------|----------------------------------------------|------|--------------------|-----------|------|----------|------|
| Client ID: <b>PBW</b>       | Batch ID: <b>R19514</b>         |     |           | RunNo: <b>19514</b>                          |      |                    |           |      |          |      |
| Prep Date:                  | Analysis Date: <b>6/25/2014</b> |     |           | SeqNo: <b>564801</b>                         |      | Units: <b>%REC</b> |           |      |          |      |
| Analyte                     | Result                          | PQL | SPK value | SPK Ref Val                                  | %REC | LowLimit           | HighLimit | %RPD | RPDLimit | Qual |
| Surr: 1,2-Dichloroethane-d4 | 9.4                             |     | 10.00     |                                              | 93.9 | 70                 | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 9.4                             |     | 10.00     |                                              | 94.3 | 70                 | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 9.3                             |     | 10.00     |                                              | 93.0 | 70                 | 130       |      |          |      |
| Surr: Toluene-d8            | 9.0                             |     | 10.00     |                                              | 90.0 | 70                 | 130       |      |          |      |

| Sample ID <b>100ng lcs</b>  | SampType: <b>LCS</b>            |     |           | TestCode: <b>EPA Method 8260B: VOLATILES</b> |      |                    |           |      |          |      |
|-----------------------------|---------------------------------|-----|-----------|----------------------------------------------|------|--------------------|-----------|------|----------|------|
| Client ID: <b>LCSW</b>      | Batch ID: <b>R19514</b>         |     |           | RunNo: <b>19514</b>                          |      |                    |           |      |          |      |
| Prep Date:                  | Analysis Date: <b>6/25/2014</b> |     |           | SeqNo: <b>564815</b>                         |      | Units: <b>%REC</b> |           |      |          |      |
| Analyte                     | Result                          | PQL | SPK value | SPK Ref Val                                  | %REC | LowLimit           | HighLimit | %RPD | RPDLimit | Qual |
| Surr: 1,2-Dichloroethane-d4 | 9.3                             |     | 10.00     |                                              | 92.9 | 70                 | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 9.3                             |     | 10.00     |                                              | 92.5 | 70                 | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 9.6                             |     | 10.00     |                                              | 96.2 | 70                 | 130       |      |          |      |
| Surr: Toluene-d8            | 8.8                             |     | 10.00     |                                              | 87.6 | 70                 | 130       |      |          |      |

| Sample ID <b>b3</b>         | SampType: <b>MBLK</b>           |     |           | TestCode: <b>EPA Method 8260B: VOLATILES</b> |      |                    |           |      |          |      |
|-----------------------------|---------------------------------|-----|-----------|----------------------------------------------|------|--------------------|-----------|------|----------|------|
| Client ID: <b>PBW</b>       | Batch ID: <b>R19514</b>         |     |           | RunNo: <b>19514</b>                          |      |                    |           |      |          |      |
| Prep Date:                  | Analysis Date: <b>6/25/2014</b> |     |           | SeqNo: <b>564830</b>                         |      | Units: <b>%REC</b> |           |      |          |      |
| Analyte                     | Result                          | PQL | SPK value | SPK Ref Val                                  | %REC | LowLimit           | HighLimit | %RPD | RPDLimit | Qual |
| Surr: 1,2-Dichloroethane-d4 | 9.1                             |     | 10.00     |                                              | 90.9 | 70                 | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 9.3                             |     | 10.00     |                                              | 93.0 | 70                 | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 9.6                             |     | 10.00     |                                              | 95.9 | 70                 | 130       |      |          |      |
| Surr: Toluene-d8            | 9.4                             |     | 10.00     |                                              | 93.7 | 70                 | 130       |      |          |      |

| Sample ID <b>100ng lcs2</b> | SampType: <b>LCS</b>            |     |           | TestCode: <b>EPA Method 8260B: VOLATILES</b> |      |                    |           |      |          |      |
|-----------------------------|---------------------------------|-----|-----------|----------------------------------------------|------|--------------------|-----------|------|----------|------|
| Client ID: <b>LCSW</b>      | Batch ID: <b>R19514</b>         |     |           | RunNo: <b>19514</b>                          |      |                    |           |      |          |      |
| Prep Date:                  | Analysis Date: <b>6/25/2014</b> |     |           | SeqNo: <b>564832</b>                         |      | Units: <b>%REC</b> |           |      |          |      |
| Analyte                     | Result                          | PQL | SPK value | SPK Ref Val                                  | %REC | LowLimit           | HighLimit | %RPD | RPDLimit | Qual |
| Surr: 1,2-Dichloroethane-d4 | 9.4                             |     | 10.00     |                                              | 93.7 | 70                 | 130       |      |          |      |
| Surr: 4-Bromofluorobenzene  | 9.3                             |     | 10.00     |                                              | 93.5 | 70                 | 130       |      |          |      |
| Surr: Dibromofluoromethane  | 9.6                             |     | 10.00     |                                              | 96.3 | 70                 | 130       |      |          |      |
| Surr: Toluene-d8            | 9.1                             |     | 10.00     |                                              | 91.1 | 70                 | 130       |      |          |      |

| Sample ID <b>5mL-rb</b> | SampType: <b>MBLK</b>           |     |           | TestCode: <b>EPA Method 8260B: VOLATILES</b> |      |                    |           |      |          |      |
|-------------------------|---------------------------------|-----|-----------|----------------------------------------------|------|--------------------|-----------|------|----------|------|
| Client ID: <b>PBW</b>   | Batch ID: <b>R19552</b>         |     |           | RunNo: <b>19552</b>                          |      |                    |           |      |          |      |
| Prep Date:              | Analysis Date: <b>6/27/2014</b> |     |           | SeqNo: <b>566357</b>                         |      | Units: <b>µg/L</b> |           |      |          |      |
| Analyte                 | Result                          | PQL | SPK value | SPK Ref Val                                  | %REC | LowLimit           | HighLimit | %RPD | RPDLimit | Qual |

### Qualifiers:

- |                                                   |                                                      |
|---------------------------------------------------|------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    |
| E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               |
| O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
| R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
| S Spike Recovery outside accepted recovery limits |                                                      |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1406B32

22-Jul-14

Client: Navajo Refining Company

Project: Skinner List

|                                |        |                          |           |             |                                       |             |           |      |          |      |
|--------------------------------|--------|--------------------------|-----------|-------------|---------------------------------------|-------------|-----------|------|----------|------|
| Sample ID                      | 5mL-rb | SampType: MBLK           |           |             | TestCode: EPA Method 8260B: VOLATILES |             |           |      |          |      |
| Client ID:                     | PBW    | Batch ID: R19552         |           |             | RunNo: 19552                          |             |           |      |          |      |
| Prep Date:                     |        | Analysis Date: 6/27/2014 |           |             | SeqNo: 566357                         | Units: µg/L |           |      |          |      |
| Analyte                        | Result | PQL                      | SPK value | SPK Ref Val | %REC                                  | LowLimit    | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                        | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Toluene                        | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Ethylbenzene                   | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Methyl tert-butyl ether (MTBE) | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,2,4-Trimethylbenzene         | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,3,5-Trimethylbenzene         | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,2-Dichloroethane (EDC)       | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,2-Dibromoethane (EDB)        | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Naphthalene                    | ND     | 2.0                      |           |             |                                       |             |           |      |          |      |
| 1-Methylnaphthalene            | ND     | 4.0                      |           |             |                                       |             |           |      |          |      |
| 2-Methylnaphthalene            | ND     | 4.0                      |           |             |                                       |             |           |      |          |      |
| Acetone                        | ND     | 10                       |           |             |                                       |             |           |      |          |      |
| Bromobenzene                   | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Bromodichloromethane           | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Bromoform                      | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Bromomethane                   | ND     | 3.0                      |           |             |                                       |             |           |      |          |      |
| 2-Butanone                     | ND     | 10                       |           |             |                                       |             |           |      |          |      |
| Carbon disulfide               | ND     | 10                       |           |             |                                       |             |           |      |          |      |
| Carbon Tetrachloride           | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Chlorobenzene                  | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Chloroethane                   | ND     | 2.0                      |           |             |                                       |             |           |      |          |      |
| Chloroform                     | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Chloromethane                  | ND     | 3.0                      |           |             |                                       |             |           |      |          |      |
| 2-Chlorotoluene                | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 4-Chlorotoluene                | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| cis-1,2-DCE                    | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| cis-1,3-Dichloropropene        | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,2-Dibromo-3-chloropropane    | ND     | 2.0                      |           |             |                                       |             |           |      |          |      |
| Dibromochloromethane           | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Dibromomethane                 | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,2-Dichlorobenzene            | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,3-Dichlorobenzene            | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,4-Dichlorobenzene            | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Dichlorodifluoromethane        | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,1-Dichloroethane             | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,1-Dichloroethene             | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,2-Dichloropropane            | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,3-Dichloropropane            | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 2,2-Dichloropropane            | ND     | 2.0                      |           |             |                                       |             |           |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1406B32

22-Jul-14

Client: Navajo Refining Company

Project: Skinner List

|                             |        |                          |           |             |                                       |          |             |      |          |      |
|-----------------------------|--------|--------------------------|-----------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 5mL-rb | SampType: MBLK           |           |             | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID:                  | PBW    | Batch ID: R19552         |           |             | RunNo: 19552                          |          |             |      |          |      |
| Prep Date:                  |        | Analysis Date: 6/27/2014 |           |             | SeqNo: 566357                         |          | Units: µg/L |      |          |      |
| Analyte                     | Result | PQL                      | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| 1,1-Dichloropropene         | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Hexachlorobutadiene         | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 2-Hexanone                  | ND     | 10                       |           |             |                                       |          |             |      |          |      |
| Isopropylbenzene            | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 4-Isopropyltoluene          | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 4-Methyl-2-pentanone        | ND     | 10                       |           |             |                                       |          |             |      |          |      |
| Methylene Chloride          | ND     | 3.0                      |           |             |                                       |          |             |      |          |      |
| n-Butylbenzene              | ND     | 3.0                      |           |             |                                       |          |             |      |          |      |
| n-Propylbenzene             | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| sec-Butylbenzene            | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Styrene                     | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| tert-Butylbenzene           | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,1,1,2-Tetrachloroethane   | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,1,2,2-Tetrachloroethane   | ND     | 2.0                      |           |             |                                       |          |             |      |          |      |
| Tetrachloroethene (PCE)     | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| trans-1,2-DCE               | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| trans-1,3-Dichloropropene   | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,2,3-Trichlorobenzene      | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,2,4-Trichlorobenzene      | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,1,1-Trichloroethane       | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,1,2-Trichloroethane       | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Trichloroethene (TCE)       | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Trichlorofluoromethane      | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,2,3-Trichloropropane      | ND     | 2.0                      |           |             |                                       |          |             |      |          |      |
| Vinyl chloride              | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Xylenes, Total              | ND     | 1.5                      |           |             |                                       |          |             |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 9.0    |                          | 10.00     |             | 90.1                                  | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 9.2    |                          | 10.00     |             | 91.8                                  | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 9.2    |                          | 10.00     |             | 91.8                                  | 70       | 130         |      |          |      |
| Surr: Toluene-d8            | 9.1    |                          | 10.00     |             | 90.6                                  | 70       | 130         |      |          |      |

|              |            |                          |           |             |                                       |          |             |      |          |      |
|--------------|------------|--------------------------|-----------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID    | 100ng lcs4 | SampType: LCS4           |           |             | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID:   | BatchQC    | Batch ID: R19552         |           |             | RunNo: 19552                          |          |             |      |          |      |
| Prep Date:   |            | Analysis Date: 6/27/2014 |           |             | SeqNo: 566360                         |          | Units: µg/L |      |          |      |
| Analyte      | Result     | PQL                      | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene      | 22         | 1.0                      | 20.00     | 0           | 111                                   | 70       | 130         |      |          |      |
| Toluene      | 22         | 1.0                      | 20.00     | 0           | 110                                   | 80       | 120         |      |          |      |
| Ethylbenzene | 22         | 1.0                      | 20.00     | 0           | 110                                   | 80       | 120         |      |          |      |

### Qualifiers:

|   |                                                 |    |                                                    |
|---|-------------------------------------------------|----|----------------------------------------------------|
| * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    |
| E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |
| J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |
| O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |
| R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |
| S | Spike Recovery outside accepted recovery limits |    |                                                    |



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1406B32

22-Jul-14

**Client:** Navajo Refining Company

**Project:** Skinner List

| Sample ID <b>100ng lcs4</b>    | SampType: <b>LCS4</b>           |     |           | TestCode: <b>EPA Method 8260B: VOLATILES</b> |      |                    |           |      |          |      |
|--------------------------------|---------------------------------|-----|-----------|----------------------------------------------|------|--------------------|-----------|------|----------|------|
| Client ID: <b>BatchQC</b>      | Batch ID: <b>R19552</b>         |     |           | RunNo: <b>19552</b>                          |      |                    |           |      |          |      |
| Prep Date:                     | Analysis Date: <b>6/27/2014</b> |     |           | SeqNo: <b>566360</b>                         |      | Units: <b>µg/L</b> |           |      |          |      |
| Analyte                        | Result                          | PQL | SPK value | SPK Ref Val                                  | %REC | LowLimit           | HighLimit | %RPD | RPDLimit | Qual |
| Methyl tert-butyl ether (MTBE) | 45                              | 1.0 | 40.00     | 0                                            | 113  | 70                 | 130       |      |          |      |
| 1,2,4-Trimethylbenzene         | 21                              | 1.0 | 20.00     | 0                                            | 106  | 70                 | 130       |      |          |      |
| 1,3,5-Trimethylbenzene         | 21                              | 1.0 | 20.00     | 0                                            | 104  | 70                 | 130       |      |          |      |
| 1,2-Dichloroethane (EDC)       | 23                              | 1.0 | 20.00     | 0                                            | 113  | 70                 | 130       |      |          |      |
| 1,2-Dibromoethane (EDB)        | 22                              | 1.0 | 20.00     | 0                                            | 111  | 70                 | 130       |      |          |      |
| Naphthalene                    | 19                              | 2.0 | 20.00     | 0                                            | 96.6 | 70                 | 130       |      |          |      |
| 1-Methylnaphthalene            | 18                              | 4.0 | 20.00     | 0                                            | 92.3 | 60                 | 140       |      |          |      |
| 2-Methylnaphthalene            | 19                              | 4.0 | 20.00     | 0                                            | 93.0 | 60                 | 140       |      |          |      |
| Acetone                        | 75                              | 10  | 40.00     | 0                                            | 189  | 60                 | 140       |      |          | S    |
| Bromobenzene                   | 22                              | 1.0 | 20.00     | 0                                            | 112  | 70                 | 130       |      |          |      |
| Bromodichloromethane           | 22                              | 1.0 | 20.00     | 0                                            | 110  | 70                 | 130       |      |          |      |
| Bromoform                      | 19                              | 1.0 | 20.00     | 0                                            | 92.8 | 64.1               | 132       |      |          |      |
| Bromomethane                   | 30                              | 3.0 | 20.00     | 0                                            | 151  | 61.5               | 134       |      |          | S    |
| 2-Butanone                     | 53                              | 10  | 40.00     | 0                                            | 133  | 60                 | 140       |      |          |      |
| Carbon disulfide               | 45                              | 10  | 40.00     | 0                                            | 113  | 60                 | 140       |      |          |      |
| Carbon Tetrachloride           | 22                              | 1.0 | 20.00     | 0                                            | 110  | 70                 | 130       |      |          |      |
| Chlorobenzene                  | 22                              | 1.0 | 20.00     | 0                                            | 110  | 70                 | 130       |      |          |      |
| Chloroethane                   | 21                              | 2.0 | 20.00     | 0                                            | 104  | 70                 | 130       |      |          |      |
| Chloroform                     | 22                              | 1.0 | 20.00     | 0                                            | 110  | 75.6               | 123       |      |          |      |
| Chloromethane                  | 26                              | 3.0 | 20.00     | 0                                            | 130  | 53                 | 140       |      |          |      |
| 2-Chlorotoluene                | 22                              | 1.0 | 20.00     | 0                                            | 109  | 70                 | 130       |      |          |      |
| 4-Chlorotoluene                | 20                              | 1.0 | 20.00     | 0                                            | 101  | 70                 | 130       |      |          |      |
| cis-1,2-DCE                    | 22                              | 1.0 | 20.00     | 0                                            | 110  | 70                 | 130       |      |          |      |
| cis-1,3-Dichloropropene        | 20                              | 1.0 | 20.00     | 0                                            | 99.5 | 70                 | 130       |      |          |      |
| 1,2-Dibromo-3-chloropropane    | 20                              | 2.0 | 20.00     | 0                                            | 102  | 60.7               | 131       |      |          |      |
| Dibromochloromethane           | 23                              | 1.0 | 20.00     | 0                                            | 115  | 70                 | 130       |      |          |      |
| Dibromomethane                 | 22                              | 1.0 | 20.00     | 0                                            | 108  | 70                 | 130       |      |          |      |
| 1,2-Dichlorobenzene            | 21                              | 1.0 | 20.00     | 0                                            | 104  | 70                 | 130       |      |          |      |
| 1,3-Dichlorobenzene            | 22                              | 1.0 | 20.00     | 0                                            | 108  | 70                 | 130       |      |          |      |
| 1,4-Dichlorobenzene            | 21                              | 1.0 | 20.00     | 0                                            | 104  | 70                 | 130       |      |          |      |
| Dichlorodifluoromethane        | 24                              | 1.0 | 20.00     | 0                                            | 122  | 68                 | 142       |      |          |      |
| 1,1-Dichloroethane             | 22                              | 1.0 | 20.00     | 0                                            | 110  | 70                 | 130       |      |          |      |
| 1,1-Dichloroethene             | 22                              | 1.0 | 20.00     | 0                                            | 112  | 78.1               | 129       |      |          |      |
| 1,2-Dichloropropane            | 22                              | 1.0 | 20.00     | 0                                            | 112  | 80                 | 120       |      |          |      |
| 1,3-Dichloropropane            | 22                              | 1.0 | 20.00     | 0                                            | 108  | 70                 | 130       |      |          |      |
| 2,2-Dichloropropane            | 23                              | 2.0 | 20.00     | 0                                            | 116  | 70                 | 130       |      |          |      |
| 1,1-Dichloropropene            | 23                              | 1.0 | 20.00     | 0                                            | 114  | 70                 | 130       |      |          |      |
| Hexachlorobutadiene            | 20                              | 1.0 | 20.00     | 0                                            | 97.7 | 62.9               | 136       |      |          |      |
| 2-Hexanone                     | 51                              | 10  | 40.00     | 0                                            | 127  | 60                 | 140       |      |          |      |

### Qualifiers:

|                                                   |                                                      |
|---------------------------------------------------|------------------------------------------------------|
| * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    |
| E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |
| J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               |
| O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
| R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
| S Spike Recovery outside accepted recovery limits |                                                      |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1406B32

22-Jul-14

**Client:** Navajo Refining Company

**Project:** Skinner List

|                             |                          |                  |           |               |                                       |          |             |      |          |      |
|-----------------------------|--------------------------|------------------|-----------|---------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 100ng lcs4               | SampType: LCS4   |           |               | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID:                  | BatchQC                  | Batch ID: R19552 |           |               | RunNo: 19552                          |          |             |      |          |      |
| Prep Date:                  | Analysis Date: 6/27/2014 |                  |           | SeqNo: 566360 |                                       |          | Units: µg/L |      |          |      |
| Analyte                     | Result                   | PQL              | SPK value | SPK Ref Val   | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Isopropylbenzene            | 22                       | 1.0              | 20.00     | 0             | 109                                   | 70       | 130         |      |          |      |
| 4-Isopropyltoluene          | 21                       | 1.0              | 20.00     | 0             | 107                                   | 70       | 130         |      |          |      |
| 4-Methyl-2-pentanone        | 44                       | 10               | 40.00     | 0             | 109                                   | 60       | 140         |      |          |      |
| Methylene Chloride          | 24                       | 3.0              | 20.00     | 0             | 118                                   | 70       | 130         |      |          |      |
| n-Butylbenzene              | 20                       | 3.0              | 20.00     | 0             | 100                                   | 70       | 130         |      |          |      |
| n-Propylbenzene             | 20                       | 1.0              | 20.00     | 0             | 101                                   | 70       | 130         |      |          |      |
| sec-Butylbenzene            | 19                       | 1.0              | 20.00     | 0             | 96.8                                  | 70       | 130         |      |          |      |
| Styrene                     | 22                       | 1.0              | 20.00     | 0             | 109                                   | 70       | 130         |      |          |      |
| tert-Butylbenzene           | 22                       | 1.0              | 20.00     | 0             | 108                                   | 70       | 130         |      |          |      |
| 1,1,1,2-Tetrachloroethane   | 22                       | 1.0              | 20.00     | 0             | 109                                   | 70       | 130         |      |          |      |
| 1,1,2,2-Tetrachloroethane   | 21                       | 2.0              | 20.00     | 0             | 104                                   | 67.3     | 134         |      |          |      |
| Tetrachloroethene (PCE)     | 22                       | 1.0              | 20.00     | 0             | 112                                   | 70       | 130         |      |          |      |
| trans-1,2-DCE               | 22                       | 1.0              | 20.00     | 0             | 110                                   | 70       | 130         |      |          |      |
| trans-1,3-Dichloropropene   | 22                       | 1.0              | 20.00     | 0             | 108                                   | 70       | 130         |      |          |      |
| 1,2,3-Trichlorobenzene      | 21                       | 1.0              | 20.00     | 0             | 105                                   | 66.7     | 132         |      |          |      |
| 1,2,4-Trichlorobenzene      | 20                       | 1.0              | 20.00     | 0             | 102                                   | 60.4     | 130         |      |          |      |
| 1,1,1-Trichloroethane       | 23                       | 1.0              | 20.00     | 0             | 113                                   | 70       | 130         |      |          |      |
| 1,1,2-Trichloroethane       | 21                       | 1.0              | 20.00     | 0             | 107                                   | 70       | 130         |      |          |      |
| Trichloroethene (TCE)       | 23                       | 1.0              | 20.00     | 0             | 113                                   | 70       | 130         |      |          |      |
| Trichlorofluoromethane      | 22                       | 1.0              | 20.00     | 0             | 111                                   | 70       | 130         |      |          |      |
| 1,2,3-Trichloropropane      | 21                       | 2.0              | 20.00     | 0             | 105                                   | 65.2     | 132         |      |          |      |
| Vinyl chloride              | 23                       | 1.0              | 20.00     | 0             | 115                                   | 76.5     | 131         |      |          |      |
| Xylenes, Total              | 65                       | 1.5              | 60.00     | 0             | 108                                   | 70       | 130         |      |          |      |
| 1,4-Dioxane                 | 50                       | 10               | 40.00     | 0             | 125                                   | 60       | 140         |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 9.8                      |                  | 10.00     |               | 97.5                                  | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 9.0                      |                  | 10.00     |               | 90.2                                  | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 9.5                      |                  | 10.00     |               | 95.4                                  | 70       | 130         |      |          |      |
| Surr: Toluene-d8            | 9.3                      |                  | 10.00     |               | 93.1                                  | 70       | 130         |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
 E Value above quantitation range  
 J Analyte detected below quantitation limits  
 O RSD is greater than RSDlimit  
 R RPD outside accepted recovery limits  
 S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
 H Holding times for preparation or analysis exceeded  
 ND Not Detected at the Reporting Limit  
 P Sample pH greater than 2.  
 RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1406B32

22-Jul-14

Client: Navajo Refining Company

Project: Skinner List

|                            |                  |      |                                |             |                                           |          |                    |      |          |      |
|----------------------------|------------------|------|--------------------------------|-------------|-------------------------------------------|----------|--------------------|------|----------|------|
| Sample ID                  | <b>MB-R20053</b> |      | SampType: <b>MBLK</b>          |             | TestCode: <b>EPA 8270D: Semivolatiles</b> |          |                    |      |          |      |
| Client ID:                 | <b>PBW</b>       |      | Batch ID: <b>R20053</b>        |             | RunNo: <b>20053</b>                       |          |                    |      |          |      |
| Prep Date:                 |                  |      | Analysis Date: <b>7/1/2014</b> |             | SeqNo: <b>582890</b>                      |          | Units: <b>µg/L</b> |      |          |      |
| Analyte                    | Result           | PQL  | SPK value                      | SPK Ref Val | %REC                                      | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| 1,2-Dichlorobenzene        | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| 1,3-Dichlorobenzene        | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| 1,4-Dichlorobenzene        | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| 1-Methylnaphthalene        | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| 2,4-Dimethylphenol         | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| 2,4-Dinitrophenol          | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| 2-Methylphenol             | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| 3+4-Methylphenol           | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| 4-Nitrophenol              | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Acenaphthylene             | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Anthracene                 | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Benz(a)anthracene          | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Benzo(a)pyrene             | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Benzo(b)fluoranthene       | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Benzo(k)fluoranthene       | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Bis(2-ethylhexyl)phthalate | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Chrysene                   | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Dibenz(a,h)anthracene      | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Diethyl phthalate          | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Dimethyl phthalate         | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Di-n-butyl phthalate       | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Fluoranthene               | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Fluorene                   | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Indeno(1,2,3-cd)pyrene     | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Naphthalene                | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Phenanthrene               | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Phenol                     | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Pyrene                     | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |
| Pyridine                   | ND               | 0.50 |                                |             |                                           |          |                    |      |          |      |

|                            |                   |     |                                |             |                                           |          |                    |      |          |      |
|----------------------------|-------------------|-----|--------------------------------|-------------|-------------------------------------------|----------|--------------------|------|----------|------|
| Sample ID                  | <b>LCS-R20053</b> |     | SampType: <b>LCS</b>           |             | TestCode: <b>EPA 8270D: Semivolatiles</b> |          |                    |      |          |      |
| Client ID:                 | <b>LCSW</b>       |     | Batch ID: <b>R20053</b>        |             | RunNo: <b>20053</b>                       |          |                    |      |          |      |
| Prep Date:                 |                   |     | Analysis Date: <b>7/1/2014</b> |             | SeqNo: <b>582891</b>                      |          | Units: <b>µg/L</b> |      |          |      |
| Analyte                    | Result            | PQL | SPK value                      | SPK Ref Val | %REC                                      | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| 1,4-Dichlorobenzene        | 4.3               |     | 5.000                          | 0           | 85.2                                      | 28       | 108                |      |          |      |
| 4-Nitrophenol              | 4.4               |     | 5.000                          | 0           | 88.4                                      | 19       | 137                |      |          |      |
| Bis(2-ethylhexyl)phthalate | 5.1               |     | 5.000                          | 0           | 102                                       | 51       | 149                |      |          |      |
| Phenol                     | 4.8               |     | 5.000                          | 0           | 95.6                                      | 45       | 134                |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1406B32

22-Jul-14

Client: Navajo Refining Company

Project: Skinner List

|            |            |     |                         |             |                                    |          |             |      |          |      |
|------------|------------|-----|-------------------------|-------------|------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LCS-R20053 |     | SampType: LCS           |             | TestCode: EPA 8270D: Semivolatiles |          |             |      |          |      |
| Client ID: | LCSW       |     | Batch ID: R20053        |             | RunNo: 20053                       |          |             |      |          |      |
| Prep Date: |            |     | Analysis Date: 7/1/2014 |             | SeqNo: 582891                      |          | Units: µg/L |      |          |      |
| Analyte    | Result     | PQL | SPK value               | SPK Ref Val | %REC                               | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Pyrene     | 4.3        |     | 5.000                   | 0           | 86.6                               | 45       | 139         |      |          |      |

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# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1406B32

22-Jul-14

Client: Navajo Refining Company

Project: Skinner List

|            |           |        |                          |             |                                           |          |             |      |          |      |
|------------|-----------|--------|--------------------------|-------------|-------------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | MB-R20054 |        | SampType: MBLK           |             | TestCode: EPA 335.4: Total Cyanide Subbed |          |             |      |          |      |
| Client ID: | PBW       |        | Batch ID: R20054         |             | RunNo: 20054                              |          |             |      |          |      |
| Prep Date: |           |        | Analysis Date: 6/30/2014 |             | SeqNo: 582896                             |          | Units: mg/L |      |          |      |
| Analyte    | Result    | PQL    | SPK value                | SPK Ref Val | %REC                                      | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Cyanide    | ND        | 0.0100 |                          |             |                                           |          |             |      |          |      |

|            |            |     |                          |             |                                           |          |             |      |          |      |
|------------|------------|-----|--------------------------|-------------|-------------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LCS-R20054 |     | SampType: LCS            |             | TestCode: EPA 335.4: Total Cyanide Subbed |          |             |      |          |      |
| Client ID: | LCSW       |     | Batch ID: R20054         |             | RunNo: 20054                              |          |             |      |          |      |
| Prep Date: |            |     | Analysis Date: 6/30/2014 |             | SeqNo: 582897                             |          | Units: mg/L |      |          |      |
| Analyte    | Result     | PQL | SPK value                | SPK Ref Val | %REC                                      | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Cyanide    | 0.489      |     | 0.5000                   | 0           | 97.8                                      | 80       | 120         |      |          |      |

### Qualifiers:

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# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1406B32

22-Jul-14

Client: Navajo Refining Company

Project: Skinner List

|            |          |         |                         |             |                                    |          |             |      |          |      |
|------------|----------|---------|-------------------------|-------------|------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | MB-13988 |         | SampType: MBLK          |             | TestCode: EPA Method 7470: Mercury |          |             |      |          |      |
| Client ID: | PBW      |         | Batch ID: 13988         |             | RunNo: 19609                       |          |             |      |          |      |
| Prep Date: | 7/1/2014 |         | Analysis Date: 7/1/2014 |             | SeqNo: 568577                      |          | Units: mg/L |      |          |      |
| Analyte    | Result   | PQL     | SPK value               | SPK Ref Val | %REC                               | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Mercurv    | ND       | 0.00020 |                         |             |                                    |          |             |      |          |      |

|            |           |         |                         |             |                                    |          |             |      |          |      |
|------------|-----------|---------|-------------------------|-------------|------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LCS-13988 |         | SampType: LCS           |             | TestCode: EPA Method 7470: Mercury |          |             |      |          |      |
| Client ID: | LCSW      |         | Batch ID: 13988         |             | RunNo: 19609                       |          |             |      |          |      |
| Prep Date: | 7/1/2014  |         | Analysis Date: 7/1/2014 |             | SeqNo: 568578                      |          | Units: mg/L |      |          |      |
| Analyte    | Result    | PQL     | SPK value               | SPK Ref Val | %REC                               | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Mercury    | 0.0052    | 0.00020 | 0.005000                | 0           | 103                                | 80       | 120         |      |          |      |

|            |          |         |                         |             |                                    |          |             |      |          |      |
|------------|----------|---------|-------------------------|-------------|------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | MB-13988 |         | SampType: MBLK          |             | TestCode: EPA Method 7470: Mercury |          |             |      |          |      |
| Client ID: | PBW      |         | Batch ID: 13988         |             | RunNo: 19634                       |          |             |      |          |      |
| Prep Date: | 7/1/2014 |         | Analysis Date: 7/2/2014 |             | SeqNo: 569370                      |          | Units: mg/L |      |          |      |
| Analyte    | Result   | PQL     | SPK value               | SPK Ref Val | %REC                               | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Mercury    | ND       | 0.00020 |                         |             |                                    |          |             |      |          |      |

|            |           |         |           |                |          |          |           |                          |          |        |      |
|------------|-----------|---------|-----------|----------------|----------|----------|-----------|--------------------------|----------|--------|------|
| Sample ID  | LCS-13988 |         |           | SampType:      | LCS      |          | TestCode: | EPA Method 7470: Mercury |          |        |      |
| Client ID: | LCSW      |         |           | Batch ID:      | 13988    |          | RunNo:    | 19634                    |          |        |      |
| Prep Date: | 7/1/2014  |         |           | Analysis Date: | 7/2/2014 |          | SeqNo:    | 569371                   |          | Units: | mg/L |
| Analyte    | Result    | PQL     | SPK value | SPK Ref Val    | %REC     | LowLimit | HighLimit | %RPD                     | RPDLimit | Qual   |      |
| Mercury    | 0.0052    | 0.00020 | 0.005000  | 0              | 104      | 80       | 120       |                          |          |        |      |

### Qualifiers:

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P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1406B32

22-Jul-14

Client: Navajo Refining Company

Project: Skinner List

|            |                 |        |                                |             |      |                                                      |           |                    |          |      |
|------------|-----------------|--------|--------------------------------|-------------|------|------------------------------------------------------|-----------|--------------------|----------|------|
| Sample ID  | <b>MB-13986</b> |        | SampType: <b>MBLK</b>          |             |      | TestCode: <b>EPA 6010B: Total Recoverable Metals</b> |           |                    |          |      |
| Client ID: | <b>PBW</b>      |        | Batch ID: <b>13986</b>         |             |      | RunNo: <b>19786</b>                                  |           |                    |          |      |
| Prep Date: | <b>7/1/2014</b> |        | Analysis Date: <b>7/9/2014</b> |             |      | SeqNo: <b>574835</b>                                 |           | Units: <b>mg/L</b> |          |      |
| Analyte    | Result          | PQL    | SPK value                      | SPK Ref Val | %REC | LowLimit                                             | HighLimit | %RPD               | RPDLimit | Qual |
| Antimony   | 0.022           | 0.050  |                                |             |      |                                                      |           |                    |          | J    |
| Arsenic    | ND              | 0.020  |                                |             |      |                                                      |           |                    |          |      |
| Barium     | ND              | 0.020  |                                |             |      |                                                      |           |                    |          |      |
| Beryllium  | ND              | 0.0030 |                                |             |      |                                                      |           |                    |          |      |
| Cadmium    | ND              | 0.0020 |                                |             |      |                                                      |           |                    |          |      |
| Chromium   | ND              | 0.0060 |                                |             |      |                                                      |           |                    |          |      |
| Cobalt     | ND              | 0.0060 |                                |             |      |                                                      |           |                    |          |      |
| Copper     | ND              | 0.0060 |                                |             |      |                                                      |           |                    |          |      |
| Lead       | ND              | 0.0050 |                                |             |      |                                                      |           |                    |          |      |
| Nickel     | ND              | 0.010  |                                |             |      |                                                      |           |                    |          |      |
| Selenium   | ND              | 0.050  |                                |             |      |                                                      |           |                    |          |      |
| Silver     | ND              | 0.0050 |                                |             |      |                                                      |           |                    |          |      |
| Vanadium   | ND              | 0.050  |                                |             |      |                                                      |           |                    |          |      |
| Zinc       | ND              | 0.020  |                                |             |      |                                                      |           |                    |          |      |

|            |                  |        |                                |             |      |                                                      |           |                    |          |      |
|------------|------------------|--------|--------------------------------|-------------|------|------------------------------------------------------|-----------|--------------------|----------|------|
| Sample ID  | <b>LCS-13986</b> |        | SampType: <b>LCS</b>           |             |      | TestCode: <b>EPA 6010B: Total Recoverable Metals</b> |           |                    |          |      |
| Client ID: | <b>LCSW</b>      |        | Batch ID: <b>13986</b>         |             |      | RunNo: <b>19786</b>                                  |           |                    |          |      |
| Prep Date: | <b>7/1/2014</b>  |        | Analysis Date: <b>7/9/2014</b> |             |      | SeqNo: <b>574836</b>                                 |           | Units: <b>mg/L</b> |          |      |
| Analyte    | Result           | PQL    | SPK value                      | SPK Ref Val | %REC | LowLimit                                             | HighLimit | %RPD               | RPDLimit | Qual |
| Antimony   | 0.51             | 0.050  | 0.5000                         | 0           | 102  | 80                                                   | 120       |                    |          |      |
| Arsenic    | 0.52             | 0.020  | 0.5000                         | 0           | 103  | 80                                                   | 120       |                    |          |      |
| Barium     | 0.50             | 0.020  | 0.5000                         | 0           | 99.4 | 80                                                   | 120       |                    |          |      |
| Beryllium  | 0.52             | 0.0030 | 0.5000                         | 0           | 104  | 80                                                   | 120       |                    |          |      |
| Cadmium    | 0.50             | 0.0020 | 0.5000                         | 0           | 99.8 | 80                                                   | 120       |                    |          |      |
| Chromium   | 0.50             | 0.0060 | 0.5000                         | 0           | 100  | 80                                                   | 120       |                    |          |      |
| Cobalt     | 0.48             | 0.0060 | 0.5000                         | 0           | 96.5 | 80                                                   | 120       |                    |          |      |
| Copper     | 0.51             | 0.0060 | 0.5000                         | 0           | 103  | 80                                                   | 120       |                    |          |      |
| Lead       | 0.49             | 0.0050 | 0.5000                         | 0           | 98.0 | 80                                                   | 120       |                    |          |      |
| Nickel     | 0.48             | 0.010  | 0.5000                         | 0           | 96.2 | 80                                                   | 120       |                    |          |      |
| Selenium   | 0.49             | 0.050  | 0.5000                         | 0           | 98.2 | 80                                                   | 120       |                    |          |      |
| Silver     | 0.10             | 0.0050 | 0.1000                         | 0           | 104  | 80                                                   | 120       |                    |          |      |
| Vanadium   | 0.52             | 0.050  | 0.5000                         | 0           | 104  | 80                                                   | 120       |                    |          |      |
| Zinc       | 0.48             | 0.020  | 0.5000                         | 0           | 97.0 | 80                                                   | 120       |                    |          |      |

### Qualifiers:

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Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87105  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: NAVAJO REFINING COM

Work Order Number: 1406B32

RcptNo: 1

Received by/date:

CS

06/25/14

Logged By: Michelle Garcia

6/25/2014 8:45:00 AM

Michelle Garcia

Completed By: Michelle Garcia

6/25/2014 9:31:49 AM

Michelle Garcia

Reviewed By:

[Signature]

06/25/14

### Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? FedEx

### Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved bottles checked for pH: 1  
( $<2$  or  $>12$  unless noted)  
Adjusted? No  
Checked by: [Signature]

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

### 18. Cooler Information

| Cooler No | Temp $^{\circ}\text{C}$ | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|-------------------------|-----------|-------------|---------|-----------|-----------|
| 1         | 1.0                     | Good      | Yes         |         |           |           |



HALL ENVIRONMENTAL ANALYSIS LABORATORY

☒ Standard ☐ Rush

if necessary, samples submitted to Hall Environmental may be subcontracted to other accredited laboratories. This serves as notice of this possibility. Any sub-contracted data will be clearly notated on the analytical report.



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

August 19, 2014

Robert Combs  
Navajo Refining Company  
P.O. Box 159  
Artesia, NM 88211-0159  
TEL: (575) 748-5311  
FAX (575) 746-5451

RE: Skinner List

OrderNo.: 1407D13

Dear Robert Combs:

Hall Environmental Analysis Laboratory received 2 sample(s) on 7/29/2014 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1407D13**

Date Reported: 8/19/2014

**CLIENT:** Navajo Refining Company

**Client Sample ID:** East Water Well

**Project:** Skinner List

**Collection Date:** 7/28/2014 8:00:00 AM

**Lab ID:** 1407D13-001

**Matrix:** AQUEOUS

**Received Date:** 7/29/2014 8:41:00 AM

| Analyses                                   | Result | MDL      | RL      | Qual | Units | DF | Date Analyzed        | Batch ID |
|--------------------------------------------|--------|----------|---------|------|-------|----|----------------------|----------|
| <b>EPA METHOD 7470: MERCURY</b>            |        |          |         |      |       |    | Analyst: <b>MMD</b>  |          |
| Mercury                                    | ND     | 0.000087 | 0.00020 |      | mg/L  | 1  | 8/4/2014 2:49:08 PM  | 14571    |
| <b>EPA 6010B: TOTAL RECOVERABLE METALS</b> |        |          |         |      |       |    | Analyst: <b>ELS</b>  |          |
| Antimony                                   | ND     | 0.015    | 0.050   |      | mg/L  | 1  | 8/8/2014 10:43:44 AM | 14549    |
| Arsenic                                    | ND     | 0.0093   | 0.020   |      | mg/L  | 1  | 8/2/2014 2:12:38 PM  | 14549    |
| Barium                                     | 0.10   | 0.00062  | 0.020   |      | mg/L  | 1  | 8/2/2014 2:12:38 PM  | 14549    |
| Beryllium                                  | ND     | 0.00035  | 0.0030  |      | mg/L  | 1  | 8/8/2014 10:43:44 AM | 14549    |
| Cadmium                                    | ND     | 0.00063  | 0.0020  |      | mg/L  | 1  | 8/2/2014 2:12:38 PM  | 14549    |
| Chromium                                   | 0.014  | 0.0017   | 0.0060  |      | mg/L  | 1  | 8/2/2014 2:12:38 PM  | 14549    |
| Cobalt                                     | ND     | 0.0015   | 0.0060  |      | mg/L  | 1  | 8/2/2014 2:12:38 PM  | 14549    |
| Copper                                     | 0.054  | 0.0046   | 0.0060  |      | mg/L  | 1  | 8/2/2014 2:12:38 PM  | 14549    |
| Lead                                       | ND     | 0.0048   | 0.0050  |      | mg/L  | 1  | 8/2/2014 2:12:38 PM  | 14549    |
| Nickel                                     | ND     | 0.0019   | 0.010   |      | mg/L  | 1  | 8/2/2014 2:12:38 PM  | 14549    |
| Selenium                                   | ND     | 0.022    | 0.050   |      | mg/L  | 1  | 8/2/2014 2:12:38 PM  | 14549    |
| Silver                                     | ND     | 0.00052  | 0.0050  |      | mg/L  | 1  | 8/2/2014 2:12:38 PM  | 14549    |
| Vanadium                                   | 0.028  | 0.0055   | 0.050   | J    | mg/L  | 1  | 8/2/2014 2:12:38 PM  | 14549    |
| Zinc                                       | 0.034  | 0.0049   | 0.020   |      | mg/L  | 1  | 8/2/2014 2:12:38 PM  | 14549    |
| <b>EPA METHOD 8260B: VOLATILES</b>         |        |          |         |      |       |    | Analyst: <b>KJH</b>  |          |
| Benzene                                    | ND     | 0.46     | 1.0     |      | µg/L  | 1  | 7/29/2014 8:33:50 PM | R20215   |
| Toluene                                    | ND     | 0.44     | 1.0     |      | µg/L  | 1  | 7/29/2014 8:33:50 PM | R20215   |
| Ethylbenzene                               | ND     | 0.45     | 1.0     |      | µg/L  | 1  | 7/29/2014 8:33:50 PM | R20215   |
| Methyl tert-butyl ether (MTBE)             | ND     | 0.77     | 1.0     |      | µg/L  | 1  | 7/29/2014 8:33:50 PM | R20215   |
| 1,2-Dichloroethane (EDC)                   | ND     | 0.33     | 1.0     |      | µg/L  | 1  | 7/29/2014 8:33:50 PM | R20215   |
| 1,2-Dibromoethane (EDB)                    | ND     | 0.45     | 1.0     |      | µg/L  | 1  | 7/29/2014 8:33:50 PM | R20215   |
| 2-Butanone                                 | ND     | 1.4      | 10      |      | µg/L  | 1  | 7/29/2014 8:33:50 PM | R20215   |
| Carbon disulfide                           | ND     | 0.80     | 10      |      | µg/L  | 1  | 7/29/2014 8:33:50 PM | R20215   |
| Chlorobenzene                              | ND     | 0.49     | 1.0     |      | µg/L  | 1  | 7/29/2014 8:33:50 PM | R20215   |
| Chloroform                                 | ND     | 0.47     | 1.0     |      | µg/L  | 1  | 7/29/2014 8:33:50 PM | R20215   |
| 1,1-Dichloroethane                         | ND     | 0.33     | 1.0     |      | µg/L  | 1  | 7/29/2014 8:33:50 PM | R20215   |
| Styrene                                    | ND     | 0.58     | 1.0     |      | µg/L  | 1  | 7/29/2014 8:33:50 PM | R20215   |
| Tetrachloroethene (PCE)                    | ND     | 0.49     | 1.0     |      | µg/L  | 1  | 7/29/2014 8:33:50 PM | R20215   |
| 1,1,2-Trichloroethane                      | ND     | 0.42     | 1.0     |      | µg/L  | 1  | 7/29/2014 8:33:50 PM | R20215   |
| Trichloroethene (TCE)                      | ND     | 0.42     | 1.0     |      | µg/L  | 1  | 7/29/2014 8:33:50 PM | R20215   |
| Xylenes, Total                             | ND     | 1.4      | 1.5     |      | µg/L  | 1  | 7/29/2014 8:33:50 PM | R20215   |
| 1,4-Dioxane                                | ND     | 10       | 10      |      | µg/L  | 1  | 7/29/2014 8:33:50 PM | R20215   |
| Surr: 1,2-Dichloroethane-d4                | 83.7   | 0        | 70-130  |      | %REC  | 1  | 7/29/2014 8:33:50 PM | R20215   |
| Surr: 4-Bromofluorobenzene                 | 89.3   | 0        | 70-130  |      | %REC  | 1  | 7/29/2014 8:33:50 PM | R20215   |
| Surr: Dibromofluoromethane                 | 90.4   | 0        | 70-130  |      | %REC  | 1  | 7/29/2014 8:33:50 PM | R20215   |
| Surr: Toluene-d8                           | 93.9   | 0        | 70-130  |      | %REC  | 1  | 7/29/2014 8:33:50 PM | R20215   |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |                                                   |                                                      |
|--------------------|---------------------------------------------------|------------------------------------------------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    |
|                    | E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |
|                    | J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               |
|                    | O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
|                    | R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
|                    | S Spike Recovery outside accepted recovery limits |                                                      |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1407D13**

Date Reported: 8/19/2014

**CLIENT:** Navajo Refining Company

**Client Sample ID:** East Water Well

**Project:** Skinner List

**Collection Date:** 7/28/2014 8:00:00 AM

**Lab ID:** 1407D13-001

**Matrix:** AQUEOUS

**Received Date:** 7/29/2014 8:41:00 AM

| Analyses                        | Result | MDL  | RL     | Qual | Units | DF | Date Analyzed | Batch ID |
|---------------------------------|--------|------|--------|------|-------|----|---------------|----------|
| <b>EPA 8270D: SEMIVOLATILES</b> |        |      |        |      |       |    | Analyst: SUB  |          |
| Dibenz(a,h)acridine             | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| Benzenethiol                    | ND     | 0.50 | 5.0    |      | µg/L  | 1  | 8/12/2014     | R20652   |
| Indene                          | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| 1,2-Dichlorobenzene             | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| 1,3-Dichlorobenzene             | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| 1,4-Dichlorobenzene             | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| 1-Methylnaphthalene             | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| 2,4-Dimethylphenol              | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| 2,4-Dinitrophenol               | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| 2-Methylphenol                  | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| 3+4-Methylphenol                | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| 4-Nitrophenol                   | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| Acenaphthylene                  | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| Anthracene                      | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| Benz(a)anthracene               | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| Benzo(a)pyrene                  | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| Benzo(b)fluoranthene            | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| Benzo(k)fluoranthene            | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| Bis(2-ethylhexyl)phthalate      | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| Chrysene                        | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| Dibenz(a,h)anthracene           | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| Diethyl phthalate               | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| Dimethyl phthalate              | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| Di-n-butyl phthalate            | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| Fluoranthene                    | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| Fluorene                        | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| Indeno(1,2,3-cd)pyrene          | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| Naphthalene                     | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| Phenanthrene                    | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| Phenol                          | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| Pyrene                          | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| Pyridine                        | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| Quinoline                       | ND     | 0.10 | 0.50   |      | µg/L  | 1  | 8/12/2014     | R20652   |
| Surr: 2,4,6-Tribromophenol      | 90.7   | 0    | 53-122 |      | %REC  | 1  | 8/12/2014     | R20652   |
| Surr: 2-Fluorobiphenyl          | 87.8   | 0    | 12-116 |      | %REC  | 1  | 8/12/2014     | R20652   |
| Surr: 2-Fluorophenol            | 86.6   | 0    | 10-139 |      | %REC  | 1  | 8/12/2014     | R20652   |
| Surr: Nitrobenzene-d5           | 96.5   | 0    | 68-118 |      | %REC  | 1  | 8/12/2014     | R20652   |
| Surr: Phenol-d5                 | 90.5   | 0    | 28-154 |      | %REC  | 1  | 8/12/2014     | R20652   |
| Surr: Terphenyl-d14             | 91.4   | 0    | 52-144 |      | %REC  | 1  | 8/12/2014     | R20652   |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |                                                   |                                                      |
|--------------------|---------------------------------------------------|------------------------------------------------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    |
|                    | E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |
|                    | J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               |
|                    | O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
|                    | R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
|                    | S Spike Recovery outside accepted recovery limits |                                                      |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1407D13**

Date Reported: **8/19/2014**

**CLIENT:** Navajo Refining Company

**Client Sample ID:** East Water Well

**Project:** Skinner List

**Collection Date:** 7/28/2014 8:00:00 AM

**Lab ID:** 1407D13-001

**Matrix:** AQUEOUS

**Received Date:** 7/29/2014 8:41:00 AM

| Analyses                               | Result | MDL    | RL     | Qual | Units | DF | Date Analyzed       | Batch ID |
|----------------------------------------|--------|--------|--------|------|-------|----|---------------------|----------|
| <b>EPA 335.4: TOTAL CYANIDE SUBBED</b> |        |        |        |      |       |    | Analyst: <b>SUB</b> |          |
| Cyanide                                | ND     | 0.0100 | 0.0100 |      | mg/L  | 1  | 8/5/2014            | R20658   |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |   |                                                 |    |                                                    |
|--------------------|---|-------------------------------------------------|----|----------------------------------------------------|
| <b>Qualifiers:</b> | * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    |
|                    | E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |
|                    | J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |
|                    | O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |
|                    | R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |
|                    | S | Spike Recovery outside accepted recovery limits |    |                                                    |

# Hall Environmental Analysis Laboratory, Inc.

Analytical Report

Lab Order **1407D13**

Date Reported: 8/19/2014

**CLIENT:** Navajo Refining Company

**Client Sample ID:** TRIP BLANK

**Project:** Skinner List

**Collection Date:**

**Lab ID:** 1407D13-002

**Matrix:** TRIP BLANK

**Received Date:** 7/29/2014 8:41:00 AM

| Analyses                           | Result | MDL  | RL     | Qual | Units | DF | Date Analyzed        | Batch ID |
|------------------------------------|--------|------|--------|------|-------|----|----------------------|----------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |      |        |      |       |    | Analyst: <b>KJH</b>  |          |
| Benzene                            | ND     | 0.46 | 1.0    |      | µg/L  | 1  | 7/29/2014 9:57:38 PM | R20215   |
| Toluene                            | ND     | 0.44 | 1.0    |      | µg/L  | 1  | 7/29/2014 9:57:38 PM | R20215   |
| Ethylbenzene                       | ND     | 0.45 | 1.0    |      | µg/L  | 1  | 7/29/2014 9:57:38 PM | R20215   |
| Methyl tert-butyl ether (MTBE)     | ND     | 0.77 | 1.0    |      | µg/L  | 1  | 7/29/2014 9:57:38 PM | R20215   |
| 1,2-Dichloroethane (EDC)           | ND     | 0.33 | 1.0    |      | µg/L  | 1  | 7/29/2014 9:57:38 PM | R20215   |
| 1,2-Dibromoethane (EDB)            | ND     | 0.45 | 1.0    |      | µg/L  | 1  | 7/29/2014 9:57:38 PM | R20215   |
| 2-Butanone                         | 2.4    | 1.4  | 10     | J    | µg/L  | 1  | 7/29/2014 9:57:38 PM | R20215   |
| Carbon disulfide                   | ND     | 0.80 | 10     |      | µg/L  | 1  | 7/29/2014 9:57:38 PM | R20215   |
| Chlorobenzene                      | ND     | 0.49 | 1.0    |      | µg/L  | 1  | 7/29/2014 9:57:38 PM | R20215   |
| Chloroform                         | ND     | 0.47 | 1.0    |      | µg/L  | 1  | 7/29/2014 9:57:38 PM | R20215   |
| 1,1-Dichloroethane                 | ND     | 0.33 | 1.0    |      | µg/L  | 1  | 7/29/2014 9:57:38 PM | R20215   |
| Styrene                            | ND     | 0.58 | 1.0    |      | µg/L  | 1  | 7/29/2014 9:57:38 PM | R20215   |
| Tetrachloroethene (PCE)            | ND     | 0.49 | 1.0    |      | µg/L  | 1  | 7/29/2014 9:57:38 PM | R20215   |
| 1,1,1-Trichloroethane              | ND     | 0.40 | 1.0    |      | µg/L  | 1  | 7/29/2014 9:57:38 PM | R20215   |
| Trichloroethene (TCE)              | ND     | 0.42 | 1.0    |      | µg/L  | 1  | 7/29/2014 9:57:38 PM | R20215   |
| Xylenes, Total                     | ND     | 1.4  | 1.5    |      | µg/L  | 1  | 7/29/2014 9:57:38 PM | R20215   |
| 1,4-Dioxane                        | ND     | 10   | 10     |      | µg/L  | 1  | 7/29/2014 9:57:38 PM | R20215   |
| Surr: 1,2-Dichloroethane-d4        | 85.8   | 0    | 70-130 |      | %REC  | 1  | 7/29/2014 9:57:38 PM | R20215   |
| Surr: 4-Bromofluorobenzene         | 85.3   | 0    | 70-130 |      | %REC  | 1  | 7/29/2014 9:57:38 PM | R20215   |
| Surr: Dibromofluoromethane         | 93.1   | 0    | 70-130 |      | %REC  | 1  | 7/29/2014 9:57:38 PM | R20215   |
| Surr: Toluene-d8                   | 93.2   | 0    | 70-130 |      | %REC  | 1  | 7/29/2014 9:57:38 PM | R20215   |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |                                                   |                                                      |
|--------------------|---------------------------------------------------|------------------------------------------------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    |
|                    | E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |
|                    | J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               |
|                    | O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
|                    | R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
|                    | S Spike Recovery outside accepted recovery limits |                                                      |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1407D13

19-Aug-14

Client: Navajo Refining Company

Project: Skinner List

|                                |        |                          |           |             |                                       |             |           |      |          |      |
|--------------------------------|--------|--------------------------|-----------|-------------|---------------------------------------|-------------|-----------|------|----------|------|
| Sample ID                      | 5mL-rb | SampType: MBLK           |           |             | TestCode: EPA Method 8260B: VOLATILES |             |           |      |          |      |
| Client ID:                     | PBW    | Batch ID: R20215         |           |             | RunNo: 20215                          |             |           |      |          |      |
| Prep Date:                     |        | Analysis Date: 7/29/2014 |           |             | SeqNo: 587809                         | Units: µg/L |           |      |          |      |
| Analyte                        | Result | PQL                      | SPK value | SPK Ref Val | %REC                                  | LowLimit    | HighLimit | %RPD | RPDLimit | Qual |
| Benzene                        | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Toluene                        | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Ethylbenzene                   | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Methyl tert-butyl ether (MTBE) | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,2,4-Trimethylbenzene         | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,3,5-Trimethylbenzene         | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,2-Dichloroethane (EDC)       | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,2-Dibromoethane (EDB)        | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Naphthalene                    | ND     | 2.0                      |           |             |                                       |             |           |      |          |      |
| 1-Methylnaphthalene            | ND     | 4.0                      |           |             |                                       |             |           |      |          |      |
| 2-Methylnaphthalene            | ND     | 4.0                      |           |             |                                       |             |           |      |          |      |
| Acetone                        | ND     | 10                       |           |             |                                       |             |           |      |          |      |
| Bromobenzene                   | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Bromodichloromethane           | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Bromoform                      | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Bromomethane                   | ND     | 3.0                      |           |             |                                       |             |           |      |          |      |
| 2-Butanone                     | 2.4    | 10                       |           |             |                                       |             |           |      |          | J    |
| Carbon disulfide               | ND     | 10                       |           |             |                                       |             |           |      |          |      |
| Carbon Tetrachloride           | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Chlorobenzene                  | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Chloroethane                   | ND     | 2.0                      |           |             |                                       |             |           |      |          |      |
| Chloroform                     | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Chloromethane                  | ND     | 3.0                      |           |             |                                       |             |           |      |          |      |
| 2-Chlorotoluene                | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 4-Chlorotoluene                | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| cis-1,2-DCE                    | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| cis-1,3-Dichloropropene        | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,2-Dibromo-3-chloropropane    | ND     | 2.0                      |           |             |                                       |             |           |      |          |      |
| Dibromochloromethane           | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Dibromomethane                 | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,2-Dichlorobenzene            | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,3-Dichlorobenzene            | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,4-Dichlorobenzene            | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| Dichlorodifluoromethane        | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,1-Dichloroethane             | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,1-Dichloroethene             | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,2-Dichloropropane            | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 1,3-Dichloropropane            | ND     | 1.0                      |           |             |                                       |             |           |      |          |      |
| 2,2-Dichloropropane            | ND     | 2.0                      |           |             |                                       |             |           |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1407D13

19-Aug-14

Client: Navajo Refining Company

Project: Skinner List

|                             |        |                          |           |             |                                       |          |             |      |          |      |
|-----------------------------|--------|--------------------------|-----------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 5mL-rb | SampType: MBLK           |           |             | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID:                  | PBW    | Batch ID: R20215         |           |             | RunNo: 20215                          |          |             |      |          |      |
| Prep Date:                  |        | Analysis Date: 7/29/2014 |           |             | SeqNo: 587809                         |          | Units: µg/L |      |          |      |
| Analyte                     | Result | PQL                      | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| 1,1-Dichloropropene         | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Hexachlorobutadiene         | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 2-Hexanone                  | ND     | 10                       |           |             |                                       |          |             |      |          |      |
| Isopropylbenzene            | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 4-Isopropyltoluene          | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 4-Methyl-2-pentanone        | ND     | 10                       |           |             |                                       |          |             |      |          |      |
| Methylene Chloride          | ND     | 3.0                      |           |             |                                       |          |             |      |          |      |
| n-Butylbenzene              | ND     | 3.0                      |           |             |                                       |          |             |      |          |      |
| n-Propylbenzene             | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| sec-Butylbenzene            | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Styrene                     | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| tert-Butylbenzene           | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,1,1,2-Tetrachloroethane   | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,1,2,2-Tetrachloroethane   | ND     | 2.0                      |           |             |                                       |          |             |      |          |      |
| Tetrachloroethene (PCE)     | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| trans-1,2-DCE               | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| trans-1,3-Dichloropropene   | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,2,3-Trichlorobenzene      | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,2,4-Trichlorobenzene      | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,1,1-Trichloroethane       | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,1,2-Trichloroethane       | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Trichloroethene (TCE)       | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Trichlorofluoromethane      | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| 1,2,3-Trichloropropane      | ND     | 2.0                      |           |             |                                       |          |             |      |          |      |
| Vinyl chloride              | ND     | 1.0                      |           |             |                                       |          |             |      |          |      |
| Xylenes, Total              | ND     | 1.5                      |           |             |                                       |          |             |      |          |      |
| 1,4-Dioxane                 | ND     | 10                       |           |             |                                       |          |             |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 8.6    |                          | 10.00     |             | 86.1                                  | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 8.8    |                          | 10.00     |             | 87.7                                  | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 9.1    |                          | 10.00     |             | 90.6                                  | 70       | 130         |      |          |      |
| Surr: Toluene-d8            | 9.3    |                          | 10.00     |             | 92.7                                  | 70       | 130         |      |          |      |

|            |                  |                          |           |             |                                       |          |             |      |          |      |
|------------|------------------|--------------------------|-----------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | 100ngLcs200ngAnn | SampType: LCS            |           |             | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID: | LCSW             | Batch ID: R20215         |           |             | RunNo: 20215                          |          |             |      |          |      |
| Prep Date: |                  | Analysis Date: 7/29/2014 |           |             | SeqNo: 587811                         |          | Units: µg/L |      |          |      |
| Analyte    | Result           | PQL                      | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene    | 22               | 1.0                      | 20.00     | 0           | 108                                   | 70       | 130         |      |          |      |
| Toluene    | 22               | 1.0                      | 20.00     | 0           | 110                                   | 80       | 120         |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1407D13

19-Aug-14

Client: Navajo Refining Company

Project: Skinner List

|                             |                  |     |                          |             |      |                                       |           |             |          |      |
|-----------------------------|------------------|-----|--------------------------|-------------|------|---------------------------------------|-----------|-------------|----------|------|
| Sample ID                   | 100ngLcs200ngAnn |     | SampType: LCS            |             |      | TestCode: EPA Method 8260B: VOLATILES |           |             |          |      |
| Client ID:                  | LCSW             |     | Batch ID: R20215         |             |      | RunNo: 20215                          |           |             |          |      |
| Prep Date:                  |                  |     | Analysis Date: 7/29/2014 |             |      | SeqNo: 587811                         |           | Units: µg/L |          |      |
| Analyte                     | Result           | PQL | SPK value                | SPK Ref Val | %REC | LowLimit                              | HighLimit | %RPD        | RPDLimit | Qual |
| Chlorobenzene               | 22               | 1.0 | 20.00                    | 0           | 109  | 70                                    | 130       |             |          |      |
| 1,1-Dichloroethene          | 23               | 1.0 | 20.00                    | 0           | 116  | 82.6                                  | 131       |             |          |      |
| Trichloroethene (TCE)       | 21               | 1.0 | 20.00                    | 0           | 105  | 70                                    | 130       |             |          |      |
| Surr: 1,2-Dichloroethane-d4 | 8.9              |     | 10.00                    |             | 88.6 | 70                                    | 130       |             |          |      |
| Surr: 4-Bromofluorobenzene  | 9.0              |     | 10.00                    |             | 90.0 | 70                                    | 130       |             |          |      |
| Surr: Dibromofluoromethane  | 9.6              |     | 10.00                    |             | 95.7 | 70                                    | 130       |             |          |      |
| Surr: Toluene-d8            | 9.8              |     | 10.00                    |             | 98.0 | 70                                    | 130       |             |          |      |

|                             |                 |     |                          |             |                                       |          |             |      |          |      |
|-----------------------------|-----------------|-----|--------------------------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 1407D13-001a ms |     | SampType: MS             |             | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID:                  | East Water Well |     | Batch ID: R20215         |             | RunNo: 20215                          |          |             |      |          |      |
| Prep Date:                  |                 |     | Analysis Date: 7/29/2014 |             | SeqNo: 587816                         |          | Units: µg/L |      |          |      |
| Analyte                     | Result          | PQL | SPK value                | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                     | 21              | 1.0 | 20.00                    | 0           | 105                                   | 70       | 130         |      |          |      |
| Toluene                     | 21              | 1.0 | 20.00                    | 0           | 103                                   | 67.5     | 123         |      |          |      |
| Chlorobenzene               | 20              | 1.0 | 20.00                    | 0           | 101                                   | 70       | 130         |      |          |      |
| 1,1-Dichloroethene          | 23              | 1.0 | 20.00                    | 0           | 116                                   | 81.9     | 134         |      |          |      |
| Trichloroethene (TCE)       | 21              | 1.0 | 20.00                    | 0           | 103                                   | 70       | 130         |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 8.8             |     | 10.00                    |             | 88.3                                  | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 9.0             |     | 10.00                    |             | 90.2                                  | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 9.5             |     | 10.00                    |             | 95.0                                  | 70       | 130         |      |          |      |
| Surr: Toluene-d8            | 9.2             |     | 10.00                    |             | 92.4                                  | 70       | 130         |      |          |      |

|                             |                  |     |                          |               |               |                                       |             |      |          |      |
|-----------------------------|------------------|-----|--------------------------|---------------|---------------|---------------------------------------|-------------|------|----------|------|
| Sample ID                   | 1407D13-001a msd |     |                          | SampType: MSD |               | TestCode: EPA Method 8260B: VOLATILES |             |      |          |      |
| Client ID:                  | East Water Well  |     | Batch ID: R20215         |               | RunNo: 20215  |                                       |             |      |          |      |
| Prep Date:                  |                  |     | Analysis Date: 7/29/2014 |               | SeqNo: 587817 |                                       | Units: µg/L |      |          |      |
| Analyte                     | Result           | PQL | SPK value                | SPK Ref Val   | %REC          | LowLimit                              | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                     | 20               | 1.0 | 20.00                    | 0             | 102           | 70                                    | 130         | 3.51 | 20       |      |
| Toluene                     | 20               | 1.0 | 20.00                    | 0             | 100           | 67.5                                  | 123         | 2.68 | 20       |      |
| Chlorobenzene               | 19               | 1.0 | 20.00                    | 0             | 95.9          | 70                                    | 130         | 5.07 | 20       |      |
| 1,1-Dichloroethene          | 21               | 1.0 | 20.00                    | 0             | 104           | 81.9                                  | 134         | 10.1 | 20       |      |
| Trichloroethene (TCE)       | 20               | 1.0 | 20.00                    | 0             | 98.5          | 70                                    | 130         | 4.96 | 20       |      |
| Surr: 1,2-Dichloroethane-d4 | 8.5              |     | 10.00                    |               | 84.7          | 70                                    | 130         | 0    | 0        |      |
| Surr: 4-Bromofluorobenzene  | 8.7              |     | 10.00                    |               | 87.4          | 70                                    | 130         | 0    | 0        |      |
| Surr: Dibromofluoromethane  | 9.5              |     | 10.00                    |               | 94.6          | 70                                    | 130         | 0    | 0        |      |
| Surr: Toluene-d8            | 9.0              |     | 10.00                    |               | 90.3          | 70                                    | 130         | 0    | 0        |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1407D13

19-Aug-14

Client: Navajo Refining Company

Project: Skinner List

|                            |                  |      |                                 |             |                                           |          |                    |      |          |      |
|----------------------------|------------------|------|---------------------------------|-------------|-------------------------------------------|----------|--------------------|------|----------|------|
| Sample ID                  | <b>MB-R20652</b> |      | SampType: <b>MBLK</b>           |             | TestCode: <b>EPA 8270D: Semivolatiles</b> |          |                    |      |          |      |
| Client ID:                 | <b>PBW</b>       |      | Batch ID: <b>R20652</b>         |             | RunNo: <b>20652</b>                       |          |                    |      |          |      |
| Prep Date:                 |                  |      | Analysis Date: <b>8/12/2014</b> |             | SeqNo: <b>601049</b>                      |          | Units: <b>µg/L</b> |      |          |      |
| Analyte                    | Result           | PQL  | SPK value                       | SPK Ref Val | %REC                                      | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| 1,2-Dichlorobenzene        | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| 1,3-Dichlorobenzene        | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| 1,4-Dichlorobenzene        | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| 1-Methylnaphthalene        | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| 2,4-Dimethylphenol         | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| 2,4-Dinitrophenol          | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| 2-Methylphenol             | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| 3+4-Methylphenol           | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| 4-Nitrophenol              | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| Acenaphthylene             | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| Anthracene                 | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| Benz(a)anthracene          | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| Benzo(a)pyrene             | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| Benzo(b)fluoranthene       | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| Benzo(k)fluoranthene       | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| Bis(2-ethylhexyl)phthalate | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| Chrysene                   | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| Dibenz(a,h)anthracene      | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| Diethyl phthalate          | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| Dimethyl phthalate         | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| Di-n-butyl phthalate       | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| Fluoranthene               | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| Fluorene                   | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| Indeno(1,2,3-cd)pyrene     | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| Naphthalene                | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| Phenanthrene               | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| Phenol                     | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| Pyrene                     | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |
| Pyridine                   | ND               | 0.50 |                                 |             |                                           |          |                    |      |          |      |

|                            |                   |     |                                 |             |                                           |          |                    |      |          |      |
|----------------------------|-------------------|-----|---------------------------------|-------------|-------------------------------------------|----------|--------------------|------|----------|------|
| Sample ID                  | <b>LCS-R20652</b> |     | SampType: <b>LCS</b>            |             | TestCode: <b>EPA 8270D: Semivolatiles</b> |          |                    |      |          |      |
| Client ID:                 | <b>LCSW</b>       |     | Batch ID: <b>R20652</b>         |             | RunNo: <b>20652</b>                       |          |                    |      |          |      |
| Prep Date:                 |                   |     | Analysis Date: <b>8/12/2014</b> |             | SeqNo: <b>601050</b>                      |          | Units: <b>µg/L</b> |      |          |      |
| Analyte                    | Result            | PQL | SPK value                       | SPK Ref Val | %REC                                      | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| 1,4-Dichlorobenzene        | 3.2               |     | 5.000                           | 0           | 64.0                                      | 28       | 108                |      |          |      |
| 4-Nitrophenol              | 4.0               |     | 5.000                           | 0           | 80.4                                      | 19       | 137                |      |          |      |
| Bis(2-ethylhexyl)phthalate | 5.8               |     | 5.000                           | 0           | 116                                       | 43       | 142                |      |          |      |
| Phenol                     | 4.6               |     | 5.000                           | 0           | 92.8                                      | 45       | 134                |      |          |      |

### Qualifiers:

|   |                                                 |    |                                                    |
|---|-------------------------------------------------|----|----------------------------------------------------|
| * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    |
| E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |
| J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |
| O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |
| R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |
| S | Spike Recovery outside accepted recovery limits |    |                                                    |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1407D13

19-Aug-14

Client: Navajo Refining Company

Project: Skinner List

|            |            |     |                          |             |                                    |          |             |      |          |      |
|------------|------------|-----|--------------------------|-------------|------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LCS-R20652 |     | SampType: LCS            |             | TestCode: EPA 8270D: Semivolatiles |          |             |      |          |      |
| Client ID: | LCSW       |     | Batch ID: R20652         |             | RunNo: 20652                       |          |             |      |          |      |
| Prep Date: |            |     | Analysis Date: 8/12/2014 |             | SeqNo: 601050                      |          | Units: µg/L |      |          |      |
| Analyte    | Result     | PQL | SPK value                | SPK Ref Val | %REC                               | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Pyrene     | 5.2        |     | 5.000                    | 0           | 105                                | 45       | 139         |      |          |      |

### Qualifiers:

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S Spike Recovery outside accepted recovery limits

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H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1407D13

19-Aug-14

Client: Navajo Refining Company

Project: Skinner List

|            |           |        |                         |             |                                           |          |             |      |          |      |
|------------|-----------|--------|-------------------------|-------------|-------------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | MB-R20658 |        | SampType: MBLK          |             | TestCode: EPA 335.4: Total Cyanide Subbed |          |             |      |          |      |
| Client ID: | PBW       |        | Batch ID: R20658        |             | RunNo: 20658                              |          |             |      |          |      |
| Prep Date: |           |        | Analysis Date: 8/5/2014 |             | SeqNo: 601240                             |          | Units: mg/L |      |          |      |
| Analyte    | Result    | PQL    | SPK value               | SPK Ref Val | %REC                                      | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Cyanide    | ND        | 0.0100 |                         |             |                                           |          |             |      |          |      |

|            |            |     |                         |             |                                           |          |             |      |          |      |
|------------|------------|-----|-------------------------|-------------|-------------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LCS-R20658 |     | SampType: LCS           |             | TestCode: EPA 335.4: Total Cyanide Subbed |          |             |      |          |      |
| Client ID: | LCSW       |     | Batch ID: R20658        |             | RunNo: 20658                              |          |             |      |          |      |
| Prep Date: |            |     | Analysis Date: 8/5/2014 |             | SeqNo: 601241                             |          | Units: mg/L |      |          |      |
| Analyte    | Result     | PQL | SPK value               | SPK Ref Val | %REC                                      | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Cyanide    | 0.530      |     | 0.5000                  | 0           | 106                                       | 90       | 110         |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
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O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1407D13

19-Aug-14

**Client:** Navajo Refining Company

**Project:** Skinner List

|            |          |         |                         |             |                                    |          |             |      |          |      |
|------------|----------|---------|-------------------------|-------------|------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | MB-14571 |         | SampType: MBLK          |             | TestCode: EPA Method 7470: Mercury |          |             |      |          |      |
| Client ID: | PBW      |         | Batch ID: 14571         |             | RunNo: 20345                       |          |             |      |          |      |
| Prep Date: | 8/4/2014 |         | Analysis Date: 8/4/2014 |             | SeqNo: 591482                      |          | Units: mg/L |      |          |      |
| Analyte    | Result   | PQL     | SPK value               | SPK Ref Val | %REC                               | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Mercurv    | ND       | 0.00020 |                         |             |                                    |          |             |      |          |      |

|            |           |         |                         |             |                                    |          |             |      |          |      |
|------------|-----------|---------|-------------------------|-------------|------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LCS-14571 |         | SampType: LCS           |             | TestCode: EPA Method 7470: Mercury |          |             |      |          |      |
| Client ID: | LCSW      |         | Batch ID: 14571         |             | RunNo: 20345                       |          |             |      |          |      |
| Prep Date: | 8/4/2014  |         | Analysis Date: 8/4/2014 |             | SeqNo: 591483                      |          | Units: mg/L |      |          |      |
| Analyte    | Result    | PQL     | SPK value               | SPK Ref Val | %REC                               | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Mercury    | 0.0049    | 0.00020 | 0.005000                | 0           | 98.9                               | 80       | 120         |      |          |      |

|            |                 |         |                         |             |                                    |          |             |      |          |      |
|------------|-----------------|---------|-------------------------|-------------|------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | 1407D13-001BMS  |         | SampType: MS            |             | TestCode: EPA Method 7470: Mercury |          |             |      |          |      |
| Client ID: | East Water Well |         | Batch ID: 14571         |             | RunNo: 20345                       |          |             |      |          |      |
| Prep Date: | 8/4/2014        |         | Analysis Date: 8/4/2014 |             | SeqNo: 591495                      |          | Units: mg/L |      |          |      |
| Analyte    | Result          | PQL     | SPK value               | SPK Ref Val | %REC                               | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Mercury    | 0.0048          | 0.00020 | 0.005000                | 0           | 95.7                               | 75       | 125         |      |          |      |

|            |                 |         |                         |             |                                    |          |             |       |          |      |
|------------|-----------------|---------|-------------------------|-------------|------------------------------------|----------|-------------|-------|----------|------|
| Sample ID  | 1407D13-001BMSD |         | SampType: MSD           |             | TestCode: EPA Method 7470: Mercury |          |             |       |          |      |
| Client ID: | East Water Well |         | Batch ID: 14571         |             | RunNo: 20345                       |          |             |       |          |      |
| Prep Date: | 8/4/2014        |         | Analysis Date: 8/4/2014 |             | SeqNo: 591496                      |          | Units: mg/L |       |          |      |
| Analyte    | Result          | PQL     | SPK value               | SPK Ref Val | %REC                               | LowLimit | HighLimit   | %RPD  | RPDLimit | Qual |
| Mercury    | 0.0047          | 0.00020 | 0.005000                | 0           | 94.8                               | 75       | 125         | 0.992 | 20       |      |

### Qualifiers:

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- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1407D13

19-Aug-14

Client: Navajo Refining Company

Project: Skinner List

|            |                 |        |                                |             |                                                      |          |                    |      |          |      |
|------------|-----------------|--------|--------------------------------|-------------|------------------------------------------------------|----------|--------------------|------|----------|------|
| Sample ID  | <b>MB-14549</b> |        | SampType: <b>MBLK</b>          |             | TestCode: <b>EPA 6010B: Total Recoverable Metals</b> |          |                    |      |          |      |
| Client ID: | <b>PBW</b>      |        | Batch ID: <b>14549</b>         |             | RunNo: <b>20323</b>                                  |          |                    |      |          |      |
| Prep Date: | <b>8/1/2014</b> |        | Analysis Date: <b>8/2/2014</b> |             | SeqNo: <b>590696</b>                                 |          | Units: <b>mg/L</b> |      |          |      |
| Analyte    | Result          | PQL    | SPK value                      | SPK Ref Val | %REC                                                 | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| Arsenic    | ND              | 0.020  |                                |             |                                                      |          |                    |      |          |      |
| Barium     | ND              | 0.020  |                                |             |                                                      |          |                    |      |          |      |
| Cadmium    | ND              | 0.0020 |                                |             |                                                      |          |                    |      |          |      |
| Chromium   | ND              | 0.0060 |                                |             |                                                      |          |                    |      |          |      |
| Cobalt     | ND              | 0.0060 |                                |             |                                                      |          |                    |      |          |      |
| Copper     | ND              | 0.0060 |                                |             |                                                      |          |                    |      |          |      |
| Lead       | ND              | 0.0050 |                                |             |                                                      |          |                    |      |          |      |
| Nickel     | ND              | 0.010  |                                |             |                                                      |          |                    |      |          |      |
| Selenium   | ND              | 0.050  |                                |             |                                                      |          |                    |      |          |      |
| Silver     | ND              | 0.0050 |                                |             |                                                      |          |                    |      |          |      |
| Vanadium   | ND              | 0.050  |                                |             |                                                      |          |                    |      |          |      |
| Zinc       | ND              | 0.020  |                                |             |                                                      |          |                    |      |          |      |

|            |                  |        |                                |             |                                                      |          |                    |      |          |      |
|------------|------------------|--------|--------------------------------|-------------|------------------------------------------------------|----------|--------------------|------|----------|------|
| Sample ID  | <b>LCS-14549</b> |        | SampType: <b>LCS</b>           |             | TestCode: <b>EPA 6010B: Total Recoverable Metals</b> |          |                    |      |          |      |
| Client ID: | <b>LCSW</b>      |        | Batch ID: <b>14549</b>         |             | RunNo: <b>20323</b>                                  |          |                    |      |          |      |
| Prep Date: | <b>8/1/2014</b>  |        | Analysis Date: <b>8/2/2014</b> |             | SeqNo: <b>590697</b>                                 |          | Units: <b>mg/L</b> |      |          |      |
| Analyte    | Result           | PQL    | SPK value                      | SPK Ref Val | %REC                                                 | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| Arsenic    | 0.50             | 0.020  | 0.5000                         | 0           | 101                                                  | 80       | 120                |      |          |      |
| Barium     | 0.50             | 0.020  | 0.5000                         | 0           | 99.7                                                 | 80       | 120                |      |          |      |
| Cadmium    | 0.50             | 0.0020 | 0.5000                         | 0           | 99.7                                                 | 80       | 120                |      |          |      |
| Chromium   | 0.50             | 0.0060 | 0.5000                         | 0           | 100                                                  | 80       | 120                |      |          |      |
| Cobalt     | 0.50             | 0.0060 | 0.5000                         | 0           | 100                                                  | 80       | 120                |      |          |      |
| Copper     | 0.50             | 0.0060 | 0.5000                         | 0           | 100                                                  | 80       | 120                |      |          |      |
| Lead       | 0.50             | 0.0050 | 0.5000                         | 0           | 99.5                                                 | 80       | 120                |      |          |      |
| Nickel     | 0.50             | 0.010  | 0.5000                         | 0           | 100                                                  | 80       | 120                |      |          |      |
| Selenium   | 0.52             | 0.050  | 0.5000                         | 0           | 105                                                  | 80       | 120                |      |          |      |
| Silver     | 0.085            | 0.0050 | 0.1000                         | 0           | 84.9                                                 | 80       | 120                |      |          |      |
| Vanadium   | 0.50             | 0.050  | 0.5000                         | 0           | 99.9                                                 | 80       | 120                |      |          |      |
| Zinc       | 0.50             | 0.020  | 0.5000                         | 0           | 99.8                                                 | 80       | 120                |      |          |      |

|            |                 |        |                                |             |                                                      |          |                    |      |          |      |
|------------|-----------------|--------|--------------------------------|-------------|------------------------------------------------------|----------|--------------------|------|----------|------|
| Sample ID  | <b>MB-14549</b> |        | SampType: <b>MBLK</b>          |             | TestCode: <b>EPA 6010B: Total Recoverable Metals</b> |          |                    |      |          |      |
| Client ID: | <b>PBW</b>      |        | Batch ID: <b>14549</b>         |             | RunNo: <b>20460</b>                                  |          |                    |      |          |      |
| Prep Date: | <b>8/1/2014</b> |        | Analysis Date: <b>8/8/2014</b> |             | SeqNo: <b>594968</b>                                 |          | Units: <b>mg/L</b> |      |          |      |
| Analyte    | Result          | PQL    | SPK value                      | SPK Ref Val | %REC                                                 | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| Antimony   | ND              | 0.050  |                                |             |                                                      |          |                    |      |          |      |
| Beryllium  | ND              | 0.0030 |                                |             |                                                      |          |                    |      |          |      |

### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- E Value above quantitation range
- J Analyte detected below quantitation limits
- O RSD is greater than RSDlimit
- R RPD outside accepted recovery limits
- S Spike Recovery outside accepted recovery limits

- B Analyte detected in the associated Method Blank
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- P Sample pH greater than 2.
- RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1407D13

19-Aug-14

Client: Navajo Refining Company

Project: Skinner List

|            |           |        |                         |             |      |                                               |           |             |          |      |
|------------|-----------|--------|-------------------------|-------------|------|-----------------------------------------------|-----------|-------------|----------|------|
| Sample ID  | LCS-14549 |        | SampType: LCS           |             |      | TestCode: EPA 6010B: Total Recoverable Metals |           |             |          |      |
| Client ID: | LCSW      |        | Batch ID: 14549         |             |      | RunNo: 20460                                  |           |             |          |      |
| Prep Date: | 8/1/2014  |        | Analysis Date: 8/8/2014 |             |      | SeqNo: 594969                                 |           | Units: mg/L |          |      |
| Analyte    | Result    | PQL    | SPK value               | SPK Ref Val | %REC | LowLimit                                      | HighLimit | %RPD        | RPDLimit | Qual |
| Antimony   | 0.52      | 0.050  | 0.5000                  | 0           | 104  | 80                                            | 120       |             |          |      |
| Beryllium  | 0.51      | 0.0030 | 0.5000                  | 0           | 101  | 80                                            | 120       |             |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

## Sample Log-In Check List

Client Name: NAVAJO REFINING COM

Work Order Number: 1407D13

RcptNo: 1

Received by/date:

CS

07/29/2014

Logged By:

Ashley Gallegos

7/29/2014 8:41:00 AM

Completed By:

Ashley Gallegos

7/29/2014 9:31:34 AM

Reviewed By:

IO

07/29/14

### Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? FedEx

### Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☒ No ☐ No VOA Vials ☐
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved bottles checked for pH: 1  
(<2 or >12 unless noted)  
Adjusted? no  
Checked by: CS

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

|                      |                                                                                                                                    |
|----------------------|------------------------------------------------------------------------------------------------------------------------------------|
| Person Notified:     | Date:                                                                                                                              |
| By Whom:             | Via: <input type="checkbox"/> eMail <input type="checkbox"/> Phone <input type="checkbox"/> Fax <input type="checkbox"/> In Person |
| Regarding:           |                                                                                                                                    |
| Client Instructions: |                                                                                                                                    |

17. Additional remarks:

### 18. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|---------|-----------|-------------|---------|-----------|-----------|
| 1         | 3.6     | Good      | Yes         |         |           |           |







---

10450 Stancliff Rd. Suite 210  
Houston, TX 77099  
T: +1 281 530 5656  
F: +1 281 530 5887  
www.alsglobal.com

September 08, 2014

Robert Combs  
Navajo Refining Company  
PO Box 1490  
Artesia, NM 88211-1490

Work Order: **HS14080747**

Laboratory Results for: **Lovington Lea Refining - SA**

Dear Robert,

ALS Environmental received 16 sample(s) on Aug 21, 2014 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in cursive script that reads "Bethany McDaniel".

Generated By: Dayna.Fisher  
Bethany McDaniel  
Project Manager

**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining - SA  
**Work Order:** HS14080747

**SAMPLE SUMMARY**

| Lab Samp ID   | Client Sample ID | Matrix | TagNo | Collection Date   | Date Received     | Hold                     |
|---------------|------------------|--------|-------|-------------------|-------------------|--------------------------|
| HS14080747-01 | MW-13            | Water  |       | 19-Aug-2014 10:10 | 21-Aug-2014 21:03 | <input type="checkbox"/> |
| HS14080747-02 | MW-16            | Water  |       | 19-Aug-2014 11:20 | 21-Aug-2014 21:03 | <input type="checkbox"/> |
| HS14080747-03 | MW-5             | Water  |       | 19-Aug-2014 12:10 | 21-Aug-2014 21:03 | <input type="checkbox"/> |
| HS14080747-04 | MW-28            | Water  |       | 19-Aug-2014 13:45 | 21-Aug-2014 21:03 | <input type="checkbox"/> |
| HS14080747-05 | MW-19            | Water  |       | 19-Aug-2014 15:10 | 21-Aug-2014 21:03 | <input type="checkbox"/> |
| HS14080747-06 | MW-20            | Water  |       | 19-Aug-2014 16:00 | 21-Aug-2014 21:03 | <input type="checkbox"/> |
| HS14080747-07 | MW-25            | Water  |       | 19-Aug-2014 18:05 | 21-Aug-2014 21:03 | <input type="checkbox"/> |
| HS14080747-08 | MW-21            | Water  |       | 19-Aug-2014 19:00 | 21-Aug-2014 21:03 | <input type="checkbox"/> |
| HS14080747-09 | Dup-1            | Water  |       | 19-Aug-2014 00:00 | 21-Aug-2014 21:03 | <input type="checkbox"/> |
| HS14080747-10 | Dup-2            | Water  |       | 19-Aug-2014 00:00 | 21-Aug-2014 21:03 | <input type="checkbox"/> |
| HS14080747-11 | MW-11            | Water  |       | 20-Aug-2014 07:45 | 21-Aug-2014 21:03 | <input type="checkbox"/> |
| HS14080747-12 | MW-12R           | Water  |       | 20-Aug-2014 08:55 | 21-Aug-2014 21:03 | <input type="checkbox"/> |
| HS14080747-13 | MW-14            | Water  |       | 20-Aug-2014 08:45 | 21-Aug-2014 21:03 | <input type="checkbox"/> |
| HS14080747-14 | MW-22            | Water  |       | 20-Aug-2014 11:50 | 21-Aug-2014 21:03 | <input type="checkbox"/> |
| HS14080747-15 | MW-18            | Water  |       | 20-Aug-2014 13:45 | 21-Aug-2014 21:03 | <input type="checkbox"/> |
| HS14080747-16 | TB-08-20-14-A    | Water  |       | 21-Aug-2014 17:06 | 21-Aug-2014 21:03 | <input type="checkbox"/> |

**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining - SA  
**Work Order:** HS14080747

**CASE NARRATIVE**

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**Work Order Comments**

- Sample received outside method holding time for pH. pH is an immediate test. Sample results are flagged with an "H" qualifier.

---

**GCMS Semivolatiles by Method SW8270****Batch ID: 85377**

Sample ID: **MW-5 (HS14080747-03)**

- The RPD between the MS and MSD was outside of the control limit for Pentachlorophenol.

---

**GCMS Volatiles by Method SW8260****Batch ID: R240113**

Sample ID: **HS14080845-11**

- MS/MSD is for an unrelated sample.

**Batch ID: R239746**

- Bromomethane exceeded %D limits for CCV. LCS is within control limits. Samples are ND for this compound.

Sample (HS14080684-02): MS/MSD is for an unrelated sample.

**Batch ID: R239820**

Sample ID: **MW-5 (HS14080747-03)**

- The MS and/or MSD recovery was below the lower control limit.

---

**Metals by Method SW6020****Batch ID: 85499**

Sample ID: **MW-5 (HS14080747-03)**

- The MS and/or MSD recovery was outside of the control for several compounds.

The RPD between the sample and its duplicate was outside the control limit for Nickel.

The PDS recovery was outside of the control for several compounds. SD %D was above control limits for Aluminum.

**Batch ID: 85498**

Sample ID: **HS14080602-02**

- MS/MSD/PDS/SD performed on an unrelated sample

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**Metals by Method SW7470****Batch ID: 85403**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

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**WetChemistry by Method M2510 B****Batch ID: R239957,R240171**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

---

**WetChemistry by Method E300****Batch ID: R240428**

Sample ID: **HS14090127-12**

- MS/MSD performed on an unrelated sample

**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining - SA  
**Work Order:** HS14080747

**CASE NARRATIVE**

---

**WetChemistry by Method E300**

**Batch ID: R240338**

Sample ID: **HS14080763-01**

- MS/MSD/MSD RPD performed on an unrelated sample

**Batch ID: R240268,R240342,R240429**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

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**WetChemistry by Method M2540C**

**Batch ID: R239982,R239983**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

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**WetChemistry by Method SM2320B**

**Batch ID: R239956**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

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**WetChemistry by Method SM4500H+ B**

**Batch ID: R239955**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-13  
 Collection Date: 19-Aug-2014 10:10

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-01  
 Matrix:Water

| ANALYSES                   | RESULT               | QUAL | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|----------------------|------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> | <b>Method:SW8260</b> |      |                 |             |                    | Analyst: PC       |
| 1,1,1-Trichloroethane      | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| 1,1,2,2-Tetrachloroethane  | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| 1,1,2-Trichloroethane      | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| 1,1-Dichloroethane         | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| 1,1-Dichloroethene         | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| 1,2,4-Trimethylbenzene     | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| 1,2-Dibromoethane          | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| 1,2-Dichloroethane         | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| 1,2-Dichloropropane        | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| 1,3,5-Trimethylbenzene     | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| 2-Butanone                 | ND                   |      | 0.010           | mg/L        | 1                  | 22-Aug-2014 20:27 |
| 2-Hexanone                 | ND                   |      | 0.010           | mg/L        | 1                  | 22-Aug-2014 20:27 |
| 4-Isopropyltoluene         | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| 4-Methyl-2-pentanone       | ND                   |      | 0.010           | mg/L        | 1                  | 22-Aug-2014 20:27 |
| Acetone                    | ND                   |      | 0.010           | mg/L        | 1                  | 22-Aug-2014 20:27 |
| Benzene                    | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| Bromodichloromethane       | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| Bromoform                  | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| Bromomethane               | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| Carbon disulfide           | ND                   |      | 0.010           | mg/L        | 1                  | 22-Aug-2014 20:27 |
| Carbon tetrachloride       | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| Chlorobenzene              | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| Chloroethane               | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| Chloroform                 | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| Chloromethane              | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| cis-1,2-Dichloroethene     | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| cis-1,3-Dichloropropene    | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| Dibromochloromethane       | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| Ethylbenzene               | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| Isopropylbenzene           | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| m,p-Xylene                 | ND                   |      | 0.010           | mg/L        | 1                  | 22-Aug-2014 20:27 |
| Methyl tert-butyl ether    | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| Methylene chloride         | ND                   |      | 0.010           | mg/L        | 1                  | 22-Aug-2014 20:27 |
| Naphthalene                | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| n-Butylbenzene             | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| n-Propylbenzene            | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| o-Xylene                   | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| <b>sec-Butylbenzene</b>    | <b>0.0055</b>        |      | <b>0.0050</b>   | <b>mg/L</b> | 1                  | 22-Aug-2014 20:27 |
| Styrene                    | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| Tetrachloroethene          | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| Toluene                    | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |
| trans-1,2-Dichloroethene   | ND                   |      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:27 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-13  
Collection Date: 19-Aug-2014 10:10

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
Lab ID:HS14080747-01  
Matrix:Water

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 |       |                    | Analyst: PC       |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L  | 1                  | 22-Aug-2014 20:27 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L  | 1                  | 22-Aug-2014 20:27 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L  | 1                  | 22-Aug-2014 20:27 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L  | 1                  | 22-Aug-2014 20:27 |
| Surr: 1,2-Dichloroethane-d4 | 87.8   |                      | 70-125          | %REC  | 1                  | 22-Aug-2014 20:27 |
| Surr: 4-Bromofluorobenzene  | 96.4   |                      | 72-125          | %REC  | 1                  | 22-Aug-2014 20:27 |
| Surr: Dibromofluoromethane  | 91.9   |                      | 71-125          | %REC  | 1                  | 22-Aug-2014 20:27 |
| Surr: Toluene-d8            | 95.4   |                      | 75-125          | %REC  | 1                  | 22-Aug-2014 20:27 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-13  
 Collection Date: 19-Aug-2014 10:10

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-01  
 Matrix:Water

| ANALYSES                          | RESULT     | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------------|------------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>    |            | <b>Method:SW8270</b> |                 | Prep:SW3510 / 22-Aug-2014 |                    | Analyst: LG       |
| <b>1,1'-Biphenyl</b>              | <b>4.1</b> |                      | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 22-Aug-2014 21:41 |
| 1-Methylnaphthalene               | ND         |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| 2,4,5-Trichlorophenol             | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| 2,4,6-Trichlorophenol             | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| 2,4-Dichlorophenol                | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| 2,4-Dimethylphenol                | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| 2,4-Dinitrophenol                 | ND         |                      | 1.0             | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| 2,4-Dinitrotoluene                | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| 2,6-Dinitrotoluene                | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| 2-Chloronaphthalene               | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| 2-Chlorophenol                    | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| 2-Methylnaphthalene               | ND         |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| 2-Methylphenol                    | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| 2-Nitroaniline                    | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| 2-Nitrophenol                     | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| 3&4-Methylphenol                  | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| 3,3'-Dichlorobenzidine            | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| 3-Nitroaniline                    | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| 4,6-Dinitro-2-methylphenol        | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| 4-Bromophenyl phenyl ether        | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| 4-Chloro-3-methylphenol           | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| 4-Chloroaniline                   | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| 4-Chlorophenyl phenyl ether       | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| 4-Nitroaniline                    | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| 4-Nitrophenol                     | ND         |                      | 1.0             | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Acenaphthene                      | ND         |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Acenaphthylene                    | ND         |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Acetophenone                      | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Anthracene                        | ND         |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Atrazine                          | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Benz(a)anthracene                 | ND         |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Benzaldehyde                      | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Benzo(a)pyrene                    | ND         |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Benzo(b)fluoranthene              | ND         |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Benzo(g,h,i)perylene              | ND         |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Benzo(k)fluoranthene              | ND         |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Bis(2-chloroethoxy)methane        | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Bis(2-chloroethyl)ether           | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Bis(2-chloroisopropyl)ether       | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>14</b>  |                      | <b>0.40</b>     | <b>ug/L</b>               | 2                  | 04-Sep-2014 14:21 |
| Butyl benzyl phthalate            | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Caprolactam                       | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-13  
 Collection Date: 19-Aug-2014 10:10

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-01  
 Matrix:Water

| ANALYSES                                  | RESULT      | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-------------------------------------------|-------------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>            |             | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 22-Aug-2014 |                    | Analyst: LG       |
| Carbazole                                 | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Chrysene                                  | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Dibenz(a,h)anthracene                     | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| <b>Dibenzofuran</b>                       | <b>0.73</b> |                       | <b>0.10</b>     | <b>ug/L</b>               | 1                  | 22-Aug-2014 21:41 |
| Diethyl phthalate                         | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Dimethyl phthalate                        | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Di-n-butyl phthalate                      | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Di-n-octyl phthalate                      | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Fluoranthene                              | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Fluorene                                  | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Hexachlorobenzene                         | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Hexachlorobutadiene                       | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Hexachlorocyclopentadiene                 | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Hexachloroethane                          | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Indeno(1,2,3-cd)pyrene                    | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Isophorone                                | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Naphthalene                               | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Nitrobenzene                              | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| N-Nitrosodi-n-propylamine                 | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| N-Nitrosodiphenylamine                    | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Pentachlorophenol                         | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Phenanthrene                              | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Phenol                                    | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Pyrene                                    | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 21:41 |
| Surr: 2,4,6-Tribromophenol                | 91.7        |                       | 34-129          | %REC                      | 1                  | 22-Aug-2014 21:41 |
| Surr: 2,4,6-Tribromophenol                | 92.4        |                       | 34-129          | %REC                      | 2                  | 04-Sep-2014 14:21 |
| Surr: 2-Fluorobiphenyl                    | 76.0        |                       | 40-125          | %REC                      | 2                  | 04-Sep-2014 14:21 |
| Surr: 2-Fluorobiphenyl                    | 71.0        |                       | 40-125          | %REC                      | 1                  | 22-Aug-2014 21:41 |
| Surr: 2-Fluorophenol                      | 61.4        |                       | 20-120          | %REC                      | 1                  | 22-Aug-2014 21:41 |
| Surr: 2-Fluorophenol                      | 57.2        |                       | 20-120          | %REC                      | 2                  | 04-Sep-2014 14:21 |
| Surr: 4-Terphenyl-d14                     | 88.5        |                       | 40-135          | %REC                      | 2                  | 04-Sep-2014 14:21 |
| Surr: 4-Terphenyl-d14                     | 88.0        |                       | 40-135          | %REC                      | 1                  | 22-Aug-2014 21:41 |
| Surr: Nitrobenzene-d5                     | 77.7        |                       | 41-120          | %REC                      | 1                  | 22-Aug-2014 21:41 |
| Surr: Nitrobenzene-d5                     | 83.9        |                       | 41-120          | %REC                      | 2                  | 04-Sep-2014 14:21 |
| Surr: Phenol-d6                           | 72.2        |                       | 20-120          | %REC                      | 2                  | 04-Sep-2014 14:21 |
| Surr: Phenol-d6                           | 72.7        |                       | 20-120          | %REC                      | 1                  | 22-Aug-2014 21:41 |
| <b>ALKALINITY BY SM2320B</b>              |             | <b>Method:SM2320B</b> |                 | Analyst: MYC              |                    |                   |
| <b>Alkalinity, Bicarbonate (As CaCO3)</b> | <b>437</b>  |                       | <b>5.00</b>     | <b>mg/L</b>               | 1                  | 26-Aug-2014 21:21 |
| Alkalinity, Carbonate (As CaCO3)          | ND          |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 21:21 |
| Alkalinity, Hydroxide (As CaCO3)          | ND          |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 21:21 |
| <b>Alkalinity, Total (As CaCO3)</b>       | <b>437</b>  |                       | <b>5.00</b>     | <b>mg/L</b>               | 1                  | 26-Aug-2014 21:21 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-13  
 Collection Date: 19-Aug-2014 10:10

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-01  
 Matrix:Water

| ANALYSES                                     | RESULT  | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |         | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 0.0737  |                          | 0.0100          | mg/L                       | 1                  | 28-Aug-2014 17:46 |
| Arsenic                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:46 |
| Barium                                       | 0.207   |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:46 |
| Boron                                        | 0.287   |                          | 0.0200          | mg/L                       | 1                  | 28-Aug-2014 17:46 |
| Cadmium                                      | ND      |                          | 0.00200         | mg/L                       | 1                  | 28-Aug-2014 17:46 |
| Calcium                                      | 321     |                          | 50.0            | mg/L                       | 100                | 02-Sep-2014 18:39 |
| Chromium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:46 |
| Cobalt                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:46 |
| Copper                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:46 |
| Iron                                         | ND      |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 17:46 |
| Lead                                         | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:46 |
| Magnesium                                    | 37.3    |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 17:46 |
| Manganese                                    | 0.940   |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:46 |
| Molybdenum                                   | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:46 |
| Nickel                                       | 0.00650 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:46 |
| Potassium                                    | 4.78    |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 17:46 |
| Selenium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:46 |
| Silver                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:46 |
| Sodium                                       | 90.7    |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 17:46 |
| Uranium                                      | 0.0151  |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:46 |
| Zinc                                         | 0.0115  |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:46 |
| <b>MERCURY BY SW7470A</b>                    |         | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 22-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND      |                          | 0.000200        | mg/L                       | 1                  | 22-Aug-2014 16:27 |
| <b>PH BY SM4500H+ B</b>                      |         | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 7.43    | H                        | 0.100           | pH Units                   | 1                  | 26-Aug-2014 21:21 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |         | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 2,320   |                          | 5.00            | umhos/cm                   | 1                  | 30-Aug-2014 15:27 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |         | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 1,900   |                          | 10.0            | mg/L                       | 1                  | 25-Aug-2014 18:30 |
| <b>ANIONS BY E300.0</b>                      |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 485     |                          | 5.00            | mg/L                       | 10                 | 03-Sep-2014 09:16 |
| Fluoride                                     | ND      |                          | 1.00            | mg/L                       | 10                 | 03-Sep-2014 09:16 |
| Sulfate                                      | 87.2    |                          | 5.00            | mg/L                       | 10                 | 03-Sep-2014 09:16 |
| <b>NITRATE/NITRITE BY E300.0</b>             |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | ND      |                          | 1.00            | mg/L                       | 5                  | 04-Sep-2014 03:42 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-16  
 Collection Date: 19-Aug-2014 11:20

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-02  
 Matrix:Water

| ANALYSES                   | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| 1,1,2,2-Tetrachloroethane  | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| 1,1,2-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| 1,1-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| 1,1-Dichloroethene         | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| 1,2,4-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| 1,2-Dibromoethane          | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| 1,2-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| 1,2-Dichloropropane        | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| 1,3,5-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| 2-Butanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 22-Aug-2014 20:56 |
| 2-Hexanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 22-Aug-2014 20:56 |
| 4-Isopropyltoluene         | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| 4-Methyl-2-pentanone       | ND     |                      | 0.010           | mg/L        | 1                  | 22-Aug-2014 20:56 |
| Acetone                    | ND     |                      | 0.010           | mg/L        | 1                  | 22-Aug-2014 20:56 |
| Benzene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| Bromodichloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| Bromoform                  | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| Bromomethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| Carbon disulfide           | ND     |                      | 0.010           | mg/L        | 1                  | 22-Aug-2014 20:56 |
| Carbon tetrachloride       | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| Chlorobenzene              | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| Chloroethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| Chloroform                 | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| Chloromethane              | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| cis-1,2-Dichloroethene     | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| cis-1,3-Dichloropropene    | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| Dibromochloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| Ethylbenzene               | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| Isopropylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| m,p-Xylene                 | ND     |                      | 0.010           | mg/L        | 1                  | 22-Aug-2014 20:56 |
| Methyl tert-butyl ether    | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| Methylene chloride         | ND     |                      | 0.010           | mg/L        | 1                  | 22-Aug-2014 20:56 |
| Naphthalene                | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| n-Butylbenzene             | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| n-Propylbenzene            | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| o-Xylene                   | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| sec-Butylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| Styrene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| Tetrachloroethene          | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| Toluene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |
| trans-1,2-Dichloroethene   | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 20:56 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-16  
Collection Date: 19-Aug-2014 11:20

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
Lab ID:HS14080747-02  
Matrix:Water

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 |       |                    | Analyst: PC       |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L  | 1                  | 22-Aug-2014 20:56 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L  | 1                  | 22-Aug-2014 20:56 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L  | 1                  | 22-Aug-2014 20:56 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L  | 1                  | 22-Aug-2014 20:56 |
| Surr: 1,2-Dichloroethane-d4 | 88.2   |                      | 70-125          | %REC  | 1                  | 22-Aug-2014 20:56 |
| Surr: 4-Bromofluorobenzene  | 99.3   |                      | 72-125          | %REC  | 1                  | 22-Aug-2014 20:56 |
| Surr: Dibromofluoromethane  | 91.4   |                      | 71-125          | %REC  | 1                  | 22-Aug-2014 20:56 |
| Surr: Toluene-d8            | 97.4   |                      | 75-125          | %REC  | 1                  | 22-Aug-2014 20:56 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-16  
 Collection Date: 19-Aug-2014 11:20

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-02  
 Matrix:Water

| ANALYSES                       | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|--------------------------------|--------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b> |        | <b>Method:SW8270</b> |                 | Prep:SW3510 / 22-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                  | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| 1-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| 2,4,5-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| 2,4,6-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| 2,4-Dichlorophenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| 2,4-Dimethylphenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| 2,4-Dinitrophenol              | ND     |                      | 1.0             | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| 2,4-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| 2,6-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| 2-Chloronaphthalene            | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| 2-Chlorophenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| 2-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| 2-Methylphenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| 2-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| 2-Nitrophenol                  | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| 3&4-Methylphenol               | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| 3,3'-Dichlorobenzidine         | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| 3-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| 4,6-Dinitro-2-methylphenol     | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| 4-Bromophenyl phenyl ether     | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| 4-Chloro-3-methylphenol        | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| 4-Chloroaniline                | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| 4-Chlorophenyl phenyl ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| 4-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| 4-Nitrophenol                  | ND     |                      | 1.0             | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Acenaphthene                   | ND     |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Acenaphthylene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Acetophenone                   | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Anthracene                     | ND     |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Atrazine                       | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Benz(a)anthracene              | ND     |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Benzaldehyde                   | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Benzo(a)pyrene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Benzo(b)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Benzo(g,h,i)perylene           | ND     |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Benzo(k)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Bis(2-chloroethoxy)methane     | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Bis(2-chloroethyl)ether        | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Bis(2-chloroisopropyl)ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Bis(2-ethylhexyl)phthalate     | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Butyl benzyl phthalate         | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Caprolactam                    | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-16  
 Collection Date: 19-Aug-2014 11:20

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-02  
 Matrix:Water

| ANALYSES                           | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 22-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Chrysene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Dibenz(a,h)anthracene              | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Dibenzofuran                       | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Diethyl phthalate                  | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Dimethyl phthalate                 | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Di-n-butyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Di-n-octyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Fluoranthene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Fluorene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Hexachlorobenzene                  | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Hexachlorobutadiene                | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Hexachlorocyclopentadiene          | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Hexachloroethane                   | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Indeno(1,2,3-cd)pyrene             | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Isophorone                         | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Naphthalene                        | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Nitrobenzene                       | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| N-Nitrosodi-n-propylamine          | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| N-Nitrosodiphenylamine             | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Pentachlorophenol                  | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Phenanthrene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Phenol                             | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Pyrene                             | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:01 |
| Surr: 2,4,6-Tribromophenol         | 80.4   |                       | 34-129          | %REC                      | 1                  | 22-Aug-2014 22:01 |
| Surr: 2-Fluorobiphenyl             | 53.5   |                       | 40-125          | %REC                      | 1                  | 22-Aug-2014 22:01 |
| Surr: 2-Fluorophenol               | 50.3   |                       | 20-120          | %REC                      | 1                  | 22-Aug-2014 22:01 |
| Surr: 4-Terphenyl-d14              | 77.4   |                       | 40-135          | %REC                      | 1                  | 22-Aug-2014 22:01 |
| Surr: Nitrobenzene-d5              | 56.6   |                       | 41-120          | %REC                      | 1                  | 22-Aug-2014 22:01 |
| Surr: Phenol-d6                    | 52.5   |                       | 20-120          | %REC                      | 1                  | 22-Aug-2014 22:01 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method:SM2320B</b> |                 |                           |                    | Analyst: MYC      |
| Alkalinity, Bicarbonate (As CaCO3) | 206    |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 21:27 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 21:27 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 21:27 |
| Alkalinity, Total (As CaCO3)       | 206    |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 21:27 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-16  
 Collection Date: 19-Aug-2014 11:20

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-02  
 Matrix:Water

| ANALYSES                                     | RESULT  | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |         | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 0.335   |                          | 0.0100          | mg/L                       | 1                  | 28-Aug-2014 17:49 |
| Arsenic                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:49 |
| Barium                                       | 0.104   |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:49 |
| Boron                                        | 0.209   |                          | 0.0200          | mg/L                       | 1                  | 28-Aug-2014 17:49 |
| Cadmium                                      | ND      |                          | 0.00200         | mg/L                       | 1                  | 28-Aug-2014 17:49 |
| Calcium                                      | 69.9    |                          | 0.500           | mg/L                       | 1                  | 28-Aug-2014 17:49 |
| Chromium                                     | 0.00751 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:49 |
| Cobalt                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:49 |
| Copper                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:49 |
| Iron                                         | ND      |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 17:49 |
| Lead                                         | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:49 |
| Magnesium                                    | 8.04    |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 17:49 |
| Manganese                                    | 0.00544 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:49 |
| Molybdenum                                   | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:49 |
| Nickel                                       | 0.00667 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:49 |
| Potassium                                    | 2.00    |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 17:49 |
| Selenium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:49 |
| Silver                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:49 |
| Sodium                                       | 38.4    |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 17:49 |
| Uranium                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:49 |
| Zinc                                         | 0.00897 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:49 |
| <b>MERCURY BY SW7470A</b>                    |         | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 22-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND      |                          | 0.000200        | mg/L                       | 1                  | 22-Aug-2014 16:29 |
| <b>PH BY SM4500H+ B</b>                      |         | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 7.97    | H                        | 0.100           | pH Units                   | 1                  | 26-Aug-2014 21:27 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |         | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 538     |                          | 5.00            | umhos/cm                   | 1                  | 30-Aug-2014 15:28 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |         | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 362     |                          | 10.0            | mg/L                       | 1                  | 25-Aug-2014 18:30 |
| <b>ANIONS BY E300.0</b>                      |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 21.7    |                          | 0.500           | mg/L                       | 1                  | 03-Sep-2014 09:37 |
| Fluoride                                     | 0.975   |                          | 0.100           | mg/L                       | 1                  | 03-Sep-2014 09:37 |
| Sulfate                                      | 64.9    |                          | 0.500           | mg/L                       | 1                  | 03-Sep-2014 09:37 |
| <b>NITRATE/NITRITE BY E300.0</b>             |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 1.41    |                          | 1.00            | mg/L                       | 5                  | 05-Sep-2014 16:48 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-5  
 Collection Date: 19-Aug-2014 12:10

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-03  
 Matrix:Water

| ANALYSES                   | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| 1,1,2,2-Tetrachloroethane  | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| 1,1,2-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| 1,1-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| 1,1-Dichloroethene         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| 1,2,4-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| 1,2-Dibromoethane          | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| 1,2-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| 1,2-Dichloropropane        | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| 1,3,5-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| 2-Butanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 12:04 |
| 2-Hexanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 12:04 |
| 4-Isopropyltoluene         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| 4-Methyl-2-pentanone       | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 12:04 |
| Acetone                    | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 12:04 |
| Benzene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| Bromodichloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| Bromoform                  | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| Bromomethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| Carbon disulfide           | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 12:04 |
| Carbon tetrachloride       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| Chlorobenzene              | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| Chloroethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| Chloroform                 | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| Chloromethane              | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| cis-1,2-Dichloroethene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| cis-1,3-Dichloropropene    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| Dibromochloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| Ethylbenzene               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| Isopropylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| m,p-Xylene                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 12:04 |
| Methyl tert-butyl ether    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| Methylene chloride         | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 12:04 |
| Naphthalene                | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| n-Butylbenzene             | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| n-Propylbenzene            | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| o-Xylene                   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| sec-Butylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| Styrene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| Tetrachloroethene          | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| Toluene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| trans-1,2-Dichloroethene   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-5  
Collection Date: 19-Aug-2014 12:10

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
Lab ID:HS14080747-03  
Matrix:Water

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 25-Aug-2014 12:04 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 25-Aug-2014 12:04 |
| Surr: 1,2-Dichloroethane-d4 | 94.8   |                      | 70-125          | %REC        | 1                  | 25-Aug-2014 12:04 |
| Surr: 4-Bromofluorobenzene  | 97.5   |                      | 72-125          | %REC        | 1                  | 25-Aug-2014 12:04 |
| Surr: Dibromofluoromethane  | 95.6   |                      | 71-125          | %REC        | 1                  | 25-Aug-2014 12:04 |
| Surr: Toluene-d8            | 96.3   |                      | 75-125          | %REC        | 1                  | 25-Aug-2014 12:04 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-5  
 Collection Date: 19-Aug-2014 12:10

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-03  
 Matrix:Water

| ANALYSES                          | RESULT     | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------------|------------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>    |            | <b>Method:SW8270</b> |                 | Prep:SW3510 / 22-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                     | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| 1-Methylnaphthalene               | ND         |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| 2,4,5-Trichlorophenol             | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| 2,4,6-Trichlorophenol             | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| 2,4-Dichlorophenol                | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| 2,4-Dimethylphenol                | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| 2,4-Dinitrophenol                 | ND         |                      | 1.0             | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| 2,4-Dinitrotoluene                | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| 2,6-Dinitrotoluene                | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| 2-Chloronaphthalene               | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| 2-Chlorophenol                    | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| 2-Methylnaphthalene               | ND         |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| 2-Methylphenol                    | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| 2-Nitroaniline                    | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| 2-Nitrophenol                     | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| 3&4-Methylphenol                  | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| 3,3'-Dichlorobenzidine            | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| 3-Nitroaniline                    | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| 4,6-Dinitro-2-methylphenol        | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| 4-Bromophenyl phenyl ether        | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| 4-Chloro-3-methylphenol           | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| 4-Chloroaniline                   | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| 4-Chlorophenyl phenyl ether       | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| 4-Nitroaniline                    | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| 4-Nitrophenol                     | ND         |                      | 1.0             | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Acenaphthene                      | ND         |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Acenaphthylene                    | ND         |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Acetophenone                      | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Anthracene                        | ND         |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Atrazine                          | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Benz(a)anthracene                 | ND         |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Benzaldehyde                      | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Benzo(a)pyrene                    | ND         |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Benzo(b)fluoranthene              | ND         |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Benzo(g,h,i)perylene              | ND         |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Benzo(k)fluoranthene              | ND         |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Bis(2-chloroethoxy)methane        | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Bis(2-chloroethyl)ether           | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Bis(2-chloroisopropyl)ether       | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>5.3</b> |                      | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 22-Aug-2014 15:32 |
| Butyl benzyl phthalate            | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Caprolactam                       | ND         |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-5  
 Collection Date: 19-Aug-2014 12:10

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-03  
 Matrix:Water

| ANALYSES                           | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 22-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Chrysene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Dibenz(a,h)anthracene              | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Dibenzofuran                       | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Diethyl phthalate                  | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Dimethyl phthalate                 | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Di-n-butyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Di-n-octyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Fluoranthene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Fluorene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Hexachlorobenzene                  | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Hexachlorobutadiene                | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Hexachlorocyclopentadiene          | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Hexachloroethane                   | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Indeno(1,2,3-cd)pyrene             | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Isophorone                         | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Naphthalene                        | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Nitrobenzene                       | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| N-Nitrosodi-n-propylamine          | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| N-Nitrosodiphenylamine             | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Pentachlorophenol                  | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Phenanthrene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Phenol                             | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Pyrene                             | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 15:32 |
| Surr: 2,4,6-Tribromophenol         | 80.9   |                       | 34-129          | %REC                      | 1                  | 22-Aug-2014 15:32 |
| Surr: 2-Fluorobiphenyl             | 72.9   |                       | 40-125          | %REC                      | 1                  | 22-Aug-2014 15:32 |
| Surr: 2-Fluorophenol               | 67.9   |                       | 20-120          | %REC                      | 1                  | 22-Aug-2014 15:32 |
| Surr: 4-Terphenyl-d14              | 79.4   |                       | 40-135          | %REC                      | 1                  | 22-Aug-2014 15:32 |
| Surr: Nitrobenzene-d5              | 76.3   |                       | 41-120          | %REC                      | 1                  | 22-Aug-2014 15:32 |
| Surr: Phenol-d6                    | 70.1   |                       | 20-120          | %REC                      | 1                  | 22-Aug-2014 15:32 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method:SM2320B</b> |                 |                           |                    | Analyst: MYC      |
| Alkalinity, Bicarbonate (As CaCO3) | 345    |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 21:33 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 21:33 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 21:33 |
| Alkalinity, Total (As CaCO3)       | 345    |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 21:33 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-5  
 Collection Date: 19-Aug-2014 12:10

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-03  
 Matrix:Water

| ANALYSES                                     | RESULT  | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |         | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 0.148   |                          | 0.0100          | mg/L                       | 1                  | 04-Sep-2014 17:43 |
| Arsenic                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 17:43 |
| Barium                                       | 0.123   |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 17:43 |
| Boron                                        | ND      |                          | 0.0200          | mg/L                       | 1                  | 05-Sep-2014 11:36 |
| Cadmium                                      | ND      |                          | 0.00200         | mg/L                       | 1                  | 04-Sep-2014 17:43 |
| Calcium                                      | 79.4    |                          | 0.500           | mg/L                       | 1                  | 04-Sep-2014 17:43 |
| Chromium                                     | 0.00744 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 17:43 |
| Cobalt                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 17:43 |
| Copper                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 17:43 |
| Iron                                         | ND      |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 17:43 |
| Lead                                         | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 17:43 |
| Magnesium                                    | 9.74    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 17:43 |
| Manganese                                    | 0.00532 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 17:43 |
| Molybdenum                                   | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 17:43 |
| Nickel                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 17:43 |
| Potassium                                    | 2.58    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 17:43 |
| Selenium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 17:43 |
| Silver                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 17:43 |
| Sodium                                       | 59.1    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 17:43 |
| Uranium                                      | 0.00535 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 17:43 |
| Zinc                                         | 0.00626 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 17:43 |
| <b>MERCURY BY SW7470A</b>                    |         | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 22-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND      |                          | 0.000200        | mg/L                       | 1                  | 22-Aug-2014 16:20 |
| <b>PH BY SM4500H+ B</b>                      |         | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 7.85    | H                        | 0.100           | pH Units                   | 1                  | 26-Aug-2014 21:33 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |         | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 689     |                          | 5.00            | umhos/cm                   | 1                  | 30-Aug-2014 15:29 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |         | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 478     |                          | 10.0            | mg/L                       | 1                  | 25-Aug-2014 18:30 |
| <b>ANIONS BY E300.0</b>                      |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 8.71    |                          | 0.500           | mg/L                       | 1                  | 03-Sep-2014 11:48 |
| Fluoride                                     | 1.16    |                          | 0.100           | mg/L                       | 1                  | 03-Sep-2014 11:48 |
| Sulfate                                      | 44.6    |                          | 0.500           | mg/L                       | 1                  | 03-Sep-2014 11:48 |
| <b>NITRATE/NITRITE BY E300.0</b>             |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 1.68    |                          | 1.00            | mg/L                       | 5                  | 04-Sep-2014 05:08 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-28  
 Collection Date: 19-Aug-2014 13:45

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-04  
 Matrix:Water

| ANALYSES                   | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| 1,1,2,2-Tetrachloroethane  | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| 1,1,2-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| 1,1-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| 1,1-Dichloroethene         | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| 1,2,4-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| 1,2-Dibromoethane          | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| 1,2-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| 1,2-Dichloropropane        | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| 1,3,5-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| 2-Butanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 22-Aug-2014 21:25 |
| 2-Hexanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 22-Aug-2014 21:25 |
| 4-Isopropyltoluene         | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| 4-Methyl-2-pentanone       | ND     |                      | 0.010           | mg/L        | 1                  | 22-Aug-2014 21:25 |
| Acetone                    | ND     |                      | 0.010           | mg/L        | 1                  | 22-Aug-2014 21:25 |
| Benzene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| Bromodichloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| Bromoform                  | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| Bromomethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| Carbon disulfide           | ND     |                      | 0.010           | mg/L        | 1                  | 22-Aug-2014 21:25 |
| Carbon tetrachloride       | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| Chlorobenzene              | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| Chloroethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| Chloroform                 | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| Chloromethane              | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| cis-1,2-Dichloroethene     | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| cis-1,3-Dichloropropene    | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| Dibromochloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| Ethylbenzene               | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| Isopropylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| m,p-Xylene                 | ND     |                      | 0.010           | mg/L        | 1                  | 22-Aug-2014 21:25 |
| Methyl tert-butyl ether    | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| Methylene chloride         | ND     |                      | 0.010           | mg/L        | 1                  | 22-Aug-2014 21:25 |
| Naphthalene                | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| n-Butylbenzene             | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| n-Propylbenzene            | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| o-Xylene                   | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| sec-Butylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| Styrene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| Tetrachloroethene          | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| Toluene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |
| trans-1,2-Dichloroethene   | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:25 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-28  
Collection Date: 19-Aug-2014 13:45

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
Lab ID:HS14080747-04  
Matrix:Water

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 |       |                    | Analyst: PC       |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L  | 1                  | 22-Aug-2014 21:25 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L  | 1                  | 22-Aug-2014 21:25 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L  | 1                  | 22-Aug-2014 21:25 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L  | 1                  | 22-Aug-2014 21:25 |
| Surr: 1,2-Dichloroethane-d4 | 87.8   |                      | 70-125          | %REC  | 1                  | 22-Aug-2014 21:25 |
| Surr: 4-Bromofluorobenzene  | 98.7   |                      | 72-125          | %REC  | 1                  | 22-Aug-2014 21:25 |
| Surr: Dibromofluoromethane  | 89.5   |                      | 71-125          | %REC  | 1                  | 22-Aug-2014 21:25 |
| Surr: Toluene-d8            | 99.8   |                      | 75-125          | %REC  | 1                  | 22-Aug-2014 21:25 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-28  
 Collection Date: 19-Aug-2014 13:45

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-04  
 Matrix:Water

| ANALYSES                          | RESULT      | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------------|-------------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>    |             | <b>Method:SW8270</b> |                 | Prep:SW3510 / 22-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                     | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| 1-Methylnaphthalene               | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| 2,4,5-Trichlorophenol             | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| 2,4,6-Trichlorophenol             | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| 2,4-Dichlorophenol                | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| 2,4-Dimethylphenol                | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| 2,4-Dinitrophenol                 | ND          |                      | 1.0             | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| 2,4-Dinitrotoluene                | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| 2,6-Dinitrotoluene                | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| 2-Chloronaphthalene               | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| 2-Chlorophenol                    | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| 2-Methylnaphthalene               | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| 2-Methylphenol                    | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| 2-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| 2-Nitrophenol                     | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| 3&4-Methylphenol                  | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| 3,3'-Dichlorobenzidine            | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| 3-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| 4,6-Dinitro-2-methylphenol        | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| 4-Bromophenyl phenyl ether        | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| 4-Chloro-3-methylphenol           | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| 4-Chloroaniline                   | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| 4-Chlorophenyl phenyl ether       | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| 4-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| 4-Nitrophenol                     | ND          |                      | 1.0             | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| Acenaphthene                      | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| Acenaphthylene                    | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| Acetophenone                      | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| Anthracene                        | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| Atrazine                          | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| Benz(a)anthracene                 | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| Benzaldehyde                      | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| Benzo(a)pyrene                    | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| Benzo(b)fluoranthene              | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| Benzo(g,h,i)perylene              | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| Benzo(k)fluoranthene              | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| Bis(2-chloroethoxy)methane        | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| Bis(2-chloroethyl)ether           | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| Bis(2-chloroisopropyl)ether       | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>0.52</b> |                      | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 22-Aug-2014 22:21 |
| Butyl benzyl phthalate            | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |
| Caprolactam                       | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-28  
 Collection Date: 19-Aug-2014 13:45

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-04  
 Matrix:Water

| ANALYSES                                  | RESULT      | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED         |
|-------------------------------------------|-------------|-----------------------|-----------------|---------------------------|--------------------|--------------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>            |             | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 22-Aug-2014 |                    | Analyst: LG              |
| Carbazole                                 | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21        |
| Chrysene                                  | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:21        |
| Dibenz(a,h)anthracene                     | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:21        |
| Dibenzofuran                              | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:21        |
| <b>Diethyl phthalate</b>                  | <b>0.37</b> |                       | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 22-Aug-2014 22:21        |
| Dimethyl phthalate                        | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21        |
| Di-n-butyl phthalate                      | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21        |
| <b>Di-n-octyl phthalate</b>               | <b>0.88</b> |                       | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 22-Aug-2014 22:21        |
| Fluoranthene                              | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:21        |
| Fluorene                                  | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:21        |
| Hexachlorobenzene                         | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21        |
| Hexachlorobutadiene                       | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21        |
| Hexachlorocyclopentadiene                 | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21        |
| Hexachloroethane                          | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21        |
| Indeno(1,2,3-cd)pyrene                    | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:21        |
| Isophorone                                | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21        |
| Naphthalene                               | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:21        |
| Nitrobenzene                              | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21        |
| N-Nitrosodi-n-propylamine                 | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21        |
| N-Nitrosodiphenylamine                    | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21        |
| Pentachlorophenol                         | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21        |
| Phenanthrene                              | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:21        |
| Phenol                                    | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:21        |
| Pyrene                                    | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:21        |
| <i>Surr: 2,4,6-Tribromophenol</i>         | <i>94.5</i> |                       | <i>34-129</i>   | <i>%REC</i>               | <i>1</i>           | <i>22-Aug-2014 22:21</i> |
| <i>Surr: 2-Fluorobiphenyl</i>             | <i>61.0</i> |                       | <i>40-125</i>   | <i>%REC</i>               | <i>1</i>           | <i>22-Aug-2014 22:21</i> |
| <i>Surr: 2-Fluorophenol</i>               | <i>52.1</i> |                       | <i>20-120</i>   | <i>%REC</i>               | <i>1</i>           | <i>22-Aug-2014 22:21</i> |
| <i>Surr: 4-Terphenyl-d14</i>              | <i>82.6</i> |                       | <i>40-135</i>   | <i>%REC</i>               | <i>1</i>           | <i>22-Aug-2014 22:21</i> |
| <i>Surr: Nitrobenzene-d5</i>              | <i>58.7</i> |                       | <i>41-120</i>   | <i>%REC</i>               | <i>1</i>           | <i>22-Aug-2014 22:21</i> |
| <i>Surr: Phenol-d6</i>                    | <i>59.5</i> |                       | <i>20-120</i>   | <i>%REC</i>               | <i>1</i>           | <i>22-Aug-2014 22:21</i> |
| <b>ALKALINITY BY SM2320B</b>              |             | <b>Method:SM2320B</b> |                 | Analyst: MYC              |                    |                          |
| <b>Alkalinity, Bicarbonate (As CaCO3)</b> | <b>218</b>  |                       | <b>5.00</b>     | <b>mg/L</b>               | 1                  | 26-Aug-2014 21:45        |
| Alkalinity, Carbonate (As CaCO3)          | ND          |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 21:45        |
| Alkalinity, Hydroxide (As CaCO3)          | ND          |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 21:45        |
| <b>Alkalinity, Total (As CaCO3)</b>       | <b>218</b>  |                       | <b>5.00</b>     | <b>mg/L</b>               | 1                  | 26-Aug-2014 21:45        |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-28  
 Collection Date: 19-Aug-2014 13:45

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-04  
 Matrix:Water

| ANALYSES                                     | RESULT | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|--------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |        | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 0.947  |                          | 0.0100          | mg/L                       | 1                  | 28-Aug-2014 17:56 |
| Arsenic                                      | ND     |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:56 |
| Barium                                       | 0.106  |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:56 |
| Boron                                        | 0.205  |                          | 0.0200          | mg/L                       | 1                  | 28-Aug-2014 17:56 |
| Cadmium                                      | ND     |                          | 0.00200         | mg/L                       | 1                  | 28-Aug-2014 17:56 |
| Calcium                                      | 90.8   |                          | 0.500           | mg/L                       | 1                  | 28-Aug-2014 17:56 |
| Chromium                                     | 0.0238 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:56 |
| Cobalt                                       | ND     |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:56 |
| Copper                                       | 0.0396 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:56 |
| Iron                                         | 0.760  |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 17:56 |
| Lead                                         | ND     |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:56 |
| Magnesium                                    | 12.1   |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 17:56 |
| Manganese                                    | 0.0128 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:56 |
| Molybdenum                                   | ND     |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:56 |
| Nickel                                       | 0.0129 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:56 |
| Potassium                                    | 2.11   |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 17:56 |
| Selenium                                     | ND     |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:56 |
| Silver                                       | ND     |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:56 |
| Sodium                                       | 39.4   |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 17:56 |
| Uranium                                      | ND     |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:56 |
| Zinc                                         | 0.0335 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 17:56 |
| <b>MERCURY BY SW7470A</b>                    |        | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 22-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND     |                          | 0.000200        | mg/L                       | 1                  | 22-Aug-2014 16:30 |
| <b>PH BY SM4500H+ B</b>                      |        | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 7.90   | H                        | 0.100           | pH Units                   | 1                  | 26-Aug-2014 21:45 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |        | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 749    |                          | 5.00            | umhos/cm                   | 1                  | 30-Aug-2014 15:31 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |        | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 512    |                          | 10.0            | mg/L                       | 1                  | 25-Aug-2014 18:30 |
| <b>ANIONS BY E300.0</b>                      |        | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 70.0   |                          | 0.500           | mg/L                       | 1                  | 03-Sep-2014 12:53 |
| Fluoride                                     | 1.65   |                          | 0.100           | mg/L                       | 1                  | 03-Sep-2014 12:53 |
| Sulfate                                      | 78.2   |                          | 0.500           | mg/L                       | 1                  | 03-Sep-2014 12:53 |
| <b>NITRATE/NITRITE BY E300.0</b>             |        | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 2.31   |                          | 1.00            | mg/L                       | 5                  | 04-Sep-2014 05:30 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-19  
 Collection Date: 19-Aug-2014 15:10

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-05  
 Matrix:Water

| ANALYSES                   | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| 1,1,2,2-Tetrachloroethane  | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| 1,1,2-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| 1,1-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| 1,1-Dichloroethene         | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| 1,2,4-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| 1,2-Dibromoethane          | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| 1,2-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| 1,2-Dichloropropane        | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| 1,3,5-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| 2-Butanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 22-Aug-2014 21:54 |
| 2-Hexanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 22-Aug-2014 21:54 |
| 4-Isopropyltoluene         | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| 4-Methyl-2-pentanone       | ND     |                      | 0.010           | mg/L        | 1                  | 22-Aug-2014 21:54 |
| Acetone                    | ND     |                      | 0.010           | mg/L        | 1                  | 22-Aug-2014 21:54 |
| Benzene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| Bromodichloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| Bromoform                  | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| Bromomethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| Carbon disulfide           | ND     |                      | 0.010           | mg/L        | 1                  | 22-Aug-2014 21:54 |
| Carbon tetrachloride       | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| Chlorobenzene              | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| Chloroethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| Chloroform                 | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| Chloromethane              | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| cis-1,2-Dichloroethene     | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| cis-1,3-Dichloropropene    | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| Dibromochloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| Ethylbenzene               | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| Isopropylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| m,p-Xylene                 | ND     |                      | 0.010           | mg/L        | 1                  | 22-Aug-2014 21:54 |
| Methyl tert-butyl ether    | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| Methylene chloride         | ND     |                      | 0.010           | mg/L        | 1                  | 22-Aug-2014 21:54 |
| Naphthalene                | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| n-Butylbenzene             | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| n-Propylbenzene            | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| o-Xylene                   | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| sec-Butylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| Styrene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| Tetrachloroethene          | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| Toluene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| trans-1,2-Dichloroethene   | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-19  
Collection Date: 19-Aug-2014 15:10

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
Lab ID:HS14080747-05  
Matrix:Water

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 22-Aug-2014 21:54 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 22-Aug-2014 21:54 |
| Surr: 1,2-Dichloroethane-d4 | 88.3   |                      | 70-125          | %REC        | 1                  | 22-Aug-2014 21:54 |
| Surr: 4-Bromofluorobenzene  | 97.7   |                      | 72-125          | %REC        | 1                  | 22-Aug-2014 21:54 |
| Surr: Dibromofluoromethane  | 91.5   |                      | 71-125          | %REC        | 1                  | 22-Aug-2014 21:54 |
| Surr: Toluene-d8            | 99.1   |                      | 75-125          | %REC        | 1                  | 22-Aug-2014 21:54 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-19  
 Collection Date: 19-Aug-2014 15:10

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-05  
 Matrix:Water

| ANALYSES                       | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|--------------------------------|--------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b> |        | <b>Method:SW8270</b> |                 | Prep:SW3510 / 22-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                  | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| 1-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| 2,4,5-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| 2,4,6-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| 2,4-Dichlorophenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| 2,4-Dimethylphenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| 2,4-Dinitrophenol              | ND     |                      | 1.0             | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| 2,4-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| 2,6-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| 2-Chloronaphthalene            | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| 2-Chlorophenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| 2-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| 2-Methylphenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| 2-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| 2-Nitrophenol                  | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| 3&4-Methylphenol               | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| 3,3'-Dichlorobenzidine         | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| 3-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| 4,6-Dinitro-2-methylphenol     | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| 4-Bromophenyl phenyl ether     | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| 4-Chloro-3-methylphenol        | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| 4-Chloroaniline                | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| 4-Chlorophenyl phenyl ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| 4-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| 4-Nitrophenol                  | ND     |                      | 1.0             | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Acenaphthene                   | ND     |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Acenaphthylene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Acetophenone                   | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Anthracene                     | ND     |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Atrazine                       | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Benz(a)anthracene              | ND     |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Benzaldehyde                   | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Benzo(a)pyrene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Benzo(b)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Benzo(g,h,i)perylene           | ND     |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Benzo(k)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Bis(2-chloroethoxy)methane     | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Bis(2-chloroethyl)ether        | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Bis(2-chloroisopropyl)ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Bis(2-ethylhexyl)phthalate     | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Butyl benzyl phthalate         | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Caprolactam                    | ND     |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-19  
 Collection Date: 19-Aug-2014 15:10

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-05  
 Matrix:Water

| ANALYSES                           | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 22-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Chrysene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Dibenz(a,h)anthracene              | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Dibenzofuran                       | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Diethyl phthalate                  | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Dimethyl phthalate                 | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Di-n-butyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Di-n-octyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Fluoranthene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Fluorene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Hexachlorobenzene                  | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Hexachlorobutadiene                | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Hexachlorocyclopentadiene          | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Hexachloroethane                   | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Indeno(1,2,3-cd)pyrene             | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Isophorone                         | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Naphthalene                        | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Nitrobenzene                       | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| N-Nitrosodi-n-propylamine          | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| N-Nitrosodiphenylamine             | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Pentachlorophenol                  | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Phenanthrene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Phenol                             | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Pyrene                             | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 22:42 |
| Surr: 2,4,6-Tribromophenol         | 82.4   |                       | 34-129          | %REC                      | 1                  | 22-Aug-2014 22:42 |
| Surr: 2-Fluorobiphenyl             | 73.0   |                       | 40-125          | %REC                      | 1                  | 22-Aug-2014 22:42 |
| Surr: 2-Fluorophenol               | 72.1   |                       | 20-120          | %REC                      | 1                  | 22-Aug-2014 22:42 |
| Surr: 4-Terphenyl-d14              | 75.7   |                       | 40-135          | %REC                      | 1                  | 22-Aug-2014 22:42 |
| Surr: Nitrobenzene-d5              | 79.1   |                       | 41-120          | %REC                      | 1                  | 22-Aug-2014 22:42 |
| Surr: Phenol-d6                    | 80.2   |                       | 20-120          | %REC                      | 1                  | 22-Aug-2014 22:42 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method:SM2320B</b> |                 |                           |                    | Analyst: MYC      |
| Alkalinity, Bicarbonate (As CaCO3) | 216    |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 21:59 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 21:59 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 21:59 |
| Alkalinity, Total (As CaCO3)       | 216    |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 21:59 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-19  
 Collection Date: 19-Aug-2014 15:10

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-05  
 Matrix:Water

| ANALYSES                                     | RESULT  | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |         | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 0.0461  |                          | 0.0100          | mg/L                       | 1                  | 28-Aug-2014 18:04 |
| Arsenic                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:04 |
| Barium                                       | 0.269   |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:04 |
| Boron                                        | 0.279   |                          | 0.0200          | mg/L                       | 1                  | 28-Aug-2014 18:04 |
| Cadmium                                      | ND      |                          | 0.00200         | mg/L                       | 1                  | 28-Aug-2014 18:04 |
| Calcium                                      | 116     |                          | 0.500           | mg/L                       | 1                  | 28-Aug-2014 18:04 |
| Chromium                                     | 0.0352  |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:04 |
| Cobalt                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:04 |
| Copper                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:04 |
| Iron                                         | 0.263   |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:04 |
| Lead                                         | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:04 |
| Magnesium                                    | 12.6    |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:04 |
| Manganese                                    | 0.0204  |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:04 |
| Molybdenum                                   | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:04 |
| Nickel                                       | 0.0261  |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:04 |
| Potassium                                    | 3.23    |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:04 |
| Selenium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:04 |
| Silver                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:04 |
| Sodium                                       | 168     |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:04 |
| Uranium                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:04 |
| Zinc                                         | 0.00854 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:04 |
| <b>MERCURY BY SW7470A</b>                    |         | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 22-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND      |                          | 0.000200        | mg/L                       | 1                  | 22-Aug-2014 16:32 |
| <b>PH BY SM4500H+ B</b>                      |         | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 7.83    | H                        | 0.100           | pH Units                   | 1                  | 26-Aug-2014 21:59 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |         | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 1,290   |                          | 5.00            | umhos/cm                   | 1                  | 30-Aug-2014 15:34 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |         | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 774     |                          | 10.0            | mg/L                       | 1                  | 25-Aug-2014 18:30 |
| <b>ANIONS BY E300.0</b>                      |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 233     |                          | 2.50            | mg/L                       | 5                  | 03-Sep-2014 13:14 |
| Fluoride                                     | 0.592   |                          | 0.500           | mg/L                       | 5                  | 03-Sep-2014 13:14 |
| Sulfate                                      | 84.5    |                          | 2.50            | mg/L                       | 5                  | 03-Sep-2014 13:14 |
| <b>NITRATE/NITRITE BY E300.0</b>             |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 2.48    |                          | 1.00            | mg/L                       | 5                  | 04-Sep-2014 05:52 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-20  
 Collection Date: 19-Aug-2014 16:00

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-06  
 Matrix:Water

| ANALYSES                   | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| 1,1,2,2-Tetrachloroethane  | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| 1,1,2-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| 1,1-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| 1,1-Dichloroethene         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| 1,2,4-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| 1,2-Dibromoethane          | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| 1,2-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| 1,2-Dichloropropane        | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| 1,3,5-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| 2-Butanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 12:33 |
| 2-Hexanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 12:33 |
| 4-Isopropyltoluene         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| 4-Methyl-2-pentanone       | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 12:33 |
| Acetone                    | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 12:33 |
| Benzene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| Bromodichloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| Bromoform                  | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| Bromomethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| Carbon disulfide           | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 12:33 |
| Carbon tetrachloride       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| Chlorobenzene              | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| Chloroethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| Chloroform                 | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| Chloromethane              | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| cis-1,2-Dichloroethene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| cis-1,3-Dichloropropene    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| Dibromochloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| Ethylbenzene               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| Isopropylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| m,p-Xylene                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 12:33 |
| Methyl tert-butyl ether    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| Methylene chloride         | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 12:33 |
| Naphthalene                | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| n-Butylbenzene             | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| n-Propylbenzene            | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| o-Xylene                   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| sec-Butylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| Styrene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| Tetrachloroethene          | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| Toluene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| trans-1,2-Dichloroethene   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-20  
Collection Date: 19-Aug-2014 16:00

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
Lab ID:HS14080747-06  
Matrix:Water

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 25-Aug-2014 12:33 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 25-Aug-2014 12:33 |
| Surr: 1,2-Dichloroethane-d4 | 89.5   |                      | 70-125          | %REC        | 1                  | 25-Aug-2014 12:33 |
| Surr: 4-Bromofluorobenzene  | 101    |                      | 72-125          | %REC        | 1                  | 25-Aug-2014 12:33 |
| Surr: Dibromofluoromethane  | 95.0   |                      | 71-125          | %REC        | 1                  | 25-Aug-2014 12:33 |
| Surr: Toluene-d8            | 101    |                      | 75-125          | %REC        | 1                  | 25-Aug-2014 12:33 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-20  
 Collection Date: 19-Aug-2014 16:00

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-06  
 Matrix:Water

| ANALYSES                          | RESULT      | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------------|-------------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>    |             | <b>Method:SW8270</b> |                 | Prep:SW3510 / 22-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                     | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| 1-Methylnaphthalene               | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| 2,4,5-Trichlorophenol             | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| 2,4,6-Trichlorophenol             | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| 2,4-Dichlorophenol                | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| 2,4-Dimethylphenol                | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| 2,4-Dinitrophenol                 | ND          |                      | 1.0             | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| 2,4-Dinitrotoluene                | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| 2,6-Dinitrotoluene                | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| 2-Chloronaphthalene               | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| 2-Chlorophenol                    | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| 2-Methylnaphthalene               | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| 2-Methylphenol                    | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| 2-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| 2-Nitrophenol                     | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| 3&4-Methylphenol                  | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| 3,3'-Dichlorobenzidine            | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| 3-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| 4,6-Dinitro-2-methylphenol        | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| 4-Bromophenyl phenyl ether        | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| 4-Chloro-3-methylphenol           | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| 4-Chloroaniline                   | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| 4-Chlorophenyl phenyl ether       | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| 4-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| 4-Nitrophenol                     | ND          |                      | 1.0             | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| Acenaphthene                      | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| Acenaphthylene                    | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| Acetophenone                      | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| Anthracene                        | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| Atrazine                          | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| Benz(a)anthracene                 | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| Benzaldehyde                      | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| Benzo(a)pyrene                    | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| Benzo(b)fluoranthene              | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| Benzo(g,h,i)perylene              | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| Benzo(k)fluoranthene              | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| Bis(2-chloroethoxy)methane        | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| Bis(2-chloroethyl)ether           | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| Bis(2-chloroisopropyl)ether       | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>0.25</b> |                      | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 22-Aug-2014 23:02 |
| Butyl benzyl phthalate            | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |
| Caprolactam                       | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-20  
 Collection Date: 19-Aug-2014 16:00

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-06  
 Matrix:Water

| ANALYSES                                  | RESULT      | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED         |
|-------------------------------------------|-------------|-----------------------|-----------------|---------------------------|--------------------|--------------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>            |             | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 22-Aug-2014 |                    | Analyst: LG              |
| Carbazole                                 | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02        |
| Chrysene                                  | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:02        |
| Dibenz(a,h)anthracene                     | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:02        |
| Dibenzofuran                              | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:02        |
| Diethyl phthalate                         | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02        |
| Dimethyl phthalate                        | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02        |
| Di-n-butyl phthalate                      | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02        |
| <b>Di-n-octyl phthalate</b>               | <b>0.47</b> |                       | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 22-Aug-2014 23:02        |
| Fluoranthene                              | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:02        |
| Fluorene                                  | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:02        |
| Hexachlorobenzene                         | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02        |
| Hexachlorobutadiene                       | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02        |
| Hexachlorocyclopentadiene                 | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02        |
| Hexachloroethane                          | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02        |
| Indeno(1,2,3-cd)pyrene                    | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:02        |
| Isophorone                                | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02        |
| Naphthalene                               | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:02        |
| Nitrobenzene                              | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02        |
| N-Nitrosodi-n-propylamine                 | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02        |
| N-Nitrosodiphenylamine                    | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02        |
| Pentachlorophenol                         | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02        |
| Phenanthrene                              | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:02        |
| Phenol                                    | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:02        |
| Pyrene                                    | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:02        |
| <i>Surr: 2,4,6-Tribromophenol</i>         | <i>85.0</i> |                       | <i>34-129</i>   | <i>%REC</i>               | <i>1</i>           | <i>22-Aug-2014 23:02</i> |
| <i>Surr: 2-Fluorobiphenyl</i>             | <i>63.7</i> |                       | <i>40-125</i>   | <i>%REC</i>               | <i>1</i>           | <i>22-Aug-2014 23:02</i> |
| <i>Surr: 2-Fluorophenol</i>               | <i>48.9</i> |                       | <i>20-120</i>   | <i>%REC</i>               | <i>1</i>           | <i>22-Aug-2014 23:02</i> |
| <i>Surr: 4-Terphenyl-d14</i>              | <i>83.4</i> |                       | <i>40-135</i>   | <i>%REC</i>               | <i>1</i>           | <i>22-Aug-2014 23:02</i> |
| <i>Surr: Nitrobenzene-d5</i>              | <i>65.9</i> |                       | <i>41-120</i>   | <i>%REC</i>               | <i>1</i>           | <i>22-Aug-2014 23:02</i> |
| <i>Surr: Phenol-d6</i>                    | <i>60.5</i> |                       | <i>20-120</i>   | <i>%REC</i>               | <i>1</i>           | <i>22-Aug-2014 23:02</i> |
| <b>ALKALINITY BY SM2320B</b>              |             | <b>Method:SM2320B</b> |                 |                           |                    | Analyst: MYC             |
| <b>Alkalinity, Bicarbonate (As CaCO3)</b> | <b>203</b>  |                       | <b>5.00</b>     | <b>mg/L</b>               | 1                  | 26-Aug-2014 22:05        |
| Alkalinity, Carbonate (As CaCO3)          | ND          |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 22:05        |
| Alkalinity, Hydroxide (As CaCO3)          | ND          |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 22:05        |
| <b>Alkalinity, Total (As CaCO3)</b>       | <b>203</b>  |                       | <b>5.00</b>     | <b>mg/L</b>               | 1                  | 26-Aug-2014 22:05        |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-20  
 Collection Date: 19-Aug-2014 16:00

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-06  
 Matrix:Water

| ANALYSES                                     | RESULT | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|--------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |        | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 0.290  |                          | 0.0100          | mg/L                       | 1                  | 28-Aug-2014 18:07 |
| Arsenic                                      | ND     |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:07 |
| Barium                                       | 0.108  |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:07 |
| Boron                                        | 0.194  |                          | 0.0200          | mg/L                       | 1                  | 28-Aug-2014 18:07 |
| Cadmium                                      | ND     |                          | 0.00200         | mg/L                       | 1                  | 28-Aug-2014 18:07 |
| Calcium                                      | 111    |                          | 0.500           | mg/L                       | 1                  | 28-Aug-2014 18:07 |
| Chromium                                     | ND     |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:07 |
| Cobalt                                       | ND     |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:07 |
| Copper                                       | ND     |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:07 |
| Iron                                         | ND     |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:07 |
| Lead                                         | ND     |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:07 |
| Magnesium                                    | 13.1   |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:07 |
| Manganese                                    | ND     |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:07 |
| Molybdenum                                   | ND     |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:07 |
| Nickel                                       | ND     |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:07 |
| Potassium                                    | 2.09   |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:07 |
| Selenium                                     | ND     |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:07 |
| Silver                                       | ND     |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:07 |
| Sodium                                       | 41.2   |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:07 |
| Uranium                                      | ND     |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:07 |
| Zinc                                         | 0.0116 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:07 |
| <b>MERCURY BY SW7470A</b>                    |        | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 22-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND     |                          | 0.000200        | mg/L                       | 1                  | 22-Aug-2014 16:37 |
| <b>PH BY SM4500H+ B</b>                      |        | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 7.86   | H                        | 0.100           | pH Units                   | 1                  | 26-Aug-2014 22:05 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |        | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 904    |                          | 5.00            | umhos/cm                   | 1                  | 30-Aug-2014 15:36 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |        | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 672    |                          | 10.0            | mg/L                       | 1                  | 25-Aug-2014 18:30 |
| <b>ANIONS BY E300.0</b>                      |        | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 138    |                          | 2.50            | mg/L                       | 5                  | 03-Sep-2014 13:36 |
| Fluoride                                     | 0.574  |                          | 0.500           | mg/L                       | 5                  | 03-Sep-2014 13:36 |
| Sulfate                                      | 58.5   |                          | 2.50            | mg/L                       | 5                  | 03-Sep-2014 13:36 |
| <b>NITRATE/NITRITE BY E300.0</b>             |        | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 2.09   |                          | 1.00            | mg/L                       | 5                  | 04-Sep-2014 06:13 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-25  
 Collection Date: 19-Aug-2014 18:05

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-07  
 Matrix:Water

| ANALYSES                   | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| 1,1,2,2-Tetrachloroethane  | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| 1,1,2-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| 1,1-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| 1,1-Dichloroethene         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| 1,2,4-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| 1,2-Dibromoethane          | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| 1,2-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| 1,2-Dichloropropane        | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| 1,3,5-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| 2-Butanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 15:02 |
| 2-Hexanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 15:02 |
| 4-Isopropyltoluene         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| 4-Methyl-2-pentanone       | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 15:02 |
| Acetone                    | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 15:02 |
| Benzene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| Bromodichloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| Bromoform                  | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| Bromomethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| Carbon disulfide           | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 15:02 |
| Carbon tetrachloride       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| Chlorobenzene              | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| Chloroethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| Chloroform                 | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| Chloromethane              | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| cis-1,2-Dichloroethene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| cis-1,3-Dichloropropene    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| Dibromochloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| Ethylbenzene               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| Isopropylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| m,p-Xylene                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 15:02 |
| Methyl tert-butyl ether    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| Methylene chloride         | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 15:02 |
| Naphthalene                | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| n-Butylbenzene             | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| n-Propylbenzene            | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| o-Xylene                   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| sec-Butylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| Styrene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| Tetrachloroethene          | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| Toluene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |
| trans-1,2-Dichloroethene   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:02 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-25  
Collection Date: 19-Aug-2014 18:05

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
Lab ID:HS14080747-07  
Matrix:Water

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 |       |                    | Analyst: PC       |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L  | 1                  | 25-Aug-2014 15:02 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L  | 1                  | 25-Aug-2014 15:02 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L  | 1                  | 25-Aug-2014 15:02 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L  | 1                  | 25-Aug-2014 15:02 |
| Surr: 1,2-Dichloroethane-d4 | 94.5   |                      | 70-125          | %REC  | 1                  | 25-Aug-2014 15:02 |
| Surr: 4-Bromofluorobenzene  | 98.9   |                      | 72-125          | %REC  | 1                  | 25-Aug-2014 15:02 |
| Surr: Dibromofluoromethane  | 100    |                      | 71-125          | %REC  | 1                  | 25-Aug-2014 15:02 |
| Surr: Toluene-d8            | 98.4   |                      | 75-125          | %REC  | 1                  | 25-Aug-2014 15:02 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-25  
 Collection Date: 19-Aug-2014 18:05

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-07  
 Matrix:Water

| ANALYSES                       | RESULT      | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|--------------------------------|-------------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b> |             | <b>Method:SW8270</b> |                 | Prep:SW3510 / 22-Aug-2014 |                    | Analyst: LG       |
| <b>1,1'-Biphenyl</b>           | <b>0.29</b> |                      | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 22-Aug-2014 23:22 |
| 1-Methylnaphthalene            | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| 2,4,5-Trichlorophenol          | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| 2,4,6-Trichlorophenol          | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| 2,4-Dichlorophenol             | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| 2,4-Dimethylphenol             | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| 2,4-Dinitrophenol              | ND          |                      | 1.0             | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| 2,4-Dinitrotoluene             | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| 2,6-Dinitrotoluene             | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| 2-Chloronaphthalene            | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| 2-Chlorophenol                 | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| 2-Methylnaphthalene            | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| 2-Methylphenol                 | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| 2-Nitroaniline                 | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| 2-Nitrophenol                  | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| 3&4-Methylphenol               | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| 3,3'-Dichlorobenzidine         | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| 3-Nitroaniline                 | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| 4,6-Dinitro-2-methylphenol     | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| 4-Bromophenyl phenyl ether     | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| 4-Chloro-3-methylphenol        | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| 4-Chloroaniline                | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| 4-Chlorophenyl phenyl ether    | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| 4-Nitroaniline                 | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| 4-Nitrophenol                  | ND          |                      | 1.0             | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Acenaphthene                   | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Acenaphthylene                 | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Acetophenone                   | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Anthracene                     | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Atrazine                       | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Benz(a)anthracene              | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Benzaldehyde                   | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Benzo(a)pyrene                 | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Benzo(b)fluoranthene           | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Benzo(g,h,i)perylene           | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Benzo(k)fluoranthene           | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Bis(2-chloroethoxy)methane     | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Bis(2-chloroethyl)ether        | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Bis(2-chloroisopropyl)ether    | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Bis(2-ethylhexyl)phthalate     | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Butyl benzyl phthalate         | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Caprolactam                    | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-25  
 Collection Date: 19-Aug-2014 18:05

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-07  
 Matrix:Water

| ANALYSES                           | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 22-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Chrysene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Dibenz(a,h)anthracene              | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Dibenzofuran                       | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Diethyl phthalate                  | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Dimethyl phthalate                 | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Di-n-butyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Di-n-octyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Fluoranthene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Fluorene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Hexachlorobenzene                  | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Hexachlorobutadiene                | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Hexachlorocyclopentadiene          | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Hexachloroethane                   | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Indeno(1,2,3-cd)pyrene             | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Isophorone                         | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Naphthalene                        | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Nitrobenzene                       | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| N-Nitrosodi-n-propylamine          | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| N-Nitrosodiphenylamine             | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Pentachlorophenol                  | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Phenanthrene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Phenol                             | ND     |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Pyrene                             | ND     |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:22 |
| Surr: 2,4,6-Tribromophenol         | 88.1   |                       | 34-129          | %REC                      | 1                  | 22-Aug-2014 23:22 |
| Surr: 2-Fluorobiphenyl             | 77.2   |                       | 40-125          | %REC                      | 1                  | 22-Aug-2014 23:22 |
| Surr: 2-Fluorophenol               | 60.8   |                       | 20-120          | %REC                      | 1                  | 22-Aug-2014 23:22 |
| Surr: 4-Terphenyl-d14              | 77.3   |                       | 40-135          | %REC                      | 1                  | 22-Aug-2014 23:22 |
| Surr: Nitrobenzene-d5              | 81.6   |                       | 41-120          | %REC                      | 1                  | 22-Aug-2014 23:22 |
| Surr: Phenol-d6                    | 74.3   |                       | 20-120          | %REC                      | 1                  | 22-Aug-2014 23:22 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method:SM2320B</b> |                 |                           |                    | Analyst: MYC      |
| Alkalinity, Bicarbonate (As CaCO3) | 374    |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 22:11 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 22:11 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 22:11 |
| Alkalinity, Total (As CaCO3)       | 374    |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 22:11 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-25  
 Collection Date: 19-Aug-2014 18:05

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-07  
 Matrix:Water

| ANALYSES                                     | RESULT  | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |         | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 0.285   |                          | 0.0100          | mg/L                       | 1                  | 28-Aug-2014 18:09 |
| Arsenic                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:09 |
| Barium                                       | 0.198   |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:09 |
| Boron                                        | 0.265   |                          | 0.0200          | mg/L                       | 1                  | 28-Aug-2014 18:09 |
| Cadmium                                      | ND      |                          | 0.00200         | mg/L                       | 1                  | 28-Aug-2014 18:09 |
| Calcium                                      | 202     |                          | 50.0            | mg/L                       | 100                | 02-Sep-2014 18:42 |
| Chromium                                     | 0.154   |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:09 |
| Cobalt                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:09 |
| Copper                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:09 |
| Iron                                         | 0.814   |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:09 |
| Lead                                         | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:09 |
| Magnesium                                    | 23.3    |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:09 |
| Manganese                                    | 0.0456  |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:09 |
| Molybdenum                                   | 0.00573 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:09 |
| Nickel                                       | 0.100   |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:09 |
| Potassium                                    | 4.87    |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:09 |
| Selenium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:09 |
| Silver                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:09 |
| Sodium                                       | 116     |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:09 |
| Uranium                                      | 0.00749 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:09 |
| Zinc                                         | 0.0106  |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:09 |
| <b>MERCURY BY SW7470A</b>                    |         | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 22-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND      |                          | 0.000200        | mg/L                       | 1                  | 22-Aug-2014 16:39 |
| <b>PH BY SM4500H+ B</b>                      |         | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 7.62    | H                        | 0.100           | pH Units                   | 1                  | 26-Aug-2014 22:11 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |         | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 1,750   |                          | 5.00            | umhos/cm                   | 1                  | 30-Aug-2014 15:37 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |         | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 1,230   |                          | 10.0            | mg/L                       | 1                  | 25-Aug-2014 18:30 |
| <b>ANIONS BY E300.0</b>                      |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 302     |                          | 2.50            | mg/L                       | 5                  | 03-Sep-2014 13:58 |
| Fluoride                                     | ND      |                          | 0.500           | mg/L                       | 5                  | 03-Sep-2014 13:58 |
| Sulfate                                      | 79.5    |                          | 2.50            | mg/L                       | 5                  | 03-Sep-2014 13:58 |
| <b>NITRATE/NITRITE BY E300.0</b>             |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 3.06    |                          | 1.00            | mg/L                       | 5                  | 04-Sep-2014 06:35 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-21  
 Collection Date: 19-Aug-2014 19:00

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-08  
 Matrix:Water

| ANALYSES                   | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| 1,1,2,2-Tetrachloroethane  | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| 1,1,2-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| 1,1-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| 1,1-Dichloroethene         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| 1,2,4-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| 1,2-Dibromoethane          | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| 1,2-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| 1,2-Dichloropropane        | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| 1,3,5-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| 2-Butanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 15:33 |
| 2-Hexanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 15:33 |
| 4-Isopropyltoluene         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| 4-Methyl-2-pentanone       | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 15:33 |
| Acetone                    | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 15:33 |
| Benzene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| Bromodichloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| Bromoform                  | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| Bromomethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| Carbon disulfide           | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 15:33 |
| Carbon tetrachloride       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| Chlorobenzene              | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| Chloroethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| Chloroform                 | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| Chloromethane              | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| cis-1,2-Dichloroethene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| cis-1,3-Dichloropropene    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| Dibromochloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| Ethylbenzene               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| Isopropylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| m,p-Xylene                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 15:33 |
| Methyl tert-butyl ether    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| Methylene chloride         | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 15:33 |
| Naphthalene                | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| n-Butylbenzene             | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| n-Propylbenzene            | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| o-Xylene                   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| sec-Butylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| Styrene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| Tetrachloroethene          | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| Toluene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| trans-1,2-Dichloroethene   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-21  
Collection Date: 19-Aug-2014 19:00

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
Lab ID:HS14080747-08  
Matrix:Water

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 25-Aug-2014 15:33 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 25-Aug-2014 15:33 |
| Surr: 1,2-Dichloroethane-d4 | 89.9   |                      | 70-125          | %REC        | 1                  | 25-Aug-2014 15:33 |
| Surr: 4-Bromofluorobenzene  | 103    |                      | 72-125          | %REC        | 1                  | 25-Aug-2014 15:33 |
| Surr: Dibromofluoromethane  | 97.1   |                      | 71-125          | %REC        | 1                  | 25-Aug-2014 15:33 |
| Surr: Toluene-d8            | 102    |                      | 75-125          | %REC        | 1                  | 25-Aug-2014 15:33 |

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Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-21  
 Collection Date: 19-Aug-2014 19:00

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-08  
 Matrix:Water

| ANALYSES                          | RESULT      | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------------|-------------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>    |             | <b>Method:SW8270</b> |                 | Prep:SW3510 / 22-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                     | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| 1-Methylnaphthalene               | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| 2,4,5-Trichlorophenol             | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| 2,4,6-Trichlorophenol             | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| 2,4-Dichlorophenol                | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| 2,4-Dimethylphenol                | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| 2,4-Dinitrophenol                 | ND          |                      | 1.0             | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| 2,4-Dinitrotoluene                | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| 2,6-Dinitrotoluene                | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| 2-Chloronaphthalene               | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| 2-Chlorophenol                    | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| 2-Methylnaphthalene               | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| 2-Methylphenol                    | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| 2-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| 2-Nitrophenol                     | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| 3&4-Methylphenol                  | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| 3,3'-Dichlorobenzidine            | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| 3-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| 4,6-Dinitro-2-methylphenol        | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| 4-Bromophenyl phenyl ether        | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| 4-Chloro-3-methylphenol           | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| 4-Chloroaniline                   | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| 4-Chlorophenyl phenyl ether       | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| 4-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| 4-Nitrophenol                     | ND          |                      | 1.0             | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| Acenaphthene                      | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| Acenaphthylene                    | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| Acetophenone                      | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| Anthracene                        | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| Atrazine                          | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| Benz(a)anthracene                 | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| Benzaldehyde                      | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| Benzo(a)pyrene                    | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| Benzo(b)fluoranthene              | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| Benzo(g,h,i)perylene              | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| Benzo(k)fluoranthene              | ND          |                      | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| Bis(2-chloroethoxy)methane        | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| Bis(2-chloroethyl)ether           | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| Bis(2-chloroisopropyl)ether       | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>0.24</b> |                      | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 22-Aug-2014 23:43 |
| Butyl benzyl phthalate            | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |
| Caprolactam                       | ND          |                      | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-21  
 Collection Date: 19-Aug-2014 19:00

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-08  
 Matrix:Water

| ANALYSES                                  | RESULT      | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED         |
|-------------------------------------------|-------------|-----------------------|-----------------|---------------------------|--------------------|--------------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>            |             | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 22-Aug-2014 |                    | Analyst: LG              |
| Carbazole                                 | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43        |
| Chrysene                                  | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:43        |
| Dibenz(a,h)anthracene                     | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:43        |
| Dibenzofuran                              | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:43        |
| Diethyl phthalate                         | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43        |
| Dimethyl phthalate                        | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43        |
| Di-n-butyl phthalate                      | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43        |
| <b>Di-n-octyl phthalate</b>               | <b>0.35</b> |                       | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 22-Aug-2014 23:43        |
| Fluoranthene                              | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:43        |
| Fluorene                                  | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:43        |
| Hexachlorobenzene                         | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43        |
| Hexachlorobutadiene                       | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43        |
| Hexachlorocyclopentadiene                 | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43        |
| Hexachloroethane                          | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43        |
| Indeno(1,2,3-cd)pyrene                    | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:43        |
| Isophorone                                | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43        |
| Naphthalene                               | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:43        |
| Nitrobenzene                              | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43        |
| N-Nitrosodi-n-propylamine                 | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43        |
| N-Nitrosodiphenylamine                    | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43        |
| Pentachlorophenol                         | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43        |
| Phenanthrene                              | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:43        |
| Phenol                                    | ND          |                       | 0.20            | ug/L                      | 1                  | 22-Aug-2014 23:43        |
| Pyrene                                    | ND          |                       | 0.10            | ug/L                      | 1                  | 22-Aug-2014 23:43        |
| <i>Surr: 2,4,6-Tribromophenol</i>         | <i>91.1</i> |                       | <i>34-129</i>   | <i>%REC</i>               | <i>1</i>           | <i>22-Aug-2014 23:43</i> |
| <i>Surr: 2-Fluorobiphenyl</i>             | <i>73.9</i> |                       | <i>40-125</i>   | <i>%REC</i>               | <i>1</i>           | <i>22-Aug-2014 23:43</i> |
| <i>Surr: 2-Fluorophenol</i>               | <i>61.8</i> |                       | <i>20-120</i>   | <i>%REC</i>               | <i>1</i>           | <i>22-Aug-2014 23:43</i> |
| <i>Surr: 4-Terphenyl-d14</i>              | <i>77.1</i> |                       | <i>40-135</i>   | <i>%REC</i>               | <i>1</i>           | <i>22-Aug-2014 23:43</i> |
| <i>Surr: Nitrobenzene-d5</i>              | <i>75.3</i> |                       | <i>41-120</i>   | <i>%REC</i>               | <i>1</i>           | <i>22-Aug-2014 23:43</i> |
| <i>Surr: Phenol-d6</i>                    | <i>74.0</i> |                       | <i>20-120</i>   | <i>%REC</i>               | <i>1</i>           | <i>22-Aug-2014 23:43</i> |
| <b>ALKALINITY BY SM2320B</b>              |             | <b>Method:SM2320B</b> |                 | Analyst: MYC              |                    |                          |
| <b>Alkalinity, Bicarbonate (As CaCO3)</b> | <b>531</b>  |                       | <b>5.00</b>     | <b>mg/L</b>               | 1                  | 26-Aug-2014 22:16        |
| Alkalinity, Carbonate (As CaCO3)          | ND          |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 22:16        |
| Alkalinity, Hydroxide (As CaCO3)          | ND          |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 22:16        |
| <b>Alkalinity, Total (As CaCO3)</b>       | <b>531</b>  |                       | <b>5.00</b>     | <b>mg/L</b>               | 1                  | 26-Aug-2014 22:16        |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-21  
 Collection Date: 19-Aug-2014 19:00

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-08  
 Matrix:Water

| ANALYSES                                     | RESULT  | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |         | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 0.0299  |                          | 0.0100          | mg/L                       | 1                  | 28-Aug-2014 18:12 |
| Arsenic                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:12 |
| Barium                                       | 0.180   |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:12 |
| Boron                                        | 0.350   |                          | 0.0200          | mg/L                       | 1                  | 28-Aug-2014 18:12 |
| Cadmium                                      | ND      |                          | 0.00200         | mg/L                       | 1                  | 28-Aug-2014 18:12 |
| Calcium                                      | 219     |                          | 50.0            | mg/L                       | 100                | 02-Sep-2014 18:44 |
| Chromium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:12 |
| Cobalt                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:12 |
| Copper                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:12 |
| Iron                                         | 0.344   |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:12 |
| Lead                                         | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:12 |
| Magnesium                                    | 20.0    |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:12 |
| Manganese                                    | 0.0439  |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:12 |
| Molybdenum                                   | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:12 |
| Nickel                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:12 |
| Potassium                                    | 2.64    |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:12 |
| Selenium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:12 |
| Silver                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:12 |
| Sodium                                       | 53.2    |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:12 |
| Uranium                                      | 0.00844 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:12 |
| Zinc                                         | 0.0208  |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:12 |
| <b>MERCURY BY SW7470A</b>                    |         | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 22-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND      |                          | 0.000200        | mg/L                       | 1                  | 22-Aug-2014 16:41 |
| <b>PH BY SM4500H+ B</b>                      |         | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 7.48    | H                        | 0.100           | pH Units                   | 1                  | 26-Aug-2014 22:16 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |         | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 1,410   |                          | 5.00            | umhos/cm                   | 1                  | 30-Aug-2014 15:38 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |         | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 938     |                          | 10.0            | mg/L                       | 1                  | 25-Aug-2014 18:30 |
| <b>ANIONS BY E300.0</b>                      |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 156     |                          | 1.00            | mg/L                       | 2                  | 05-Sep-2014 15:43 |
| Fluoride                                     | 0.250   |                          | 0.100           | mg/L                       | 1                  | 03-Sep-2014 14:19 |
| Sulfate                                      | 72.7    |                          | 0.500           | mg/L                       | 1                  | 03-Sep-2014 14:19 |
| <b>NITRATE/NITRITE BY E300.0</b>             |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 3.35    |                          | 1.00            | mg/L                       | 5                  | 04-Sep-2014 06:57 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: Dup-1  
 Collection Date: 19-Aug-2014 00:00

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-09  
 Matrix:Water

| ANALYSES                   | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| 1,1,2,2-Tetrachloroethane  | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| 1,1,2-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| 1,1-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| 1,1-Dichloroethene         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| 1,2,4-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| 1,2-Dibromoethane          | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| 1,2-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| 1,2-Dichloropropane        | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| 1,3,5-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| 2-Butanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 16:05 |
| 2-Hexanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 16:05 |
| 4-Isopropyltoluene         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| 4-Methyl-2-pentanone       | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 16:05 |
| Acetone                    | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 16:05 |
| Benzene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| Bromodichloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| Bromoform                  | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| Bromomethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| Carbon disulfide           | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 16:05 |
| Carbon tetrachloride       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| Chlorobenzene              | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| Chloroethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| Chloroform                 | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| Chloromethane              | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| cis-1,2-Dichloroethene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| cis-1,3-Dichloropropene    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| Dibromochloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| Ethylbenzene               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| Isopropylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| m,p-Xylene                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 16:05 |
| Methyl tert-butyl ether    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| Methylene chloride         | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 16:05 |
| Naphthalene                | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| n-Butylbenzene             | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| n-Propylbenzene            | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| o-Xylene                   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| sec-Butylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| Styrene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| Tetrachloroethene          | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| Toluene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| trans-1,2-Dichloroethene   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: Dup-1  
Collection Date: 19-Aug-2014 00:00

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
Lab ID:HS14080747-09  
Matrix:Water

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 25-Aug-2014 16:05 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 25-Aug-2014 16:05 |
| Surr: 1,2-Dichloroethane-d4 | 97.4   |                      | 70-125          | %REC        | 1                  | 25-Aug-2014 16:05 |
| Surr: 4-Bromofluorobenzene  | 97.4   |                      | 72-125          | %REC        | 1                  | 25-Aug-2014 16:05 |
| Surr: Dibromofluoromethane  | 99.9   |                      | 71-125          | %REC        | 1                  | 25-Aug-2014 16:05 |
| Surr: Toluene-d8            | 98.8   |                      | 75-125          | %REC        | 1                  | 25-Aug-2014 16:05 |

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Client: Navajo Refining Company  
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**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-09  
 Matrix:Water

| ANALYSES                       | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|--------------------------------|--------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b> |        | <b>Method:SW8270</b> |                 | Prep:SW3510 / 22-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                  | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| 1-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| 2,4,5-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| 2,4,6-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| 2,4-Dichlorophenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| 2,4-Dimethylphenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| 2,4-Dinitrophenol              | ND     |                      | 1.0             | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| 2,4-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| 2,6-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| 2-Chloronaphthalene            | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| 2-Chlorophenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| 2-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| 2-Methylphenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| 2-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| 2-Nitrophenol                  | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| 3&4-Methylphenol               | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| 3,3'-Dichlorobenzidine         | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| 3-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| 4,6-Dinitro-2-methylphenol     | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| 4-Bromophenyl phenyl ether     | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| 4-Chloro-3-methylphenol        | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| 4-Chloroaniline                | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| 4-Chlorophenyl phenyl ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| 4-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| 4-Nitrophenol                  | ND     |                      | 1.0             | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Acenaphthene                   | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Acenaphthylene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Acetophenone                   | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Anthracene                     | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Atrazine                       | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Benz(a)anthracene              | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Benzaldehyde                   | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Benzo(a)pyrene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Benzo(b)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Benzo(g,h,i)perylene           | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Benzo(k)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Bis(2-chloroethoxy)methane     | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Bis(2-chloroethyl)ether        | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Bis(2-chloroisopropyl)ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Bis(2-ethylhexyl)phthalate     | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Butyl benzyl phthalate         | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Caprolactam                    | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: Dup-1  
 Collection Date: 19-Aug-2014 00:00

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-09  
 Matrix:Water

| ANALYSES                           | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 22-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Chrysene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Dibenz(a,h)anthracene              | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Dibenzofuran                       | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Diethyl phthalate                  | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Dimethyl phthalate                 | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Di-n-butyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Di-n-octyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Fluoranthene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Fluorene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Hexachlorobenzene                  | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Hexachlorobutadiene                | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Hexachlorocyclopentadiene          | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Hexachloroethane                   | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Indeno(1,2,3-cd)pyrene             | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Isophorone                         | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Naphthalene                        | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Nitrobenzene                       | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| N-Nitrosodi-n-propylamine          | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| N-Nitrosodiphenylamine             | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Pentachlorophenol                  | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Phenanthrene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Phenol                             | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Pyrene                             | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:08 |
| Surr: 2,4,6-Tribromophenol         | 78.2   |                       | 34-129          | %REC                      | 1                  | 25-Aug-2014 22:08 |
| Surr: 2-Fluorobiphenyl             | 74.6   |                       | 40-125          | %REC                      | 1                  | 25-Aug-2014 22:08 |
| Surr: 2-Fluorophenol               | 59.5   |                       | 20-120          | %REC                      | 1                  | 25-Aug-2014 22:08 |
| Surr: 4-Terphenyl-d14              | 71.0   |                       | 40-135          | %REC                      | 1                  | 25-Aug-2014 22:08 |
| Surr: Nitrobenzene-d5              | 69.3   |                       | 41-120          | %REC                      | 1                  | 25-Aug-2014 22:08 |
| Surr: Phenol-d6                    | 65.9   |                       | 20-120          | %REC                      | 1                  | 25-Aug-2014 22:08 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method:SM2320B</b> |                 |                           |                    | Analyst: MYC      |
| Alkalinity, Bicarbonate (As CaCO3) | 218    |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 22:23 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 22:23 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 22:23 |
| Alkalinity, Total (As CaCO3)       | 218    |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 22:23 |

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Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: Dup-1  
 Collection Date: 19-Aug-2014 00:00

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-09  
 Matrix:Water

| ANALYSES                                     | RESULT  | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |         | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 0.0208  |                          | 0.0100          | mg/L                       | 1                  | 28-Aug-2014 18:15 |
| Arsenic                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:15 |
| Barium                                       | 0.0846  |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:15 |
| Boron                                        | 0.236   |                          | 0.0200          | mg/L                       | 1                  | 28-Aug-2014 18:15 |
| Cadmium                                      | ND      |                          | 0.00200         | mg/L                       | 1                  | 28-Aug-2014 18:15 |
| Calcium                                      | 116     |                          | 0.500           | mg/L                       | 1                  | 28-Aug-2014 18:15 |
| Chromium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:15 |
| Cobalt                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:15 |
| Copper                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:15 |
| Iron                                         | ND      |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:15 |
| Lead                                         | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:15 |
| Magnesium                                    | 11.4    |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:15 |
| Manganese                                    | 0.0106  |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:15 |
| Molybdenum                                   | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:15 |
| Nickel                                       | 0.00943 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:15 |
| Potassium                                    | 2.87    |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:15 |
| Selenium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:15 |
| Silver                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:15 |
| Sodium                                       | 115     |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:15 |
| Uranium                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:15 |
| Zinc                                         | 0.00640 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:15 |
| <b>MERCURY BY SW7470A</b>                    |         | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 22-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND      |                          | 0.000200        | mg/L                       | 1                  | 22-Aug-2014 16:42 |
| <b>PH BY SM4500H+ B</b>                      |         | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 7.83    | H                        | 0.100           | pH Units                   | 1                  | 26-Aug-2014 22:23 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |         | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 1,260   |                          | 5.00            | umhos/cm                   | 1                  | 30-Aug-2014 15:39 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |         | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 820     |                          | 10.0            | mg/L                       | 1                  | 25-Aug-2014 18:30 |
| <b>ANIONS BY E300.0</b>                      |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 241     |                          | 2.50            | mg/L                       | 5                  | 03-Sep-2014 14:41 |
| Fluoride                                     | 0.627   |                          | 0.500           | mg/L                       | 5                  | 03-Sep-2014 14:41 |
| Sulfate                                      | 84.7    |                          | 2.50            | mg/L                       | 5                  | 03-Sep-2014 14:41 |
| <b>NITRATE/NITRITE BY E300.0</b>             |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 2.59    |                          | 1.00            | mg/L                       | 5                  | 04-Sep-2014 07:19 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: Dup-2  
 Collection Date: 19-Aug-2014 00:00

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-10  
 Matrix:Water

| ANALYSES                   | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| 1,1,2,2-Tetrachloroethane  | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| 1,1,2-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| 1,1-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| 1,1-Dichloroethene         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| 1,2,4-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| 1,2-Dibromoethane          | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| 1,2-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| 1,2-Dichloropropane        | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| 1,3,5-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| 2-Butanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 16:36 |
| 2-Hexanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 16:36 |
| 4-Isopropyltoluene         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| 4-Methyl-2-pentanone       | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 16:36 |
| Acetone                    | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 16:36 |
| Benzene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| Bromodichloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| Bromoform                  | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| Bromomethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| Carbon disulfide           | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 16:36 |
| Carbon tetrachloride       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| Chlorobenzene              | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| Chloroethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| Chloroform                 | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| Chloromethane              | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| cis-1,2-Dichloroethene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| cis-1,3-Dichloropropene    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| Dibromochloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| Ethylbenzene               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| Isopropylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| m,p-Xylene                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 16:36 |
| Methyl tert-butyl ether    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| Methylene chloride         | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 16:36 |
| Naphthalene                | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| n-Butylbenzene             | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| n-Propylbenzene            | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| o-Xylene                   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| sec-Butylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| Styrene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| Tetrachloroethene          | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| Toluene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| trans-1,2-Dichloroethene   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: Dup-2  
Collection Date: 19-Aug-2014 00:00

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
Lab ID:HS14080747-10  
Matrix:Water

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 25-Aug-2014 16:36 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 25-Aug-2014 16:36 |
| Surr: 1,2-Dichloroethane-d4 | 94.6   |                      | 70-125          | %REC        | 1                  | 25-Aug-2014 16:36 |
| Surr: 4-Bromofluorobenzene  | 98.2   |                      | 72-125          | %REC        | 1                  | 25-Aug-2014 16:36 |
| Surr: Dibromofluoromethane  | 99.4   |                      | 71-125          | %REC        | 1                  | 25-Aug-2014 16:36 |
| Surr: Toluene-d8            | 96.0   |                      | 75-125          | %REC        | 1                  | 25-Aug-2014 16:36 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: Dup-2  
 Collection Date: 19-Aug-2014 00:00

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-10  
 Matrix:Water

| ANALYSES                       | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|--------------------------------|--------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b> |        | <b>Method:SW8270</b> |                 | Prep:SW3510 / 22-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                  | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| 1-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| 2,4,5-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| 2,4,6-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| 2,4-Dichlorophenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| 2,4-Dimethylphenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| 2,4-Dinitrophenol              | ND     |                      | 1.0             | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| 2,4-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| 2,6-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| 2-Chloronaphthalene            | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| 2-Chlorophenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| 2-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| 2-Methylphenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| 2-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| 2-Nitrophenol                  | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| 3&4-Methylphenol               | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| 3,3'-Dichlorobenzidine         | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| 3-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| 4,6-Dinitro-2-methylphenol     | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| 4-Bromophenyl phenyl ether     | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| 4-Chloro-3-methylphenol        | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| 4-Chloroaniline                | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| 4-Chlorophenyl phenyl ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| 4-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| 4-Nitrophenol                  | ND     |                      | 1.0             | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Acenaphthene                   | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Acenaphthylene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Acetophenone                   | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Anthracene                     | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Atrazine                       | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Benz(a)anthracene              | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Benzaldehyde                   | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Benzo(a)pyrene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Benzo(b)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Benzo(g,h,i)perylene           | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Benzo(k)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Bis(2-chloroethoxy)methane     | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Bis(2-chloroethyl)ether        | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Bis(2-chloroisopropyl)ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Bis(2-ethylhexyl)phthalate     | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Butyl benzyl phthalate         | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Caprolactam                    | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: Dup-2  
 Collection Date: 19-Aug-2014 00:00

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-10  
 Matrix:Water

| ANALYSES                           | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 22-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Chrysene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Dibenz(a,h)anthracene              | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Dibenzofuran                       | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Diethyl phthalate                  | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Dimethyl phthalate                 | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Di-n-butyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Di-n-octyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Fluoranthene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Fluorene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Hexachlorobenzene                  | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Hexachlorobutadiene                | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Hexachlorocyclopentadiene          | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Hexachloroethane                   | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Indeno(1,2,3-cd)pyrene             | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Isophorone                         | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Naphthalene                        | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Nitrobenzene                       | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| N-Nitrosodi-n-propylamine          | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| N-Nitrosodiphenylamine             | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Pentachlorophenol                  | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Phenanthrene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Phenol                             | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Pyrene                             | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:29 |
| Surr: 2,4,6-Tribromophenol         | 70.3   |                       | 34-129          | %REC                      | 1                  | 25-Aug-2014 22:29 |
| Surr: 2-Fluorobiphenyl             | 70.7   |                       | 40-125          | %REC                      | 1                  | 25-Aug-2014 22:29 |
| Surr: 2-Fluorophenol               | 48.7   |                       | 20-120          | %REC                      | 1                  | 25-Aug-2014 22:29 |
| Surr: 4-Terphenyl-d14              | 68.6   |                       | 40-135          | %REC                      | 1                  | 25-Aug-2014 22:29 |
| Surr: Nitrobenzene-d5              | 69.3   |                       | 41-120          | %REC                      | 1                  | 25-Aug-2014 22:29 |
| Surr: Phenol-d6                    | 63.6   |                       | 20-120          | %REC                      | 1                  | 25-Aug-2014 22:29 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method:SM2320B</b> |                 |                           |                    | Analyst: MYC      |
| Alkalinity, Bicarbonate (As CaCO3) | 374    |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 22:29 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 22:29 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 22:29 |
| Alkalinity, Total (As CaCO3)       | 374    |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 22:29 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: Dup-2  
 Collection Date: 19-Aug-2014 00:00

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-10  
 Matrix:Water

| ANALYSES                                     | RESULT  | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |         | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 0.291   |                          | 0.0100          | mg/L                       | 1                  | 28-Aug-2014 18:17 |
| Arsenic                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:17 |
| Barium                                       | 0.201   |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:17 |
| Boron                                        | 0.263   |                          | 0.0200          | mg/L                       | 1                  | 28-Aug-2014 18:17 |
| Cadmium                                      | ND      |                          | 0.00200         | mg/L                       | 1                  | 28-Aug-2014 18:17 |
| Calcium                                      | 204     |                          | 50.0            | mg/L                       | 100                | 02-Sep-2014 18:47 |
| Chromium                                     | 0.185   |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:17 |
| Cobalt                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:17 |
| Copper                                       | 0.00504 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:17 |
| Iron                                         | 0.968   |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:17 |
| Lead                                         | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:17 |
| Magnesium                                    | 23.7    |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:17 |
| Manganese                                    | 0.0511  |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:17 |
| Molybdenum                                   | 0.00638 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:17 |
| Nickel                                       | 0.113   |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:17 |
| Potassium                                    | 4.84    |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:17 |
| Selenium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:17 |
| Silver                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:17 |
| Sodium                                       | 115     |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:17 |
| Uranium                                      | 0.00764 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:17 |
| Zinc                                         | 0.0120  |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:17 |
| <b>MERCURY BY SW7470A</b>                    |         | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 22-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND      |                          | 0.000200        | mg/L                       | 1                  | 22-Aug-2014 16:44 |
| <b>PH BY SM4500H+ B</b>                      |         | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 7.71    | H                        | 0.100           | pH Units                   | 1                  | 26-Aug-2014 22:29 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |         | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 1,730   |                          | 5.00            | umhos/cm                   | 1                  | 30-Aug-2014 15:41 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |         | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 1,200   |                          | 10.0            | mg/L                       | 1                  | 25-Aug-2014 18:30 |
| <b>ANIONS BY E300.0</b>                      |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 319     |                          | 2.50            | mg/L                       | 5                  | 03-Sep-2014 15:46 |
| Fluoride                                     | ND      |                          | 0.500           | mg/L                       | 5                  | 03-Sep-2014 15:46 |
| Sulfate                                      | 83.5    |                          | 2.50            | mg/L                       | 5                  | 03-Sep-2014 15:46 |
| <b>NITRATE/NITRITE BY E300.0</b>             |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 2.76    |                          | 1.00            | mg/L                       | 5                  | 04-Sep-2014 07:40 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-11  
 Collection Date: 20-Aug-2014 07:45

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-11  
 Matrix:Water

| ANALYSES                      | RESULT               | QUAL | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-------------------------------|----------------------|------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>    | <b>Method:SW8260</b> |      |                 |             |                    | Analyst: PC       |
| 1,1,1-Trichloroethane         | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| 1,1,2,2-Tetrachloroethane     | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| 1,1,2-Trichloroethane         | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| 1,1-Dichloroethane            | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| 1,1-Dichloroethene            | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| <b>1,2,4-Trimethylbenzene</b> | <b>0.0063</b>        |      | <b>0.0050</b>   | <b>mg/L</b> | 1                  | 25-Aug-2014 17:09 |
| 1,2-Dibromoethane             | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| 1,2-Dichloroethane            | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| 1,2-Dichloropropane           | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| 1,3,5-Trimethylbenzene        | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| 2-Butanone                    | ND                   |      | 0.010           | mg/L        | 1                  | 25-Aug-2014 17:09 |
| 2-Hexanone                    | ND                   |      | 0.010           | mg/L        | 1                  | 25-Aug-2014 17:09 |
| 4-Isopropyltoluene            | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| 4-Methyl-2-pentanone          | ND                   |      | 0.010           | mg/L        | 1                  | 25-Aug-2014 17:09 |
| Acetone                       | ND                   |      | 0.010           | mg/L        | 1                  | 25-Aug-2014 17:09 |
| <b>Benzene</b>                | <b>0.11</b>          |      | <b>0.0050</b>   | <b>mg/L</b> | 1                  | 25-Aug-2014 17:09 |
| Bromodichloromethane          | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| Bromoform                     | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| Bromomethane                  | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| Carbon disulfide              | ND                   |      | 0.010           | mg/L        | 1                  | 25-Aug-2014 17:09 |
| Carbon tetrachloride          | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| Chlorobenzene                 | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| Chloroethane                  | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| Chloroform                    | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| Chloromethane                 | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| cis-1,2-Dichloroethene        | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| cis-1,3-Dichloropropene       | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| Dibromochloromethane          | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| <b>Ethylbenzene</b>           | <b>0.011</b>         |      | <b>0.0050</b>   | <b>mg/L</b> | 1                  | 25-Aug-2014 17:09 |
| <b>Isopropylbenzene</b>       | <b>0.015</b>         |      | <b>0.0050</b>   | <b>mg/L</b> | 1                  | 25-Aug-2014 17:09 |
| <b>m,p-Xylene</b>             | <b>0.027</b>         |      | <b>0.010</b>    | <b>mg/L</b> | 1                  | 25-Aug-2014 17:09 |
| Methyl tert-butyl ether       | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| Methylene chloride            | ND                   |      | 0.010           | mg/L        | 1                  | 25-Aug-2014 17:09 |
| Naphthalene                   | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| n-Butylbenzene                | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| n-Propylbenzene               | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| o-Xylene                      | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| <b>sec-Butylbenzene</b>       | <b>0.0078</b>        |      | <b>0.0050</b>   | <b>mg/L</b> | 1                  | 25-Aug-2014 17:09 |
| Styrene                       | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| Tetrachloroethene             | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| Toluene                       | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |
| trans-1,2-Dichloroethene      | ND                   |      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:09 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-11  
 Collection Date: 20-Aug-2014 07:45

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-11  
 Matrix:Water

| ANALYSES                           | RESULT        | QUAL                 | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|---------------|----------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>         |               | <b>Method:SW8260</b> |                 | Analyst: PC                |                    |                   |
| trans-1,3-Dichloropropene          | ND            |                      | 0.0050          | mg/L                       | 1                  | 25-Aug-2014 17:09 |
| Trichloroethene                    | ND            |                      | 0.0050          | mg/L                       | 1                  | 25-Aug-2014 17:09 |
| Vinyl chloride                     | ND            |                      | 0.0020          | mg/L                       | 1                  | 25-Aug-2014 17:09 |
| <b>Xylenes, Total</b>              | <b>0.030</b>  |                      | <b>0.015</b>    | <b>mg/L</b>                | 1                  | 25-Aug-2014 17:09 |
| Surr: 1,2-Dichloroethane-d4        | 96.0          |                      | 70-125          | %REC                       | 1                  | 25-Aug-2014 17:09 |
| Surr: 4-Bromofluorobenzene         | 100           |                      | 72-125          | %REC                       | 1                  | 25-Aug-2014 17:09 |
| Surr: Dibromofluoromethane         | 102           |                      | 71-125          | %REC                       | 1                  | 25-Aug-2014 17:09 |
| Surr: Toluene-d8                   | 94.4          |                      | 75-125          | %REC                       | 1                  | 25-Aug-2014 17:09 |
| <b>DISSOLVED METALS BY SW6020A</b> |               | <b>Method:SW6020</b> |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| <b>Aluminum</b>                    | <b>0.0129</b> |                      | <b>0.0100</b>   | <b>mg/L</b>                | 1                  | 28-Aug-2014 18:20 |
| Arsenic                            | ND            |                      | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:20 |
| <b>Barium</b>                      | <b>0.820</b>  |                      | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 28-Aug-2014 18:20 |
| <b>Boron</b>                       | <b>0.361</b>  |                      | <b>0.0200</b>   | <b>mg/L</b>                | 1                  | 28-Aug-2014 18:20 |
| Cadmium                            | ND            |                      | 0.00200         | mg/L                       | 1                  | 28-Aug-2014 18:20 |
| <b>Calcium</b>                     | <b>205</b>    |                      | <b>50.0</b>     | <b>mg/L</b>                | 100                | 02-Sep-2014 18:49 |
| Chromium                           | ND            |                      | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:20 |
| Cobalt                             | ND            |                      | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:20 |
| Copper                             | ND            |                      | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:20 |
| Iron                               | ND            |                      | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:20 |
| Lead                               | ND            |                      | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:20 |
| <b>Magnesium</b>                   | <b>27.1</b>   |                      | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 28-Aug-2014 18:20 |
| <b>Manganese</b>                   | <b>1.10</b>   |                      | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 28-Aug-2014 18:20 |
| Molybdenum                         | ND            |                      | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:20 |
| <b>Nickel</b>                      | <b>0.0217</b> |                      | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 28-Aug-2014 18:20 |
| <b>Potassium</b>                   | <b>3.65</b>   |                      | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 28-Aug-2014 18:20 |
| Selenium                           | ND            |                      | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:20 |
| Silver                             | ND            |                      | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:20 |
| <b>Sodium</b>                      | <b>85.6</b>   |                      | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 28-Aug-2014 18:20 |
| <b>Uranium</b>                     | <b>0.0269</b> |                      | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 28-Aug-2014 18:20 |
| <b>Zinc</b>                        | <b>0.0104</b> |                      | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 28-Aug-2014 18:20 |
| <b>MERCURY BY SW7470A</b>          |               | <b>Method:SW7470</b> |                 | Prep:SW7470 / 22-Aug-2014  |                    | Analyst: OFO      |
| Mercury                            | ND            |                      | 0.000200        | mg/L                       | 1                  | 22-Aug-2014 16:46 |
| <b>NITRATE/NITRITE BY E300.0</b>   |               | <b>Method:E300</b>   |                 | Analyst: KKB               |                    |                   |
| Nitrate/Nitrite (as N)             | ND            |                      | 1.00            | mg/L                       | 5                  | 04-Sep-2014 08:02 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-12R  
 Collection Date: 20-Aug-2014 08:55

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-12  
 Matrix:Water

| ANALYSES                   | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| 1,1,2,2-Tetrachloroethane  | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| 1,1,2-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| 1,1-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| 1,1-Dichloroethene         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| 1,2,4-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| 1,2-Dibromoethane          | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| 1,2-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| 1,2-Dichloropropane        | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| 1,3,5-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| 2-Butanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 17:42 |
| 2-Hexanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 17:42 |
| 4-Isopropyltoluene         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| 4-Methyl-2-pentanone       | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 17:42 |
| Acetone                    | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 17:42 |
| Benzene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| Bromodichloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| Bromoform                  | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| Bromomethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| Carbon disulfide           | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 17:42 |
| Carbon tetrachloride       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| Chlorobenzene              | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| Chloroethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| Chloroform                 | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| Chloromethane              | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| cis-1,2-Dichloroethene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| cis-1,3-Dichloropropene    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| Dibromochloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| Ethylbenzene               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| Isopropylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| m,p-Xylene                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 17:42 |
| Methyl tert-butyl ether    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| Methylene chloride         | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 17:42 |
| Naphthalene                | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| n-Butylbenzene             | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| n-Propylbenzene            | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| o-Xylene                   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| sec-Butylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| Styrene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| Tetrachloroethene          | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| Toluene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| trans-1,2-Dichloroethene   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-12R  
Collection Date: 20-Aug-2014 08:55

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
Lab ID:HS14080747-12  
Matrix:Water

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 25-Aug-2014 17:42 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 25-Aug-2014 17:42 |
| Surr: 1,2-Dichloroethane-d4 | 95.8   |                      | 70-125          | %REC        | 1                  | 25-Aug-2014 17:42 |
| Surr: 4-Bromofluorobenzene  | 99.1   |                      | 72-125          | %REC        | 1                  | 25-Aug-2014 17:42 |
| Surr: Dibromofluoromethane  | 98.9   |                      | 71-125          | %REC        | 1                  | 25-Aug-2014 17:42 |
| Surr: Toluene-d8            | 95.8   |                      | 75-125          | %REC        | 1                  | 25-Aug-2014 17:42 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-12R  
 Collection Date: 20-Aug-2014 08:55

**ANALYTICAL REPORT**

WorkOrder: HS14080747  
 Lab ID: HS14080747-12  
 Matrix: Water

| ANALYSES                       | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|--------------------------------|--------|-----------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b> |        | <b>Method: SW8270</b> |                 | Prep: SW3510 / 22-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                  | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| 1-Methylnaphthalene            | ND     |                       | 0.10            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| 2,4,5-Trichlorophenol          | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| 2,4,6-Trichlorophenol          | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| 2,4-Dichlorophenol             | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| 2,4-Dimethylphenol             | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| 2,4-Dinitrophenol              | ND     |                       | 1.0             | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| 2,4-Dinitrotoluene             | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| 2,6-Dinitrotoluene             | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| 2-Chloronaphthalene            | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| 2-Chlorophenol                 | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| 2-Methylnaphthalene            | ND     |                       | 0.10            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| 2-Methylphenol                 | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| 2-Nitroaniline                 | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| 2-Nitrophenol                  | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| 3&4-Methylphenol               | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| 3,3'-Dichlorobenzidine         | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| 3-Nitroaniline                 | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| 4,6-Dinitro-2-methylphenol     | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| 4-Bromophenyl phenyl ether     | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| 4-Chloro-3-methylphenol        | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| 4-Chloroaniline                | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| 4-Chlorophenyl phenyl ether    | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| 4-Nitroaniline                 | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| 4-Nitrophenol                  | ND     |                       | 1.0             | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| Acenaphthene                   | ND     |                       | 0.10            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| Acenaphthylene                 | ND     |                       | 0.10            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| Acetophenone                   | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| Anthracene                     | ND     |                       | 0.10            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| Atrazine                       | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| Benz(a)anthracene              | ND     |                       | 0.10            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| Benzaldehyde                   | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| Benzo(a)pyrene                 | ND     |                       | 0.10            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| Benzo(b)fluoranthene           | ND     |                       | 0.10            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| Benzo(g,h,i)perylene           | ND     |                       | 0.10            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| Benzo(k)fluoranthene           | ND     |                       | 0.10            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| Bis(2-chloroethoxy)methane     | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| Bis(2-chloroethyl)ether        | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| Bis(2-chloroisopropyl)ether    | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| Bis(2-ethylhexyl)phthalate     | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| Butyl benzyl phthalate         | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |
| Caprolactam                    | ND     |                       | 0.20            | ug/L                       | 1                  | 25-Aug-2014 22:49 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-12R  
 Collection Date: 20-Aug-2014 08:55

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-12  
 Matrix:Water

| ANALYSES                           | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 22-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:49 |
| Chrysene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:49 |
| Dibenz(a,h)anthracene              | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:49 |
| Dibenzofuran                       | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:49 |
| Diethyl phthalate                  | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:49 |
| Dimethyl phthalate                 | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:49 |
| Di-n-butyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:49 |
| Di-n-octyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:49 |
| Fluoranthene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:49 |
| Fluorene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:49 |
| Hexachlorobenzene                  | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:49 |
| Hexachlorobutadiene                | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:49 |
| Hexachlorocyclopentadiene          | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:49 |
| Hexachloroethane                   | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:49 |
| Indeno(1,2,3-cd)pyrene             | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:49 |
| Isophorone                         | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:49 |
| Naphthalene                        | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:49 |
| Nitrobenzene                       | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:49 |
| N-Nitrosodi-n-propylamine          | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:49 |
| N-Nitrosodiphenylamine             | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:49 |
| Pentachlorophenol                  | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:49 |
| Phenanthrene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:49 |
| Phenol                             | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 22:49 |
| Pyrene                             | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 22:49 |
| Surr: 2,4,6-Tribromophenol         | 81.7   |                       | 34-129          | %REC                      | 1                  | 25-Aug-2014 22:49 |
| Surr: 2-Fluorobiphenyl             | 71.7   |                       | 40-125          | %REC                      | 1                  | 25-Aug-2014 22:49 |
| Surr: 2-Fluorophenol               | 54.7   |                       | 20-120          | %REC                      | 1                  | 25-Aug-2014 22:49 |
| Surr: 4-Terphenyl-d14              | 79.7   |                       | 40-135          | %REC                      | 1                  | 25-Aug-2014 22:49 |
| Surr: Nitrobenzene-d5              | 69.4   |                       | 41-120          | %REC                      | 1                  | 25-Aug-2014 22:49 |
| Surr: Phenol-d6                    | 67.5   |                       | 20-120          | %REC                      | 1                  | 25-Aug-2014 22:49 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method:SM2320B</b> |                 | Analyst: MYC              |                    |                   |
| Alkalinity, Bicarbonate (As CaCO3) | 213    |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 22:35 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 22:35 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 22:35 |
| Alkalinity, Total (As CaCO3)       | 213    |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 22:35 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-12R  
 Collection Date: 20-Aug-2014 08:55

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-12  
 Matrix:Water

| ANALYSES                                     | RESULT  | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |         | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 1.31    |                          | 0.0100          | mg/L                       | 1                  | 28-Aug-2014 18:23 |
| Arsenic                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:23 |
| Barium                                       | 0.145   |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:23 |
| Boron                                        | 0.223   |                          | 0.0200          | mg/L                       | 1                  | 28-Aug-2014 18:23 |
| Cadmium                                      | ND      |                          | 0.00200         | mg/L                       | 1                  | 28-Aug-2014 18:23 |
| Calcium                                      | 74.0    |                          | 0.500           | mg/L                       | 1                  | 28-Aug-2014 18:23 |
| Chromium                                     | 0.0516  |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:23 |
| Cobalt                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:23 |
| Copper                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:23 |
| Iron                                         | 0.867   |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:23 |
| Lead                                         | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:23 |
| Magnesium                                    | 8.00    |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:23 |
| Manganese                                    | 0.0483  |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:23 |
| Molybdenum                                   | 0.00554 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:23 |
| Nickel                                       | 0.0350  |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:23 |
| Potassium                                    | 2.30    |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:23 |
| Selenium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:23 |
| Silver                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:23 |
| Sodium                                       | 48.3    |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:23 |
| Uranium                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:23 |
| Zinc                                         | 0.00962 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:23 |
| <b>MERCURY BY SW7470A</b>                    |         | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 22-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND      |                          | 0.000200        | mg/L                       | 1                  | 22-Aug-2014 16:47 |
| <b>PH BY SM4500H+ B</b>                      |         | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 8.02    | H                        | 0.100           | pH Units                   | 1                  | 26-Aug-2014 22:35 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |         | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 612     |                          | 5.00            | umhos/cm                   | 1                  | 30-Aug-2014 15:42 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |         | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 410     |                          | 10.0            | mg/L                       | 1                  | 26-Aug-2014 18:00 |
| <b>ANIONS BY E300.0</b>                      |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 24.5    |                          | 0.500           | mg/L                       | 1                  | 03-Sep-2014 16:08 |
| Fluoride                                     | 1.05    |                          | 0.100           | mg/L                       | 1                  | 03-Sep-2014 16:08 |
| Sulfate                                      | 67.2    |                          | 0.500           | mg/L                       | 1                  | 03-Sep-2014 16:08 |
| <b>NITRATE/NITRITE BY E300.0</b>             |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 6.98    |                          | 1.00            | mg/L                       | 5                  | 04-Sep-2014 08:24 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-14  
 Collection Date: 20-Aug-2014 08:45

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-13  
 Matrix:Water

| ANALYSES                   | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| 1,1,2,2-Tetrachloroethane  | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| 1,1,2-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| 1,1-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| 1,1-Dichloroethene         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| 1,2,4-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| 1,2-Dibromoethane          | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| 1,2-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| 1,2-Dichloropropane        | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| 1,3,5-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| 2-Butanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 18:14 |
| 2-Hexanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 18:14 |
| 4-Isopropyltoluene         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| 4-Methyl-2-pentanone       | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 18:14 |
| Acetone                    | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 18:14 |
| Benzene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| Bromodichloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| Bromoform                  | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| Bromomethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| Carbon disulfide           | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 18:14 |
| Carbon tetrachloride       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| Chlorobenzene              | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| Chloroethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| Chloroform                 | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| Chloromethane              | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| cis-1,2-Dichloroethene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| cis-1,3-Dichloropropene    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| Dibromochloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| Ethylbenzene               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| Isopropylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| m,p-Xylene                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 18:14 |
| Methyl tert-butyl ether    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| Methylene chloride         | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 18:14 |
| Naphthalene                | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| n-Butylbenzene             | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| n-Propylbenzene            | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| o-Xylene                   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| sec-Butylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| Styrene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| Tetrachloroethene          | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| Toluene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |
| trans-1,2-Dichloroethene   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:14 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-14  
 Collection Date: 20-Aug-2014 08:45

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-13  
 Matrix:Water

| ANALYSES                                     | RESULT  | QUAL                 | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------|----------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>                   |         | <b>Method:SW8260</b> |                 | Analyst: PC                |                    |                   |
| trans-1,3-Dichloropropene                    | ND      |                      | 0.0050          | mg/L                       | 1                  | 25-Aug-2014 18:14 |
| Trichloroethene                              | ND      |                      | 0.0050          | mg/L                       | 1                  | 25-Aug-2014 18:14 |
| Vinyl chloride                               | ND      |                      | 0.0020          | mg/L                       | 1                  | 25-Aug-2014 18:14 |
| Xylenes, Total                               | ND      |                      | 0.015           | mg/L                       | 1                  | 25-Aug-2014 18:14 |
| Surr: 1,2-Dichloroethane-d4                  | 95.8    |                      | 70-125          | %REC                       | 1                  | 25-Aug-2014 18:14 |
| Surr: 4-Bromofluorobenzene                   | 97.9    |                      | 72-125          | %REC                       | 1                  | 25-Aug-2014 18:14 |
| Surr: Dibromofluoromethane                   | 100     |                      | 71-125          | %REC                       | 1                  | 25-Aug-2014 18:14 |
| Surr: Toluene-d8                             | 95.6    |                      | 75-125          | %REC                       | 1                  | 25-Aug-2014 18:14 |
| <b>DISSOLVED METALS BY SW6020A</b>           |         | <b>Method:SW6020</b> |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 0.573   |                      | 0.0100          | mg/L                       | 1                  | 28-Aug-2014 18:25 |
| Arsenic                                      | ND      |                      | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:25 |
| Barium                                       | 0.125   |                      | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:25 |
| Boron                                        | 0.203   |                      | 0.0200          | mg/L                       | 1                  | 28-Aug-2014 18:25 |
| Cadmium                                      | ND      |                      | 0.00200         | mg/L                       | 1                  | 28-Aug-2014 18:25 |
| Calcium                                      | 101     |                      | 0.500           | mg/L                       | 1                  | 28-Aug-2014 18:25 |
| Chromium                                     | 0.0247  |                      | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:25 |
| Cobalt                                       | ND      |                      | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:25 |
| Copper                                       | ND      |                      | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:25 |
| Iron                                         | 0.314   |                      | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:25 |
| Lead                                         | ND      |                      | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:25 |
| Magnesium                                    | 11.7    |                      | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:25 |
| Manganese                                    | 0.00919 |                      | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:25 |
| Molybdenum                                   | 0.00533 |                      | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:25 |
| Nickel                                       | 0.0178  |                      | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:25 |
| Potassium                                    | 3.02    |                      | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:25 |
| Selenium                                     | ND      |                      | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:25 |
| Silver                                       | ND      |                      | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:25 |
| Sodium                                       | 30.2    |                      | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:25 |
| Uranium                                      | 0.00502 |                      | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:25 |
| Zinc                                         | 0.0134  |                      | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:25 |
| <b>MERCURY BY SW7470A</b>                    |         | <b>Method:SW7470</b> |                 | Prep:SW7470 / 22-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND      |                      | 0.000200        | mg/L                       | 1                  | 22-Aug-2014 16:49 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |         | <b>Method:M2540C</b> |                 | Analyst: KMU               |                    |                   |
| Total Dissolved Solids (Residue, Filterable) | 534     |                      | 10.0            | mg/L                       | 1                  | 26-Aug-2014 18:00 |
| <b>NITRATE/NITRITE BY E300.0</b>             |         | <b>Method:E300</b>   |                 | Analyst: KKB               |                    |                   |
| Nitrate/Nitrite (as N)                       | 1.10    |                      | 1.00            | mg/L                       | 5                  | 04-Sep-2014 09:29 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-22  
 Collection Date: 20-Aug-2014 11:50

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-14  
 Matrix:Water

| ANALYSES                   | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| 1,1,2,2-Tetrachloroethane  | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| 1,1,2-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| 1,1-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| 1,1-Dichloroethene         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| 1,2,4-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| 1,2-Dibromoethane          | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| 1,2-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| 1,2-Dichloropropane        | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| 1,3,5-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| 2-Butanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 18:46 |
| 2-Hexanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 18:46 |
| 4-Isopropyltoluene         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| 4-Methyl-2-pentanone       | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 18:46 |
| Acetone                    | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 18:46 |
| Benzene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| Bromodichloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| Bromoform                  | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| Bromomethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| Carbon disulfide           | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 18:46 |
| Carbon tetrachloride       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| Chlorobenzene              | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| Chloroethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| Chloroform                 | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| Chloromethane              | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| cis-1,2-Dichloroethene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| cis-1,3-Dichloropropene    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| Dibromochloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| Ethylbenzene               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| Isopropylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| m,p-Xylene                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 18:46 |
| Methyl tert-butyl ether    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| Methylene chloride         | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 18:46 |
| Naphthalene                | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| n-Butylbenzene             | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| n-Propylbenzene            | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| o-Xylene                   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| sec-Butylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| Styrene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| Tetrachloroethene          | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| Toluene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| trans-1,2-Dichloroethene   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-22  
Collection Date: 20-Aug-2014 11:50

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
Lab ID:HS14080747-14  
Matrix:Water

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 25-Aug-2014 18:46 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 25-Aug-2014 18:46 |
| Surr: 1,2-Dichloroethane-d4 | 96.4   |                      | 70-125          | %REC        | 1                  | 25-Aug-2014 18:46 |
| Surr: 4-Bromofluorobenzene  | 96.1   |                      | 72-125          | %REC        | 1                  | 25-Aug-2014 18:46 |
| Surr: Dibromofluoromethane  | 100    |                      | 71-125          | %REC        | 1                  | 25-Aug-2014 18:46 |
| Surr: Toluene-d8            | 93.9   |                      | 75-125          | %REC        | 1                  | 25-Aug-2014 18:46 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-22  
 Collection Date: 20-Aug-2014 11:50

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-14  
 Matrix:Water

| ANALYSES                       | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|--------------------------------|--------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b> |        | <b>Method:SW8270</b> |                 | Prep:SW3510 / 22-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                  | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| 1-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| 2,4,5-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| 2,4,6-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| 2,4-Dichlorophenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| 2,4-Dimethylphenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| 2,4-Dinitrophenol              | ND     |                      | 1.0             | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| 2,4-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| 2,6-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| 2-Chloronaphthalene            | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| 2-Chlorophenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| 2-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| 2-Methylphenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| 2-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| 2-Nitrophenol                  | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| 3&4-Methylphenol               | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| 3,3'-Dichlorobenzidine         | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| 3-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| 4,6-Dinitro-2-methylphenol     | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| 4-Bromophenyl phenyl ether     | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| 4-Chloro-3-methylphenol        | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| 4-Chloroaniline                | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| 4-Chlorophenyl phenyl ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| 4-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| 4-Nitrophenol                  | ND     |                      | 1.0             | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Acenaphthene                   | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Acenaphthylene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Acetophenone                   | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Anthracene                     | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Atrazine                       | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Benz(a)anthracene              | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Benzaldehyde                   | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Benzo(a)pyrene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Benzo(b)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Benzo(g,h,i)perylene           | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Benzo(k)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Bis(2-chloroethoxy)methane     | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Bis(2-chloroethyl)ether        | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Bis(2-chloroisopropyl)ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Bis(2-ethylhexyl)phthalate     | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Butyl benzyl phthalate         | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Caprolactam                    | ND     |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-22  
 Collection Date: 20-Aug-2014 11:50

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-14  
 Matrix:Water

| ANALYSES                                  | RESULT     | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-------------------------------------------|------------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>            |            | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 22-Aug-2014 |                    | Analyst: LG       |
| Carbazole                                 | ND         |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Chrysene                                  | ND         |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Dibenz(a,h)anthracene                     | ND         |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Dibenzofuran                              | ND         |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Diethyl phthalate                         | ND         |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Dimethyl phthalate                        | ND         |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Di-n-butyl phthalate                      | ND         |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| <b>Di-n-octyl phthalate</b>               | <b>3.1</b> |                       | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 25-Aug-2014 23:09 |
| Fluoranthene                              | ND         |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Fluorene                                  | ND         |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Hexachlorobenzene                         | ND         |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Hexachlorobutadiene                       | ND         |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Hexachlorocyclopentadiene                 | ND         |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Hexachloroethane                          | ND         |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Indeno(1,2,3-cd)pyrene                    | ND         |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Isophorone                                | ND         |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Naphthalene                               | ND         |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Nitrobenzene                              | ND         |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| N-Nitrosodi-n-propylamine                 | ND         |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| N-Nitrosodiphenylamine                    | ND         |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Pentachlorophenol                         | ND         |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Phenanthrene                              | ND         |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Phenol                                    | ND         |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| Pyrene                                    | ND         |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:09 |
| <i>Surr: 2,4,6-Tribromophenol</i>         | 70.6       |                       | 34-129          | %REC                      | 1                  | 25-Aug-2014 23:09 |
| <i>Surr: 2-Fluorobiphenyl</i>             | 70.0       |                       | 40-125          | %REC                      | 1                  | 25-Aug-2014 23:09 |
| <i>Surr: 2-Fluorophenol</i>               | 48.6       |                       | 20-120          | %REC                      | 1                  | 25-Aug-2014 23:09 |
| <i>Surr: 4-Terphenyl-d14</i>              | 74.7       |                       | 40-135          | %REC                      | 1                  | 25-Aug-2014 23:09 |
| <i>Surr: Nitrobenzene-d5</i>              | 66.5       |                       | 41-120          | %REC                      | 1                  | 25-Aug-2014 23:09 |
| <i>Surr: Phenol-d6</i>                    | 60.3       |                       | 20-120          | %REC                      | 1                  | 25-Aug-2014 23:09 |
| <b>ALKALINITY BY SM2320B</b>              |            | <b>Method:SM2320B</b> |                 |                           |                    | Analyst: MYC      |
| <b>Alkalinity, Bicarbonate (As CaCO3)</b> | <b>390</b> |                       | <b>5.00</b>     | <b>mg/L</b>               | 1                  | 26-Aug-2014 22:50 |
| Alkalinity, Carbonate (As CaCO3)          | ND         |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 22:50 |
| Alkalinity, Hydroxide (As CaCO3)          | ND         |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 22:50 |
| <b>Alkalinity, Total (As CaCO3)</b>       | <b>390</b> |                       | <b>5.00</b>     | <b>mg/L</b>               | 1                  | 26-Aug-2014 22:50 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-22  
 Collection Date: 20-Aug-2014 11:50

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-14  
 Matrix:Water

| ANALYSES                                     | RESULT  | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |         | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 40.3    |                          | 1.00            | mg/L                       | 100                | 03-Sep-2014 16:33 |
| Arsenic                                      | 0.00642 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:28 |
| Barium                                       | 0.141   |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:28 |
| Boron                                        | 0.239   |                          | 0.0200          | mg/L                       | 1                  | 28-Aug-2014 18:28 |
| Cadmium                                      | ND      |                          | 0.00200         | mg/L                       | 1                  | 28-Aug-2014 18:28 |
| Calcium                                      | 61.8    |                          | 0.500           | mg/L                       | 1                  | 28-Aug-2014 18:28 |
| Chromium                                     | 0.184   |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:28 |
| Cobalt                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:28 |
| Copper                                       | 0.00983 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:28 |
| Iron                                         | 4.32    |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:28 |
| Lead                                         | 0.00743 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:28 |
| Magnesium                                    | 8.09    |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:28 |
| Manganese                                    | 0.0715  |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:28 |
| Molybdenum                                   | 0.00881 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:28 |
| Nickel                                       | 0.0999  |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:28 |
| Potassium                                    | 4.89    |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:28 |
| Selenium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:28 |
| Silver                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:28 |
| Sodium                                       | 201     |                          | 20.0            | mg/L                       | 100                | 02-Sep-2014 19:03 |
| Uranium                                      | 0.0336  |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:28 |
| Zinc                                         | 0.0370  |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:28 |
| <b>MERCURY BY SW7470A</b>                    |         | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 22-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND      |                          | 0.000200        | mg/L                       | 1                  | 22-Aug-2014 16:51 |
| <b>PH BY SM4500H+ B</b>                      |         | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 7.96    | H                        | 0.100           | pH Units                   | 1                  | 26-Aug-2014 22:50 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |         | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 1,210   |                          | 5.00            | umhos/cm                   | 1                  | 30-Aug-2014 15:43 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |         | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 738     |                          | 10.0            | mg/L                       | 1                  | 26-Aug-2014 18:00 |
| <b>ANIONS BY E300.0</b>                      |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 120     |                          | 1.00            | mg/L                       | 2                  | 05-Sep-2014 16:04 |
| Fluoride                                     | 1.00    |                          | 0.100           | mg/L                       | 1                  | 03-Sep-2014 16:30 |
| Sulfate                                      | 127     |                          | 1.00            | mg/L                       | 2                  | 05-Sep-2014 16:04 |
| <b>NITRATE/NITRITE BY E300.0</b>             |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 2.36    |                          | 1.00            | mg/L                       | 5                  | 04-Sep-2014 09:50 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-18  
 Collection Date: 20-Aug-2014 13:45

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-15  
 Matrix:Water

| ANALYSES                   | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| 1,1,2,2-Tetrachloroethane  | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| 1,1,2-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| 1,1-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| 1,1-Dichloroethene         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| 1,2,4-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| 1,2-Dibromoethane          | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| 1,2-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| 1,2-Dichloropropane        | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| 1,3,5-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| 2-Butanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 19:17 |
| 2-Hexanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 19:17 |
| 4-Isopropyltoluene         | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| 4-Methyl-2-pentanone       | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 19:17 |
| Acetone                    | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 19:17 |
| Benzene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| Bromodichloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| Bromoform                  | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| Bromomethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| Carbon disulfide           | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 19:17 |
| Carbon tetrachloride       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| Chlorobenzene              | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| Chloroethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| Chloroform                 | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| Chloromethane              | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| cis-1,2-Dichloroethene     | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| cis-1,3-Dichloropropene    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| Dibromochloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| Ethylbenzene               | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| Isopropylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| m,p-Xylene                 | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 19:17 |
| Methyl tert-butyl ether    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| Methylene chloride         | ND     |                      | 0.010           | mg/L        | 1                  | 25-Aug-2014 19:17 |
| Naphthalene                | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| n-Butylbenzene             | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| n-Propylbenzene            | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| o-Xylene                   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| sec-Butylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| Styrene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| Tetrachloroethene          | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| Toluene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| trans-1,2-Dichloroethene   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-18  
Collection Date: 20-Aug-2014 13:45

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
Lab ID:HS14080747-15  
Matrix:Water

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 25-Aug-2014 19:17 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 25-Aug-2014 19:17 |
| Surr: 1,2-Dichloroethane-d4 | 92.5   |                      | 70-125          | %REC        | 1                  | 25-Aug-2014 19:17 |
| Surr: 4-Bromofluorobenzene  | 99.6   |                      | 72-125          | %REC        | 1                  | 25-Aug-2014 19:17 |
| Surr: Dibromofluoromethane  | 98.4   |                      | 71-125          | %REC        | 1                  | 25-Aug-2014 19:17 |
| Surr: Toluene-d8            | 97.6   |                      | 75-125          | %REC        | 1                  | 25-Aug-2014 19:17 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-18  
 Collection Date: 20-Aug-2014 13:45

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-15  
 Matrix:Water

| ANALYSES                          | RESULT      | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------------|-------------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>    |             | <b>Method:SW8270</b> |                 | Prep:SW3510 / 22-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                     | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| 1-Methylnaphthalene               | ND          |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| 2,4,5-Trichlorophenol             | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| 2,4,6-Trichlorophenol             | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| 2,4-Dichlorophenol                | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| 2,4-Dimethylphenol                | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| 2,4-Dinitrophenol                 | ND          |                      | 1.0             | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| 2,4-Dinitrotoluene                | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| 2,6-Dinitrotoluene                | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| 2-Chloronaphthalene               | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| 2-Chlorophenol                    | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| 2-Methylnaphthalene               | ND          |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| 2-Methylphenol                    | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| 2-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| 2-Nitrophenol                     | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| 3&4-Methylphenol                  | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| 3,3'-Dichlorobenzidine            | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| 3-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| 4,6-Dinitro-2-methylphenol        | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| 4-Bromophenyl phenyl ether        | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| 4-Chloro-3-methylphenol           | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| 4-Chloroaniline                   | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| 4-Chlorophenyl phenyl ether       | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| 4-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| 4-Nitrophenol                     | ND          |                      | 1.0             | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Acenaphthene                      | ND          |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Acenaphthylene                    | ND          |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Acetophenone                      | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Anthracene                        | ND          |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Atrazine                          | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Benz(a)anthracene                 | ND          |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Benzaldehyde                      | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Benzo(a)pyrene                    | ND          |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Benzo(b)fluoranthene              | ND          |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Benzo(g,h,i)perylene              | ND          |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Benzo(k)fluoranthene              | ND          |                      | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Bis(2-chloroethoxy)methane        | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Bis(2-chloroethyl)ether           | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Bis(2-chloroisopropyl)ether       | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>0.67</b> |                      | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 25-Aug-2014 23:29 |
| Butyl benzyl phthalate            | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Caprolactam                       | ND          |                      | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-18  
 Collection Date: 20-Aug-2014 13:45

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-15  
 Matrix:Water

| ANALYSES                           | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 22-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Chrysene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Dibenz(a,h)anthracene              | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Dibenzofuran                       | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Diethyl phthalate                  | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Dimethyl phthalate                 | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Di-n-butyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Di-n-octyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Fluoranthene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Fluorene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Hexachlorobenzene                  | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Hexachlorobutadiene                | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Hexachlorocyclopentadiene          | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Hexachloroethane                   | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Indeno(1,2,3-cd)pyrene             | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Isophorone                         | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Naphthalene                        | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Nitrobenzene                       | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| N-Nitrosodi-n-propylamine          | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| N-Nitrosodiphenylamine             | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Pentachlorophenol                  | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Phenanthrene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Phenol                             | ND     |                       | 0.20            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Pyrene                             | ND     |                       | 0.10            | ug/L                      | 1                  | 25-Aug-2014 23:29 |
| Surr: 2,4,6-Tribromophenol         | 73.6   |                       | 34-129          | %REC                      | 1                  | 25-Aug-2014 23:29 |
| Surr: 2-Fluorobiphenyl             | 56.2   |                       | 40-125          | %REC                      | 1                  | 25-Aug-2014 23:29 |
| Surr: 2-Fluorophenol               | 42.5   |                       | 20-120          | %REC                      | 1                  | 25-Aug-2014 23:29 |
| Surr: 4-Terphenyl-d14              | 72.0   |                       | 40-135          | %REC                      | 1                  | 25-Aug-2014 23:29 |
| Surr: Nitrobenzene-d5              | 53.2   |                       | 41-120          | %REC                      | 1                  | 25-Aug-2014 23:29 |
| Surr: Phenol-d6                    | 51.8   |                       | 20-120          | %REC                      | 1                  | 25-Aug-2014 23:29 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method:SM2320B</b> |                 | Analyst: MYC              |                    |                   |
| Alkalinity, Bicarbonate (As CaCO3) | 268    |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 22:56 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 22:56 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 22:56 |
| Alkalinity, Total (As CaCO3)       | 268    |                       | 5.00            | mg/L                      | 1                  | 26-Aug-2014 22:56 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-18  
 Collection Date: 20-Aug-2014 13:45

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
 Lab ID:HS14080747-15  
 Matrix:Water

| ANALYSES                                     | RESULT  | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |         | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 1.31    |                          | 0.0100          | mg/L                       | 1                  | 28-Aug-2014 18:36 |
| Arsenic                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:36 |
| Barium                                       | 0.145   |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:36 |
| Boron                                        | 0.242   |                          | 0.0200          | mg/L                       | 1                  | 28-Aug-2014 18:36 |
| Cadmium                                      | ND      |                          | 0.00200         | mg/L                       | 1                  | 28-Aug-2014 18:36 |
| Calcium                                      | 124     |                          | 0.500           | mg/L                       | 1                  | 28-Aug-2014 18:36 |
| Chromium                                     | 0.00506 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:36 |
| Cobalt                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:36 |
| Copper                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:36 |
| Iron                                         | 0.637   |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:36 |
| Lead                                         | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:36 |
| Magnesium                                    | 12.3    |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:36 |
| Manganese                                    | 0.0378  |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:36 |
| Molybdenum                                   | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:36 |
| Nickel                                       | 0.00634 |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:36 |
| Potassium                                    | 2.35    |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:36 |
| Selenium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:36 |
| Silver                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:36 |
| Sodium                                       | 59.1    |                          | 0.200           | mg/L                       | 1                  | 28-Aug-2014 18:36 |
| Uranium                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:36 |
| Zinc                                         | 0.0363  |                          | 0.00500         | mg/L                       | 1                  | 28-Aug-2014 18:36 |
| <b>MERCURY BY SW7470A</b>                    |         | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 22-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND      |                          | 0.000200        | mg/L                       | 1                  | 22-Aug-2014 17:05 |
| <b>PH BY SM4500H+ B</b>                      |         | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 7.97    | H                        | 0.100           | pH Units                   | 1                  | 26-Aug-2014 22:56 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |         | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 1,030   |                          | 5.00            | umhos/cm                   | 1                  | 30-Aug-2014 15:45 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |         | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 678     |                          | 10.0            | mg/L                       | 1                  | 26-Aug-2014 18:00 |
| <b>ANIONS BY E300.0</b>                      |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 143     |                          | 1.00            | mg/L                       | 2                  | 05-Sep-2014 16:26 |
| Fluoride                                     | 0.590   |                          | 0.100           | mg/L                       | 1                  | 03-Sep-2014 16:51 |
| Sulfate                                      | 123     |                          | 1.00            | mg/L                       | 2                  | 05-Sep-2014 16:26 |
| <b>NITRATE/NITRITE BY E300.0</b>             |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 1.97    |                          | 1.00            | mg/L                       | 5                  | 04-Sep-2014 10:12 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: TB-08-20-14-A  
 Collection Date: 21-Aug-2014 17:06

**ANALYTICAL REPORT**

WorkOrder: HS14080747  
 Lab ID: HS14080747-16  
 Matrix: Water

| ANALYSES                   | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|-----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method: SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| 1,1,2,2-Tetrachloroethane  | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| 1,1,2-Trichloroethane      | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| 1,1-Dichloroethane         | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| 1,1-Dichloroethene         | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| 1,2,4-Trimethylbenzene     | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| 1,2-Dibromoethane          | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| 1,2-Dichloroethane         | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| 1,2-Dichloropropane        | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| 1,3,5-Trimethylbenzene     | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| 2-Butanone                 | ND     |                       | 0.010           | mg/L        | 1                  | 29-Aug-2014 13:29 |
| 2-Hexanone                 | ND     |                       | 0.010           | mg/L        | 1                  | 29-Aug-2014 13:29 |
| 4-Isopropyltoluene         | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| 4-Methyl-2-pentanone       | ND     |                       | 0.010           | mg/L        | 1                  | 29-Aug-2014 13:29 |
| Acetone                    | ND     |                       | 0.010           | mg/L        | 1                  | 29-Aug-2014 13:29 |
| Benzene                    | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| Bromodichloromethane       | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| Bromoform                  | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| Bromomethane               | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| Carbon disulfide           | ND     |                       | 0.010           | mg/L        | 1                  | 29-Aug-2014 13:29 |
| Carbon tetrachloride       | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| Chlorobenzene              | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| Chloroethane               | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| Chloroform                 | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| Chloromethane              | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| cis-1,2-Dichloroethene     | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| cis-1,3-Dichloropropene    | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| Dibromochloromethane       | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| Ethylbenzene               | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| Isopropylbenzene           | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| m,p-Xylene                 | ND     |                       | 0.010           | mg/L        | 1                  | 29-Aug-2014 13:29 |
| Methyl tert-butyl ether    | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| Methylene chloride         | ND     |                       | 0.010           | mg/L        | 1                  | 29-Aug-2014 13:29 |
| Naphthalene                | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| n-Butylbenzene             | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| n-Propylbenzene            | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| o-Xylene                   | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| sec-Butylbenzene           | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| Styrene                    | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| Tetrachloroethene          | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| Toluene                    | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |
| trans-1,2-Dichloroethene   | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:29 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: TB-08-20-14-A  
Collection Date: 21-Aug-2014 17:06

**ANALYTICAL REPORT**

WorkOrder:HS14080747  
Lab ID:HS14080747-16  
Matrix:Water

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 |       |                    | Analyst: PC       |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:29 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:29 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L  | 1                  | 29-Aug-2014 13:29 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L  | 1                  | 29-Aug-2014 13:29 |
| Surr: 1,2-Dichloroethane-d4 | 98.8   |                      | 70-125          | %REC  | 1                  | 29-Aug-2014 13:29 |
| Surr: 4-Bromofluorobenzene  | 105    |                      | 72-125          | %REC  | 1                  | 29-Aug-2014 13:29 |
| Surr: Dibromofluoromethane  | 97.4   |                      | 71-125          | %REC  | 1                  | 29-Aug-2014 13:29 |
| Surr: Toluene-d8            | 105    |                      | 75-125          | %REC  | 1                  | 29-Aug-2014 13:29 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining - SA  
**WorkOrder:** HS14080747

**DATES REPORT**

| Sample ID                                                               | Client Samp ID | Collection Date   | TCLP Date | Prep Date         | Analysis Date     | DF |
|-------------------------------------------------------------------------|----------------|-------------------|-----------|-------------------|-------------------|----|
| <b>Batch ID 85377 Test Name : LOW-LEVEL SEMIVOLATILES Matrix: Water</b> |                |                   |           |                   |                   |    |
| HS14080747-01                                                           | MW-13          | 19 Aug 2014 10:10 |           | 22 Aug 2014 10:57 | 22 Aug 2014 21:41 | 1  |
| HS14080747-01                                                           | MW-13          | 19 Aug 2014 10:10 |           | 22 Aug 2014 10:57 | 04 Sep 2014 14:21 | 2  |
| HS14080747-02                                                           | MW-16          | 19 Aug 2014 11:20 |           | 22 Aug 2014 10:57 | 22 Aug 2014 22:01 | 1  |
| HS14080747-03                                                           | MW-5           | 19 Aug 2014 12:10 |           | 22 Aug 2014 10:57 | 22 Aug 2014 15:32 | 1  |
| HS14080747-04                                                           | MW-28          | 19 Aug 2014 13:45 |           | 22 Aug 2014 10:57 | 22 Aug 2014 22:21 | 1  |
| HS14080747-05                                                           | MW-19          | 19 Aug 2014 15:10 |           | 22 Aug 2014 10:57 | 22 Aug 2014 22:42 | 1  |
| HS14080747-06                                                           | MW-20          | 19 Aug 2014 16:00 |           | 22 Aug 2014 10:57 | 22 Aug 2014 23:02 | 1  |
| HS14080747-07                                                           | MW-25          | 19 Aug 2014 18:05 |           | 22 Aug 2014 10:57 | 22 Aug 2014 23:22 | 1  |
| HS14080747-08                                                           | MW-21          | 19 Aug 2014 19:00 |           | 22 Aug 2014 10:57 | 22 Aug 2014 23:43 | 1  |
| HS14080747-09                                                           | Dup-1          | 19 Aug 2014 00:00 |           | 22 Aug 2014 10:57 | 25 Aug 2014 22:08 | 1  |
| HS14080747-10                                                           | Dup-2          | 19 Aug 2014 00:00 |           | 22 Aug 2014 10:57 | 25 Aug 2014 22:29 | 1  |
| HS14080747-12                                                           | MW-12R         | 20 Aug 2014 08:55 |           | 22 Aug 2014 10:57 | 25 Aug 2014 22:49 | 1  |
| HS14080747-14                                                           | MW-22          | 20 Aug 2014 11:50 |           | 22 Aug 2014 10:57 | 25 Aug 2014 23:09 | 1  |
| HS14080747-15                                                           | MW-18          | 20 Aug 2014 13:45 |           | 22 Aug 2014 10:57 | 25 Aug 2014 23:29 | 1  |
| <b>Batch ID 85403 Test Name : MERCURY BY SW7470A Matrix: Water</b>      |                |                   |           |                   |                   |    |
| HS14080747-01                                                           | MW-13          | 19 Aug 2014 10:10 |           | 22 Aug 2014 11:53 | 22 Aug 2014 16:27 | 1  |
| HS14080747-02                                                           | MW-16          | 19 Aug 2014 11:20 |           | 22 Aug 2014 11:53 | 22 Aug 2014 16:29 | 1  |
| HS14080747-03                                                           | MW-5           | 19 Aug 2014 12:10 |           | 22 Aug 2014 11:53 | 22 Aug 2014 16:20 | 1  |
| HS14080747-04                                                           | MW-28          | 19 Aug 2014 13:45 |           | 22 Aug 2014 11:53 | 22 Aug 2014 16:30 | 1  |
| HS14080747-05                                                           | MW-19          | 19 Aug 2014 15:10 |           | 22 Aug 2014 11:53 | 22 Aug 2014 16:32 | 1  |
| HS14080747-06                                                           | MW-20          | 19 Aug 2014 16:00 |           | 22 Aug 2014 11:53 | 22 Aug 2014 16:37 | 1  |
| HS14080747-07                                                           | MW-25          | 19 Aug 2014 18:05 |           | 22 Aug 2014 11:53 | 22 Aug 2014 16:39 | 1  |
| HS14080747-08                                                           | MW-21          | 19 Aug 2014 19:00 |           | 22 Aug 2014 11:53 | 22 Aug 2014 16:41 | 1  |
| HS14080747-09                                                           | Dup-1          | 19 Aug 2014 00:00 |           | 22 Aug 2014 11:53 | 22 Aug 2014 16:42 | 1  |
| HS14080747-10                                                           | Dup-2          | 19 Aug 2014 00:00 |           | 22 Aug 2014 11:53 | 22 Aug 2014 16:44 | 1  |
| HS14080747-11                                                           | MW-11          | 20 Aug 2014 07:45 |           | 22 Aug 2014 11:53 | 22 Aug 2014 16:46 | 1  |
| HS14080747-12                                                           | MW-12R         | 20 Aug 2014 08:55 |           | 22 Aug 2014 11:53 | 22 Aug 2014 16:47 | 1  |
| HS14080747-13                                                           | MW-14          | 20 Aug 2014 08:45 |           | 22 Aug 2014 11:53 | 22 Aug 2014 16:49 | 1  |
| HS14080747-14                                                           | MW-22          | 20 Aug 2014 11:50 |           | 22 Aug 2014 11:53 | 22 Aug 2014 16:51 | 1  |
| HS14080747-15                                                           | MW-18          | 20 Aug 2014 13:45 |           | 22 Aug 2014 11:53 | 22 Aug 2014 17:05 | 1  |

**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining - SA  
**WorkOrder:** HS14080747

**DATES REPORT**

| Sample ID                                                                   | Client Samp ID | Collection Date   | TCLP Date | Prep Date         | Analysis Date     | DF  |
|-----------------------------------------------------------------------------|----------------|-------------------|-----------|-------------------|-------------------|-----|
| <b>Batch ID 85498 Test Name : DISSOLVED METALS BY SW6020A Matrix: Water</b> |                |                   |           |                   |                   |     |
| HS14080747-01                                                               | MW-13          | 19 Aug 2014 10:10 |           | 26 Aug 2014 10:00 | 28 Aug 2014 17:46 | 1   |
| HS14080747-01                                                               | MW-13          | 19 Aug 2014 10:10 |           | 26 Aug 2014 10:00 | 02 Sep 2014 18:39 | 100 |
| HS14080747-02                                                               | MW-16          | 19 Aug 2014 11:20 |           | 26 Aug 2014 10:00 | 28 Aug 2014 17:49 | 1   |
| HS14080747-04                                                               | MW-28          | 19 Aug 2014 13:45 |           | 26 Aug 2014 10:00 | 28 Aug 2014 17:56 | 1   |
| HS14080747-05                                                               | MW-19          | 19 Aug 2014 15:10 |           | 26 Aug 2014 10:00 | 28 Aug 2014 18:04 | 1   |
| HS14080747-06                                                               | MW-20          | 19 Aug 2014 16:00 |           | 26 Aug 2014 10:00 | 28 Aug 2014 18:07 | 1   |
| HS14080747-07                                                               | MW-25          | 19 Aug 2014 18:05 |           | 26 Aug 2014 10:00 | 28 Aug 2014 18:09 | 1   |
| HS14080747-07                                                               | MW-25          | 19 Aug 2014 18:05 |           | 26 Aug 2014 10:00 | 02 Sep 2014 18:42 | 100 |
| HS14080747-08                                                               | MW-21          | 19 Aug 2014 19:00 |           | 26 Aug 2014 10:00 | 28 Aug 2014 18:12 | 1   |
| HS14080747-08                                                               | MW-21          | 19 Aug 2014 19:00 |           | 26 Aug 2014 10:00 | 02 Sep 2014 18:44 | 100 |
| HS14080747-09                                                               | Dup-1          | 19 Aug 2014 00:00 |           | 26 Aug 2014 10:00 | 28 Aug 2014 18:15 | 1   |
| HS14080747-10                                                               | Dup-2          | 19 Aug 2014 00:00 |           | 26 Aug 2014 10:00 | 28 Aug 2014 18:17 | 1   |
| HS14080747-10                                                               | Dup-2          | 19 Aug 2014 00:00 |           | 26 Aug 2014 10:00 | 02 Sep 2014 18:47 | 100 |
| HS14080747-11                                                               | MW-11          | 20 Aug 2014 07:45 |           | 26 Aug 2014 10:00 | 28 Aug 2014 18:20 | 1   |
| HS14080747-11                                                               | MW-11          | 20 Aug 2014 07:45 |           | 26 Aug 2014 10:00 | 02 Sep 2014 18:49 | 100 |
| HS14080747-12                                                               | MW-12R         | 20 Aug 2014 08:55 |           | 26 Aug 2014 10:00 | 28 Aug 2014 18:23 | 1   |
| HS14080747-13                                                               | MW-14          | 20 Aug 2014 08:45 |           | 26 Aug 2014 10:00 | 28 Aug 2014 18:25 | 1   |
| HS14080747-14                                                               | MW-22          | 20 Aug 2014 11:50 |           | 26 Aug 2014 10:00 | 28 Aug 2014 18:28 | 1   |
| HS14080747-14                                                               | MW-22          | 20 Aug 2014 11:50 |           | 26 Aug 2014 10:00 | 03 Sep 2014 16:33 | 100 |
| HS14080747-14                                                               | MW-22          | 20 Aug 2014 11:50 |           | 26 Aug 2014 10:00 | 02 Sep 2014 19:03 | 100 |
| HS14080747-15                                                               | MW-18          | 20 Aug 2014 13:45 |           | 26 Aug 2014 10:00 | 28 Aug 2014 18:36 | 1   |
| <b>Batch ID 85499 Test Name : DISSOLVED METALS BY SW6020A Matrix: Water</b> |                |                   |           |                   |                   |     |
| HS14080747-03                                                               | MW-5           | 19 Aug 2014 12:10 |           | 26 Aug 2014 10:30 | 05 Sep 2014 11:36 | 1   |
| HS14080747-03                                                               | MW-5           | 19 Aug 2014 12:10 |           | 26 Aug 2014 10:30 | 04 Sep 2014 17:43 | 1   |
| <b>Batch ID R239746 Test Name : VOLATILES - SW8260C Matrix: Water</b>       |                |                   |           |                   |                   |     |
| HS14080747-01                                                               | MW-13          | 19 Aug 2014 10:10 |           |                   | 22 Aug 2014 20:27 | 1   |
| HS14080747-02                                                               | MW-16          | 19 Aug 2014 11:20 |           |                   | 22 Aug 2014 20:56 | 1   |
| HS14080747-04                                                               | MW-28          | 19 Aug 2014 13:45 |           |                   | 22 Aug 2014 21:25 | 1   |
| HS14080747-05                                                               | MW-19          | 19 Aug 2014 15:10 |           |                   | 22 Aug 2014 21:54 | 1   |

**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining - SA  
**WorkOrder:** HS14080747

**DATES REPORT**

| Sample ID                                                             | Client Samp ID | Collection Date   | TCLP Date | Prep Date | Analysis Date     | DF |
|-----------------------------------------------------------------------|----------------|-------------------|-----------|-----------|-------------------|----|
| <b>Batch ID R239820 Test Name : VOLATILES - SW8260C Matrix: Water</b> |                |                   |           |           |                   |    |
| HS14080747-03                                                         | MW-5           | 19 Aug 2014 12:10 |           |           | 25 Aug 2014 12:04 | 1  |
| HS14080747-06                                                         | MW-20          | 19 Aug 2014 16:00 |           |           | 25 Aug 2014 12:33 | 1  |
| HS14080747-07                                                         | MW-25          | 19 Aug 2014 18:05 |           |           | 25 Aug 2014 15:02 | 1  |
| HS14080747-08                                                         | MW-21          | 19 Aug 2014 19:00 |           |           | 25 Aug 2014 15:33 | 1  |
| HS14080747-09                                                         | Dup-1          | 19 Aug 2014 00:00 |           |           | 25 Aug 2014 16:05 | 1  |
| HS14080747-10                                                         | Dup-2          | 19 Aug 2014 00:00 |           |           | 25 Aug 2014 16:36 | 1  |
| HS14080747-11                                                         | MW-11          | 20 Aug 2014 07:45 |           |           | 25 Aug 2014 17:09 | 1  |
| HS14080747-12                                                         | MW-12R         | 20 Aug 2014 08:55 |           |           | 25 Aug 2014 17:42 | 1  |
| HS14080747-13                                                         | MW-14          | 20 Aug 2014 08:45 |           |           | 25 Aug 2014 18:14 | 1  |
| HS14080747-14                                                         | MW-22          | 20 Aug 2014 11:50 |           |           | 25 Aug 2014 18:46 | 1  |
| HS14080747-15                                                         | MW-18          | 20 Aug 2014 13:45 |           |           | 25 Aug 2014 19:17 | 1  |
| <b>Batch ID R239955 Test Name : PH BY SM4500H+ B Matrix: Water</b>    |                |                   |           |           |                   |    |
| HS14080747-01                                                         | MW-13          | 19 Aug 2014 10:10 |           |           | 26 Aug 2014 21:21 | 1  |
| HS14080747-02                                                         | MW-16          | 19 Aug 2014 11:20 |           |           | 26 Aug 2014 21:27 | 1  |
| HS14080747-03                                                         | MW-5           | 19 Aug 2014 12:10 |           |           | 26 Aug 2014 21:33 | 1  |
| HS14080747-04                                                         | MW-28          | 19 Aug 2014 13:45 |           |           | 26 Aug 2014 21:45 | 1  |
| HS14080747-05                                                         | MW-19          | 19 Aug 2014 15:10 |           |           | 26 Aug 2014 21:59 | 1  |
| HS14080747-06                                                         | MW-20          | 19 Aug 2014 16:00 |           |           | 26 Aug 2014 22:05 | 1  |
| HS14080747-07                                                         | MW-25          | 19 Aug 2014 18:05 |           |           | 26 Aug 2014 22:11 | 1  |
| HS14080747-08                                                         | MW-21          | 19 Aug 2014 19:00 |           |           | 26 Aug 2014 22:16 | 1  |
| HS14080747-09                                                         | Dup-1          | 19 Aug 2014 00:00 |           |           | 26 Aug 2014 22:23 | 1  |
| HS14080747-10                                                         | Dup-2          | 19 Aug 2014 00:00 |           |           | 26 Aug 2014 22:29 | 1  |
| HS14080747-12                                                         | MW-12R         | 20 Aug 2014 08:55 |           |           | 26 Aug 2014 22:35 | 1  |
| HS14080747-14                                                         | MW-22          | 20 Aug 2014 11:50 |           |           | 26 Aug 2014 22:50 | 1  |
| HS14080747-15                                                         | MW-18          | 20 Aug 2014 13:45 |           |           | 26 Aug 2014 22:56 | 1  |

**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining - SA  
**WorkOrder:** HS14080747

**DATES REPORT**

| Sample ID                                                                           | Client Samp ID | Collection Date   | TCLP Date | Prep Date | Analysis Date     | DF |
|-------------------------------------------------------------------------------------|----------------|-------------------|-----------|-----------|-------------------|----|
| <b>Batch ID R239956 Test Name : ALKALINITY BY SM2320B Matrix: Water</b>             |                |                   |           |           |                   |    |
| HS14080747-01                                                                       | MW-13          | 19 Aug 2014 10:10 |           |           | 26 Aug 2014 21:21 | 1  |
| HS14080747-02                                                                       | MW-16          | 19 Aug 2014 11:20 |           |           | 26 Aug 2014 21:27 | 1  |
| HS14080747-03                                                                       | MW-5           | 19 Aug 2014 12:10 |           |           | 26 Aug 2014 21:33 | 1  |
| HS14080747-04                                                                       | MW-28          | 19 Aug 2014 13:45 |           |           | 26 Aug 2014 21:45 | 1  |
| HS14080747-05                                                                       | MW-19          | 19 Aug 2014 15:10 |           |           | 26 Aug 2014 21:59 | 1  |
| HS14080747-06                                                                       | MW-20          | 19 Aug 2014 16:00 |           |           | 26 Aug 2014 22:05 | 1  |
| HS14080747-07                                                                       | MW-25          | 19 Aug 2014 18:05 |           |           | 26 Aug 2014 22:11 | 1  |
| HS14080747-08                                                                       | MW-21          | 19 Aug 2014 19:00 |           |           | 26 Aug 2014 22:16 | 1  |
| HS14080747-09                                                                       | Dup-1          | 19 Aug 2014 00:00 |           |           | 26 Aug 2014 22:23 | 1  |
| HS14080747-10                                                                       | Dup-2          | 19 Aug 2014 00:00 |           |           | 26 Aug 2014 22:29 | 1  |
| HS14080747-12                                                                       | MW-12R         | 20 Aug 2014 08:55 |           |           | 26 Aug 2014 22:35 | 1  |
| HS14080747-14                                                                       | MW-22          | 20 Aug 2014 11:50 |           |           | 26 Aug 2014 22:50 | 1  |
| HS14080747-15                                                                       | MW-18          | 20 Aug 2014 13:45 |           |           | 26 Aug 2014 22:56 | 1  |
| <b>Batch ID R239982 Test Name : TOTAL DISSOLVED SOLIDS BY SM2540C Matrix: Water</b> |                |                   |           |           |                   |    |
| HS14080747-01                                                                       | MW-13          | 19 Aug 2014 10:10 |           |           | 25 Aug 2014 18:30 | 1  |
| HS14080747-02                                                                       | MW-16          | 19 Aug 2014 11:20 |           |           | 25 Aug 2014 18:30 | 1  |
| HS14080747-03                                                                       | MW-5           | 19 Aug 2014 12:10 |           |           | 25 Aug 2014 18:30 | 1  |
| HS14080747-04                                                                       | MW-28          | 19 Aug 2014 13:45 |           |           | 25 Aug 2014 18:30 | 1  |
| HS14080747-05                                                                       | MW-19          | 19 Aug 2014 15:10 |           |           | 25 Aug 2014 18:30 | 1  |
| HS14080747-06                                                                       | MW-20          | 19 Aug 2014 16:00 |           |           | 25 Aug 2014 18:30 | 1  |
| HS14080747-07                                                                       | MW-25          | 19 Aug 2014 18:05 |           |           | 25 Aug 2014 18:30 | 1  |
| HS14080747-08                                                                       | MW-21          | 19 Aug 2014 19:00 |           |           | 25 Aug 2014 18:30 | 1  |
| HS14080747-09                                                                       | Dup-1          | 19 Aug 2014 00:00 |           |           | 25 Aug 2014 18:30 | 1  |
| HS14080747-10                                                                       | Dup-2          | 19 Aug 2014 00:00 |           |           | 25 Aug 2014 18:30 | 1  |
| <b>Batch ID R239983 Test Name : TOTAL DISSOLVED SOLIDS BY SM2540C Matrix: Water</b> |                |                   |           |           |                   |    |
| HS14080747-12                                                                       | MW-12R         | 20 Aug 2014 08:55 |           |           | 26 Aug 2014 18:00 | 1  |
| HS14080747-13                                                                       | MW-14          | 20 Aug 2014 08:45 |           |           | 26 Aug 2014 18:00 | 1  |
| HS14080747-14                                                                       | MW-22          | 20 Aug 2014 11:50 |           |           | 26 Aug 2014 18:00 | 1  |
| HS14080747-15                                                                       | MW-18          | 20 Aug 2014 13:45 |           |           | 26 Aug 2014 18:00 | 1  |
| <b>Batch ID R240113 Test Name : VOLATILES - SW8260C Matrix: Water</b>               |                |                   |           |           |                   |    |
| HS14080747-16                                                                       | TB-08-20-14-A  | 21 Aug 2014 17:06 |           |           | 29 Aug 2014 13:29 | 1  |



**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining - SA  
**WorkOrder:** HS14080747

**DATES REPORT**

| Sample ID                                                                           | Client Samp ID | Collection Date   | TCLP Date | Prep Date | Analysis Date     | DF |
|-------------------------------------------------------------------------------------|----------------|-------------------|-----------|-----------|-------------------|----|
| <b>Batch ID R240171 Test Name : SPECIFIC CONDUCTIVITY BY SM2510 B Matrix: Water</b> |                |                   |           |           |                   |    |
| HS14080747-01                                                                       | MW-13          | 19 Aug 2014 10:10 |           |           | 30 Aug 2014 15:27 | 1  |
| HS14080747-02                                                                       | MW-16          | 19 Aug 2014 11:20 |           |           | 30 Aug 2014 15:28 | 1  |
| HS14080747-03                                                                       | MW-5           | 19 Aug 2014 12:10 |           |           | 30 Aug 2014 15:29 | 1  |
| HS14080747-04                                                                       | MW-28          | 19 Aug 2014 13:45 |           |           | 30 Aug 2014 15:31 | 1  |
| HS14080747-05                                                                       | MW-19          | 19 Aug 2014 15:10 |           |           | 30 Aug 2014 15:34 | 1  |
| HS14080747-06                                                                       | MW-20          | 19 Aug 2014 16:00 |           |           | 30 Aug 2014 15:36 | 1  |
| HS14080747-07                                                                       | MW-25          | 19 Aug 2014 18:05 |           |           | 30 Aug 2014 15:37 | 1  |
| HS14080747-08                                                                       | MW-21          | 19 Aug 2014 19:00 |           |           | 30 Aug 2014 15:38 | 1  |
| HS14080747-09                                                                       | Dup-1          | 19 Aug 2014 00:00 |           |           | 30 Aug 2014 15:39 | 1  |
| HS14080747-10                                                                       | Dup-2          | 19 Aug 2014 00:00 |           |           | 30 Aug 2014 15:41 | 1  |
| HS14080747-12                                                                       | MW-12R         | 20 Aug 2014 08:55 |           |           | 30 Aug 2014 15:42 | 1  |
| HS14080747-14                                                                       | MW-22          | 20 Aug 2014 11:50 |           |           | 30 Aug 2014 15:43 | 1  |
| HS14080747-15                                                                       | MW-18          | 20 Aug 2014 13:45 |           |           | 30 Aug 2014 15:45 | 1  |
| <b>Batch ID R240268 Test Name : ANIONS BY E300.0 Matrix: Water</b>                  |                |                   |           |           |                   |    |
| HS14080747-01                                                                       | MW-13          | 19 Aug 2014 10:10 |           |           | 03 Sep 2014 09:16 | 10 |
| HS14080747-02                                                                       | MW-16          | 19 Aug 2014 11:20 |           |           | 03 Sep 2014 09:37 | 1  |
| <b>Batch ID R240338 Test Name : NITRATE/NITRITE BY E300.0 Matrix: Water</b>         |                |                   |           |           |                   |    |
| HS14080747-01                                                                       | MW-13          | 19 Aug 2014 10:10 |           |           | 04 Sep 2014 03:42 | 5  |
| HS14080747-03                                                                       | MW-5           | 19 Aug 2014 12:10 |           |           | 04 Sep 2014 05:08 | 5  |
| HS14080747-04                                                                       | MW-28          | 19 Aug 2014 13:45 |           |           | 04 Sep 2014 05:30 | 5  |
| HS14080747-05                                                                       | MW-19          | 19 Aug 2014 15:10 |           |           | 04 Sep 2014 05:52 | 5  |
| HS14080747-06                                                                       | MW-20          | 19 Aug 2014 16:00 |           |           | 04 Sep 2014 06:13 | 5  |
| HS14080747-07                                                                       | MW-25          | 19 Aug 2014 18:05 |           |           | 04 Sep 2014 06:35 | 5  |
| HS14080747-08                                                                       | MW-21          | 19 Aug 2014 19:00 |           |           | 04 Sep 2014 06:57 | 5  |
| HS14080747-09                                                                       | Dup-1          | 19 Aug 2014 00:00 |           |           | 04 Sep 2014 07:19 | 5  |
| HS14080747-10                                                                       | Dup-2          | 19 Aug 2014 00:00 |           |           | 04 Sep 2014 07:40 | 5  |
| HS14080747-11                                                                       | MW-11          | 20 Aug 2014 07:45 |           |           | 04 Sep 2014 08:02 | 5  |
| HS14080747-12                                                                       | MW-12R         | 20 Aug 2014 08:55 |           |           | 04 Sep 2014 08:24 | 5  |
| HS14080747-13                                                                       | MW-14          | 20 Aug 2014 08:45 |           |           | 04 Sep 2014 09:29 | 5  |
| HS14080747-14                                                                       | MW-22          | 20 Aug 2014 11:50 |           |           | 04 Sep 2014 09:50 | 5  |
| HS14080747-15                                                                       | MW-18          | 20 Aug 2014 13:45 |           |           | 04 Sep 2014 10:12 | 5  |

**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining - SA  
**WorkOrder:** HS14080747

**DATES REPORT**

| Sample ID                                                                   | Client Samp ID | Collection Date   | TCLP Date | Prep Date | Analysis Date     | DF |
|-----------------------------------------------------------------------------|----------------|-------------------|-----------|-----------|-------------------|----|
| <b>Batch ID R240342 Test Name : ANIONS BY E300.0 Matrix: Water</b>          |                |                   |           |           |                   |    |
| HS14080747-03                                                               | MW-5           | 19 Aug 2014 12:10 |           |           | 03 Sep 2014 11:48 | 1  |
| HS14080747-04                                                               | MW-28          | 19 Aug 2014 13:45 |           |           | 03 Sep 2014 12:53 | 1  |
| HS14080747-05                                                               | MW-19          | 19 Aug 2014 15:10 |           |           | 03 Sep 2014 13:14 | 5  |
| HS14080747-06                                                               | MW-20          | 19 Aug 2014 16:00 |           |           | 03 Sep 2014 13:36 | 5  |
| HS14080747-07                                                               | MW-25          | 19 Aug 2014 18:05 |           |           | 03 Sep 2014 13:58 | 5  |
| HS14080747-08                                                               | MW-21          | 19 Aug 2014 19:00 |           |           | 03 Sep 2014 14:19 | 1  |
| HS14080747-09                                                               | Dup-1          | 19 Aug 2014 00:00 |           |           | 03 Sep 2014 14:41 | 5  |
| HS14080747-10                                                               | Dup-2          | 19 Aug 2014 00:00 |           |           | 03 Sep 2014 15:46 | 5  |
| HS14080747-12                                                               | MW-12R         | 20 Aug 2014 08:55 |           |           | 03 Sep 2014 16:08 | 1  |
| HS14080747-14                                                               | MW-22          | 20 Aug 2014 11:50 |           |           | 03 Sep 2014 16:30 | 1  |
| HS14080747-15                                                               | MW-18          | 20 Aug 2014 13:45 |           |           | 03 Sep 2014 16:51 | 1  |
| <b>Batch ID R240428 Test Name : ANIONS BY E300.0 Matrix: Water</b>          |                |                   |           |           |                   |    |
| HS14080747-08                                                               | MW-21          | 19 Aug 2014 19:00 |           |           | 05 Sep 2014 15:43 | 2  |
| HS14080747-14                                                               | MW-22          | 20 Aug 2014 11:50 |           |           | 05 Sep 2014 16:04 | 2  |
| HS14080747-15                                                               | MW-18          | 20 Aug 2014 13:45 |           |           | 05 Sep 2014 16:26 | 2  |
| <b>Batch ID R240429 Test Name : NITRATE/NITRITE BY E300.0 Matrix: Water</b> |                |                   |           |           |                   |    |
| HS14080747-02                                                               | MW-16          | 19 Aug 2014 11:20 |           |           | 05 Sep 2014 16:48 | 5  |

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85403                                    |                             | Instrument: HG03 |         | Method: SW7470                   |                                                 |
|----------------------------------------------------|-----------------------------|------------------|---------|----------------------------------|-------------------------------------------------|
| <b>MBLK</b>                                        | Sample ID: GBLKW5-082214    | Units: mg/L      |         | Analysis Date: 22-Aug-2014 16:17 |                                                 |
| Client ID:                                         | Run ID: HG03_239714         | SeqNo: 2977362   |         | PrepDate: 22-Aug-2014            | DF: 1                                           |
| Analyte                                            | Result                      | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Mercury                                            | ND                          | 0.000200         |         |                                  |                                                 |
| <b>LCS</b>                                         | Sample ID: GLCSW5-082214    | Units: mg/L      |         | Analysis Date: 22-Aug-2014 16:18 |                                                 |
| Client ID:                                         | Run ID: HG03_239714         | SeqNo: 2977363   |         | PrepDate: 22-Aug-2014            | DF: 1                                           |
| Analyte                                            | Result                      | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Mercury                                            | 0.00529                     | 0.000200         | 0.005   | 0 106                            | 80 - 124                                        |
| <b>MS</b>                                          | Sample ID: HS14080747-03MS  | Units: mg/L      |         | Analysis Date: 22-Aug-2014 16:24 |                                                 |
| Client ID: MW-5                                    | Run ID: HG03_239714         | SeqNo: 2977366   |         | PrepDate: 22-Aug-2014            | DF: 1                                           |
| Analyte                                            | Result                      | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Mercury                                            | 0.00529                     | 0.000200         | 0.005   | -0.000018 106                    | 80 - 124                                        |
| <b>MSD</b>                                         | Sample ID: HS14080747-03MSD | Units: mg/L      |         | Analysis Date: 22-Aug-2014 16:25 |                                                 |
| Client ID: MW-5                                    | Run ID: HG03_239714         | SeqNo: 2977367   |         | PrepDate: 22-Aug-2014            | DF: 1                                           |
| Analyte                                            | Result                      | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Mercury                                            | 0.00531                     | 0.000200         | 0.005   | -0.000018 107                    | 80 - 124 0.00529 0.377 20                       |
| <b>DUP</b>                                         | Sample ID: HS14080747-03DUP | Units: mg/L      |         | Analysis Date: 22-Aug-2014 16:22 |                                                 |
| Client ID: MW-5                                    | Run ID: HG03_239714         | SeqNo: 2977365   |         | PrepDate: 22-Aug-2014            | DF: 1                                           |
| Analyte                                            | Result                      | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Mercury                                            | ND                          | 0.000200         |         | -0.000018                        | 0 20                                            |
| The following samples were analyzed in this batch: |                             |                  |         |                                  |                                                 |
| HS14080747-01                                      |                             | HS14080747-02    |         | HS14080747-03                    |                                                 |
| HS14080747-05                                      |                             | HS14080747-06    |         | HS14080747-07                    |                                                 |
| HS14080747-09                                      |                             | HS14080747-10    |         | HS14080747-11                    |                                                 |
| HS14080747-13                                      |                             | HS14080747-14    |         | HS14080747-15                    |                                                 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85498 |                               | Instrument: ICPMS05   |         | Method: SW6020                          |                                                 |
|-----------------|-------------------------------|-----------------------|---------|-----------------------------------------|-------------------------------------------------|
| <b>MBLK</b>     | Sample ID: <b>MBLK-85498</b>  | Units: <b>mg/L</b>    |         | Analysis Date: <b>28-Aug-2014 17:06</b> |                                                 |
| Client ID:      | Run ID: <b>ICPMS05_240022</b> | SeqNo: <b>2985454</b> |         | PrepDate: <b>26-Aug-2014</b>            | DF: <b>1</b>                                    |
| Analyte         | Result                        | PQL                   | SPK Val | SPK Ref Value %REC                      | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Aluminum        | ND                            | 0.0100                |         |                                         |                                                 |
| Arsenic         | ND                            | 0.00500               |         |                                         |                                                 |
| Barium          | ND                            | 0.00500               |         |                                         |                                                 |
| Boron           | ND                            | 0.0500                |         |                                         |                                                 |
| Cadmium         | ND                            | 0.00200               |         |                                         |                                                 |
| Calcium         | ND                            | 0.500                 |         |                                         |                                                 |
| Chromium        | ND                            | 0.00500               |         |                                         |                                                 |
| Cobalt          | ND                            | 0.00500               |         |                                         |                                                 |
| Copper          | ND                            | 0.00500               |         |                                         |                                                 |
| Iron            | ND                            | 0.200                 |         |                                         |                                                 |
| Lead            | ND                            | 0.00500               |         |                                         |                                                 |
| Magnesium       | ND                            | 0.200                 |         |                                         |                                                 |
| Manganese       | ND                            | 0.00500               |         |                                         |                                                 |
| Molybdenum      | ND                            | 0.00500               |         |                                         |                                                 |
| Nickel          | ND                            | 0.00500               |         |                                         |                                                 |
| Potassium       | ND                            | 0.200                 |         |                                         |                                                 |
| Selenium        | ND                            | 0.00500               |         |                                         |                                                 |
| Silver          | ND                            | 0.00500               |         |                                         |                                                 |
| Uranium         | ND                            | 0.00500               |         |                                         |                                                 |
| Zinc            | ND                            | 0.00500               |         |                                         |                                                 |

| <b>MBLK</b> | Sample ID: <b>MBLK-85498</b>  | Units: <b>mg/L</b>    |         | Analysis Date: <b>03-Sep-2014 16:30</b> |                                                 |
|-------------|-------------------------------|-----------------------|---------|-----------------------------------------|-------------------------------------------------|
| Client ID:  | Run ID: <b>ICPMS05_240248</b> | SeqNo: <b>2990434</b> |         | PrepDate: <b>26-Aug-2014</b>            | DF: <b>1</b>                                    |
| Analyte     | Result                        | PQL                   | SPK Val | SPK Ref Value %REC                      | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Sodium      | ND                            | 0.200                 |         |                                         |                                                 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85498 |                               | Instrument: ICPMS05   |         | Method: SW6020                          |                                                 |
|-----------------|-------------------------------|-----------------------|---------|-----------------------------------------|-------------------------------------------------|
| <b>LCS</b>      | Sample ID: <b>MLCS-85498</b>  | Units: <b>mg/L</b>    |         | Analysis Date: <b>28-Aug-2014 17:09</b> |                                                 |
| Client ID:      | Run ID: <b>ICPMS05_240022</b> | SeqNo: <b>2985455</b> |         | PrepDate: <b>26-Aug-2014</b>            | DF: <b>1</b>                                    |
| Analyte         | Result                        | PQL                   | SPK Val | SPK Ref Value %REC                      | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Aluminum        | 0.1145                        | 0.0100                | 0.1     | 0 114                                   | 80 - 120                                        |
| Arsenic         | 0.04875                       | 0.00500               | 0.05    | 0 97.5                                  | 80 - 120                                        |
| Barium          | 0.05018                       | 0.00500               | 0.05    | 0 100                                   | 80 - 120                                        |
| Boron           | 0.4834                        | 0.0500                | 0.5     | 0 96.7                                  | 80 - 120                                        |
| Cadmium         | 0.04862                       | 0.00200               | 0.05    | 0 97.2                                  | 80 - 120                                        |
| Calcium         | 4.82                          | 0.500                 | 5       | 0 96.4                                  | 80 - 120                                        |
| Chromium        | 0.04853                       | 0.00500               | 0.05    | 0 97.1                                  | 80 - 120                                        |
| Cobalt          | 0.04846                       | 0.00500               | 0.05    | 0 96.9                                  | 80 - 120                                        |
| Copper          | 0.04833                       | 0.00500               | 0.05    | 0 96.7                                  | 80 - 120                                        |
| Iron            | 4.697                         | 0.200                 | 5       | 0 93.9                                  | 80 - 120                                        |
| Lead            | 0.04809                       | 0.00500               | 0.05    | 0 96.2                                  | 80 - 120                                        |
| Magnesium       | 4.986                         | 0.200                 | 5       | 0 99.7                                  | 80 - 120                                        |
| Manganese       | 0.04874                       | 0.00500               | 0.05    | 0 97.5                                  | 80 - 120                                        |
| Molybdenum      | 0.04768                       | 0.00500               | 0.05    | 0 95.4                                  | 80 - 120                                        |
| Nickel          | 0.05006                       | 0.00500               | 0.05    | 0 100                                   | 80 - 120                                        |
| Potassium       | 4.969                         | 0.200                 | 5       | 0 99.4                                  | 80 - 120                                        |
| Selenium        | 0.05068                       | 0.00500               | 0.05    | 0 101                                   | 80 - 120                                        |
| Silver          | 0.04648                       | 0.00500               | 0.05    | 0 93.0                                  | 80 - 120                                        |
| Sodium          | 5.013                         | 0.200                 | 5       | 0 100                                   | 80 - 120                                        |
| Zinc            | 0.05119                       | 0.00500               | 0.05    | 0 102                                   | 80 - 120                                        |
| <b>LCS</b>      | Sample ID: <b>MLCS-85498</b>  | Units: <b>mg/L</b>    |         | Analysis Date: <b>02-Sep-2014 18:52</b> |                                                 |
| Client ID:      | Run ID: <b>ICPMS05_240202</b> | SeqNo: <b>2988769</b> |         | PrepDate: <b>26-Aug-2014</b>            | DF: <b>1</b>                                    |
| Analyte         | Result                        | PQL                   | SPK Val | SPK Ref Value %REC                      | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Uranium         | 0.09328                       | 0.00500               | 0.1     | 0 93.3                                  | 80 - 120                                        |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85498 |         | Instrument: ICPMS05        |         | Method: SW6020 |        |                                  |               |        |           |      |
|-----------------|---------|----------------------------|---------|----------------|--------|----------------------------------|---------------|--------|-----------|------|
| MS              |         | Sample ID: HS14080602-02MS |         | Units: mg/L    |        | Analysis Date: 28-Aug-2014 17:30 |               |        |           |      |
| Client ID:      |         | Run ID: ICPMS05_240022     |         | SeqNo: 2985463 |        | PrepDate: 26-Aug-2014            |               | DF: 50 |           |      |
| Analyte         | Result  | PQL                        | SPK Val | SPK Ref Value  | %REC   | Control Limit                    | RPD Ref Value | %RPD   | RPD Limit | Qual |
| Aluminum        | 0.3168  | 0.500                      | 5       | 0.0698         | 4.94   | 75 - 125                         |               |        |           | JS   |
| Arsenic         | 0.1291  | 0.250                      | 5       | 0.006501       | 2.45   | 75 - 125                         |               |        |           | JS   |
| Barium          | 160.2   | 0.250                      | 5       | 145.3          | 297    | 75 - 125                         |               |        |           | SEO  |
| Boron           | 36.31   | 2.50                       | 50      | 32.74          | 7.12   | 75 - 125                         |               |        |           | S    |
| Cadmium         | 0.1211  | 0.100                      | 5       | 0.000507       | 2.41   | 75 - 125                         |               |        |           | S    |
| Calcium         | 4986    | 25.0                       | 50      | 4564           | 845    | 75 - 125                         |               |        |           | SO   |
| Chromium        | 0.099   | 0.250                      | 5       | -0.01354       | 2.25   | 75 - 125                         |               |        |           | JS   |
| Cobalt          | 0.1014  | 0.250                      | 5       | 0.001558       | 2.00   | 75 - 125                         |               |        |           | JS   |
| Copper          | 0.07686 | 0.250                      | 5       | -0.02593       | 2.06   | 75 - 125                         |               |        |           | JS   |
| Iron            | 36.63   | 10.0                       | 50      | 24.5           | 24.3   | 75 - 125                         |               |        |           | S    |
| Lead            | 0.1267  | 0.250                      | 5       | 0.01512        | 2.23   | 75 - 125                         |               |        |           | JS   |
| Magnesium       | 997.1   | 10.0                       | 50      | 906.6          | 181    | 75 - 125                         |               |        |           | SO   |
| Manganese       | 5.543   | 0.250                      | 5       | 5.014          | 10.6   | 75 - 125                         |               |        |           | S    |
| Molybdenum      | 0.1202  | 0.250                      | 5       | 0.003094       | 2.34   | 75 - 125                         |               |        |           | JS   |
| Nickel          | 0.2168  | 0.250                      | 5       | 0.08311        | 2.67   | 75 - 125                         |               |        |           | JS   |
| Potassium       | 412.7   | 10.0                       | 50      | 362.7          | 99.8   | 75 - 125                         |               |        |           | O    |
| Selenium        | 0.1239  | 0.250                      | 5       | 0.0187         | 2.10   | 75 - 125                         |               |        |           | JS   |
| Silver          | 0.1006  | 0.250                      | 5       | -0.000122      | 2.01   | 75 - 125                         |               |        |           | JS   |
| Sodium          | ND      | 10.0                       | 50      | 0              | 0      | 75 - 125                         |               |        |           | S    |
| Uranium         | ND      | 0.250                      | 5       | 0.00081        | -      | 75 - 125                         |               |        |           | S    |
|                 |         |                            |         |                | 0.0162 |                                  |               |        |           |      |
| Zinc            | 3.477   | 0.250                      | 5       | 3.04           | 8.75   | 75 - 125                         |               |        |           | S    |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85498 |         | Instrument: ICPMS05         |         | Method: SW6020 |                 |                                  |               |        |           |      |
|-----------------|---------|-----------------------------|---------|----------------|-----------------|----------------------------------|---------------|--------|-----------|------|
| MSD             |         | Sample ID: HS14080602-02MSD |         | Units: mg/L    |                 | Analysis Date: 28-Aug-2014 17:33 |               |        |           |      |
| Client ID:      |         | Run ID: ICPMS05_240022      |         | SeqNo: 2985464 |                 | PrepDate: 26-Aug-2014            |               | DF: 50 |           |      |
| Analyte         | Result  | PQL                         | SPK Val | SPK Ref Value  | %REC            | Control Limit                    | RPD Ref Value | %RPD   | RPD Limit | Qual |
| Aluminum        | 0.3227  | 0.500                       | 5       | 0.0698         | 5.06            | 75 - 125                         | 0.3168        | 0      | 20        | JS   |
| Arsenic         | 0.1175  | 0.250                       | 5       | 0.006501       | 2.22            | 75 - 125                         | 0.1291        | 0      | 20        | JS   |
| Barium          | 150.2   | 0.250                       | 5       | 145.3          | 97.6            | 75 - 125                         | 160.2         | 6.43   | 20        | EO   |
| Boron           | 34.47   | 2.50                        | 50      | 32.74          | 3.45            | 75 - 125                         | 36.31         | 5.19   | 20        | S    |
| Cadmium         | 0.1013  | 0.100                       | 5       | 0.000507       | 2.02            | 75 - 125                         | 0.1211        | 17.8   | 20        | S    |
| Calcium         | 4569    | 25.0                        | 50      | 4564           | 11.6            | 75 - 125                         | 4986          | 8.72   | 20        | SO   |
| Chromium        | 0.0929  | 0.250                       | 5       | -0.01354       | 2.13            | 75 - 125                         | 0.099         | 0      | 20        | JS   |
| Cobalt          | 0.1039  | 0.250                       | 5       | 0.001558       | 2.05            | 75 - 125                         | 0.1014        | 0      | 20        | JS   |
| Copper          | 0.06748 | 0.250                       | 5       | -0.02593       | 1.87            | 75 - 125                         | 0.07686       | 0      | 20        | JS   |
| Iron            | 34.45   | 10.0                        | 50      | 24.5           | 19.9            | 75 - 125                         | 36.63         | 6.13   | 20        | S    |
| Lead            | 0.1196  | 0.250                       | 5       | 0.01512        | 2.09            | 75 - 125                         | 0.1267        | 0      | 20        | JS   |
| Magnesium       | 937.2   | 10.0                        | 50      | 906.6          | 61.2            | 75 - 125                         | 997.1         | 6.19   | 20        | SO   |
| Manganese       | 5.109   | 0.250                       | 5       | 5.014          | 1.89            | 75 - 125                         | 5.543         | 8.16   | 20        | S    |
| Molybdenum      | 0.1057  | 0.250                       | 5       | 0.003094       | 2.05            | 75 - 125                         | 0.1202        | 0      | 20        | JS   |
| Nickel          | 0.2343  | 0.250                       | 5       | 0.08311        | 3.02            | 75 - 125                         | 0.2168        | 0      | 20        | JS   |
| Potassium       | 388.9   | 10.0                        | 50      | 362.7          | 52.3            | 75 - 125                         | 412.7         | 5.93   | 20        | SO   |
| Selenium        | 0.1326  | 0.250                       | 5       | 0.0187         | 2.28            | 75 - 125                         | 0.1239        | 0      | 20        | JS   |
| Silver          | 0.09088 | 0.250                       | 5       | -0.000122      | 1.82            | 75 - 125                         | 0.1006        | 0      | 20        | JS   |
| Sodium          | ND      | 10.0                        | 50      | 0              | 0               | 75 - 125                         | 0             | 0      | 20        | S    |
| Uranium         | ND      | 0.250                       | 5       | 0.00081        | -<br>0.01<br>62 | 75 - 125                         | 0             | 0      | 20        | S    |
| Zinc            | 3.216   | 0.250                       | 5       | 3.04           | 3.52            | 75 - 125                         | 3.477         | 7.82   | 20        | S    |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85498 |                             | Instrument: ICPMS05 |         | Method: SW6020                   |                                                 |
|-----------------|-----------------------------|---------------------|---------|----------------------------------|-------------------------------------------------|
| <b>DUP</b>      | Sample ID: HS14080602-02DUP | Units: mg/L         |         | Analysis Date: 28-Aug-2014 17:19 |                                                 |
| Client ID:      | Run ID: ICPMS05_240022      | SeqNo: 2985459      |         | PrepDate: 26-Aug-2014            | DF: 50                                          |
| Analyte         | Result                      | PQL                 | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Aluminum        | ND                          | 0.500               |         |                                  | 0.0698 0 20                                     |
| Arsenic         | ND                          | 0.250               |         |                                  | 0.006501 0 20                                   |
| Boron           | 30.42                       | 2.50                |         |                                  | 32.74 7.37 20                                   |
| Cadmium         | ND                          | 0.100               |         |                                  | 0.000507 0 20                                   |
| Calcium         | 4258                        | 25.0                |         |                                  | 4564 6.93 20                                    |
| Chromium        | ND                          | 0.250               |         |                                  | -0.01354 0 20                                   |
| Cobalt          | ND                          | 0.250               |         |                                  | 0.001558 0 20                                   |
| Copper          | ND                          | 0.250               |         |                                  | -0.02593 0 20                                   |
| Iron            | 22.91                       | 10.0                |         |                                  | 24.5 6.71 20                                    |
| Lead            | ND                          | 0.250               |         |                                  | 0.01512 0 20                                    |
| Magnesium       | 828.3                       | 10.0                |         |                                  | 906.6 9.03 20                                   |
| Manganese       | 4.64                        | 0.250               |         |                                  | 5.014 7.76 20                                   |
| Molybdenum      | ND                          | 0.250               |         |                                  | 0.003094 0 20                                   |
| Nickel          | ND                          | 0.250               |         |                                  | 0.08311 0 20                                    |
| Potassium       | 351.3                       | 10.0                |         |                                  | 362.7 3.21 20                                   |
| Selenium        | ND                          | 0.250               |         |                                  | 0.0187 0 20                                     |
| Silver          | ND                          | 0.250               |         |                                  | -0.000122 0 20                                  |
| Uranium         | ND                          | 0.250               |         |                                  | 0.00081 0 20                                    |
| Zinc            | 2.915                       | 0.250               |         |                                  | 3.04 4.19 20                                    |

| <b>DUP</b> | Sample ID: HS14080602-02DUP | Units: mg/L    |         | Analysis Date: 03-Sep-2014 16:28 |                                                 |
|------------|-----------------------------|----------------|---------|----------------------------------|-------------------------------------------------|
| Client ID: | Run ID: ICPMS05_240248      | SeqNo: 2990433 |         | PrepDate: 26-Aug-2014            | DF: 5000                                        |
| Analyte    | Result                      | PQL            | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Barium     | 118.8                       | 25.0           |         |                                  | 135.8 13.4 20                                   |
| Sodium     | 37960                       | 1000           |         |                                  | 42220 10.6 20                                   |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85498 |        | Instrument: ICPMS05        |                | Method: SW6020                   |                                                 |
|-----------------|--------|----------------------------|----------------|----------------------------------|-------------------------------------------------|
| <b>PDS</b>      |        | Sample ID: HS14080602-02BS | Units: mg/L    | Analysis Date: 28-Aug-2014 17:35 |                                                 |
| Client ID:      |        | Run ID: ICPMS05_240022     | SeqNo: 2985465 | PrepDate: 26-Aug-2014            | DF: 50                                          |
| Analyte         | Result | PQL                        | SPK Val        | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Aluminum        | 5.099  | 0.500                      | 5              | 0 102                            | 75 - 125                                        |
| Arsenic         | 5.104  | 0.250                      | 5              | 0 102                            | 75 - 125                                        |
| Boron           | 110.2  | 2.50                       | 50             | 32.74 155                        | 75 - 125 SE                                     |
| Cadmium         | 4.705  | 0.100                      | 5              | 0 94.1                           | 75 - 125                                        |
| Calcium         | 8773   | 25.0                       | 50             | 4564 8420                        | 75 - 125 SO                                     |
| Chromium        | 4.686  | 0.250                      | 5              | 0 93.7                           | 75 - 125                                        |
| Cobalt          | 4.487  | 0.250                      | 5              | 0 89.7                           | 75 - 125                                        |
| Copper          | 4.32   | 0.250                      | 5              | 0 86.4                           | 75 - 125                                        |
| Iron            | 493    | 10.0                       | 50             | 24.5 937                         | 75 - 125 S                                      |
| Lead            | 4.68   | 0.250                      | 5              | 0 93.6                           | 75 - 125                                        |
| Magnesium       | 2136   | 10.0                       | 50             | 906.6 2460                       | 75 - 125 SO                                     |
| Manganese       | 13.91  | 0.250                      | 5              | 5.014 178                        | 75 - 125 S                                      |
| Molybdenum      | 4.699  | 0.250                      | 5              | 0 94.0                           | 75 - 125                                        |
| Nickel          | 4.56   | 0.250                      | 5              | 0.08311 89.5                     | 75 - 125                                        |
| Potassium       | 1192   | 10.0                       | 50             | 362.7 1660                       | 75 - 125 SO                                     |
| Selenium        | 5.488  | 0.250                      | 5              | 0 110                            | 75 - 125                                        |
| Silver          | 4.066  | 0.250                      | 5              | 0 81.3                           | 75 - 125                                        |
| Uranium         | 4.576  | 0.250                      | 5              | 0 91.5                           | 75 - 125                                        |
| Zinc            | 10.32  | 0.250                      | 5              | 3.04 146                         | 75 - 125 S                                      |
| <b>PDS</b>      |        | Sample ID: HS14080602-02BS | Units: mg/L    | Analysis Date: 02-Sep-2014 18:34 |                                                 |
| Client ID:      |        | Run ID: ICPMS05_240202     | SeqNo: 2988762 | PrepDate: 26-Aug-2014            | DF: 5000                                        |
| Analyte         | Result | PQL                        | SPK Val        | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Barium          | 626.5  | 25.0                       | 500            | 135.8 98.1                       | 75 - 125                                        |
| Sodium          | 89540  | 1000                       | 50000          | 42220 94.6                       | 75 - 125                                        |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85498 |                                 | Instrument: ICPMS05 |         | Method: SW6020                   |                                                 |
|-----------------|---------------------------------|---------------------|---------|----------------------------------|-------------------------------------------------|
| <b>SD</b>       | Sample ID: HS14080602-02 DIL SX | Units: mg/L         |         | Analysis Date: 28-Aug-2014 17:27 |                                                 |
| Client ID:      | Run ID: ICPMS05_240022          | SeqNo: 2985462      |         | PrepDate: 26-Aug-2014            | DF: 250                                         |
| Analyte         | Result                          | PQL                 | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Aluminum        | 1.486                           | 2.50                |         |                                  | 0.0698 0 10 J                                   |
| Arsenic         | ND                              | 1.25                |         |                                  | 0.006501 0 10                                   |
| Boron           | 30.95                           | 12.5                |         |                                  | 32.74 5.49 10                                   |
| Cadmium         | ND                              | 0.500               |         |                                  | 0.000507 0 10                                   |
| Calcium         | 3629                            | 125                 |         |                                  | 4564 20.5 10 R                                  |
| Chromium        | ND                              | 1.25                |         |                                  | -0.01354 0 10                                   |
| Cobalt          | ND                              | 1.25                |         |                                  | 0.001558 0 10                                   |
| Copper          | ND                              | 1.25                |         |                                  | -0.02593 0 10                                   |
| Iron            | 21.45                           | 50.0                |         |                                  | 24.5 0 10 J                                     |
| Lead            | ND                              | 1.25                |         |                                  | 0.01512 0 10                                    |
| Magnesium       | 711.1                           | 50.0                |         |                                  | 906.6 21.6 10 R                                 |
| Manganese       | 4.22                            | 1.25                |         |                                  | 5.014 15.8 10 R                                 |
| Molybdenum      | ND                              | 1.25                |         |                                  | 0.003094 0 10                                   |
| Nickel          | 0.4357                          | 1.25                |         |                                  | 0.08311 0 10 J                                  |
| Potassium       | 304.9                           | 50.0                |         |                                  | 362.7 15.9 10 R                                 |
| Selenium        | ND                              | 1.25                |         |                                  | 0.0187 0 10                                     |
| Silver          | ND                              | 1.25                |         |                                  | -0.000122 0 10                                  |
| Uranium         | ND                              | 1.25                |         |                                  | 0.00081 0 10                                    |
| Zinc            | 2.609                           | 1.25                |         |                                  | 3.04 14.2 10 R                                  |

| <b>SD</b>  | Sample ID: HS14080602-02 DIL SX | Units: mg/L    |         | Analysis Date: 02-Sep-2014 18:31 |                                                 |
|------------|---------------------------------|----------------|---------|----------------------------------|-------------------------------------------------|
| Client ID: | Run ID: ICPMS05_240202          | SeqNo: 2988761 |         | PrepDate: 26-Aug-2014            | DF: 25000                                       |
| Analyte    | Result                          | PQL            | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Barium     | 129                             | 125            |         |                                  | 135.8 5.01 10                                   |
| Sodium     | 39860                           | 5000           |         |                                  | 42220 5.58 10                                   |

The following samples were analyzed in this batch:

|               |               |               |               |
|---------------|---------------|---------------|---------------|
| HS14080747-01 | HS14080747-02 | HS14080747-04 | HS14080747-05 |
| HS14080747-06 | HS14080747-07 | HS14080747-08 | HS14080747-09 |
| HS14080747-10 | HS14080747-11 | HS14080747-12 | HS14080747-13 |
| HS14080747-14 | HS14080747-15 |               |               |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85499 |                               | Instrument: ICPMS05   |         | Method: SW6020                          |                                                 |
|-----------------|-------------------------------|-----------------------|---------|-----------------------------------------|-------------------------------------------------|
| <b>MBLK</b>     | Sample ID: <b>MBLK-85499</b>  | Units: <b>mg/L</b>    |         | Analysis Date: <b>04-Sep-2014 17:38</b> |                                                 |
| Client ID:      | Run ID: <b>ICPMS05_240353</b> | SeqNo: <b>2991940</b> |         | PrepDate: <b>26-Aug-2014</b>            | DF: <b>1</b>                                    |
| Analyte         | Result                        | PQL                   | SPK Val | SPK Ref Value %REC                      | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Aluminum        | ND                            | 0.0100                |         |                                         |                                                 |
| Arsenic         | ND                            | 0.00500               |         |                                         |                                                 |
| Barium          | ND                            | 0.00500               |         |                                         |                                                 |
| Cadmium         | ND                            | 0.00200               |         |                                         |                                                 |
| Calcium         | ND                            | 0.500                 |         |                                         |                                                 |
| Chromium        | ND                            | 0.00500               |         |                                         |                                                 |
| Cobalt          | ND                            | 0.00500               |         |                                         |                                                 |
| Copper          | ND                            | 0.00500               |         |                                         |                                                 |
| Iron            | ND                            | 0.200                 |         |                                         |                                                 |
| Lead            | ND                            | 0.00500               |         |                                         |                                                 |
| Magnesium       | ND                            | 0.200                 |         |                                         |                                                 |
| Manganese       | ND                            | 0.00500               |         |                                         |                                                 |
| Molybdenum      | ND                            | 0.00500               |         |                                         |                                                 |
| Nickel          | ND                            | 0.00500               |         |                                         |                                                 |
| Potassium       | ND                            | 0.200                 |         |                                         |                                                 |
| Selenium        | ND                            | 0.00500               |         |                                         |                                                 |
| Silver          | ND                            | 0.00500               |         |                                         |                                                 |
| Sodium          | ND                            | 0.200                 |         |                                         |                                                 |
| Uranium         | ND                            | 0.00500               |         |                                         |                                                 |
| Zinc            | ND                            | 0.00500               |         |                                         |                                                 |

| <b>MBLK</b> | Sample ID: <b>MBLK-85499</b>  | Units: <b>mg/L</b>    |         | Analysis Date: <b>05-Sep-2014 11:31</b> |                                                 |
|-------------|-------------------------------|-----------------------|---------|-----------------------------------------|-------------------------------------------------|
| Client ID:  | Run ID: <b>ICPMS05_240400</b> | SeqNo: <b>2992585</b> |         | PrepDate: <b>26-Aug-2014</b>            | DF: <b>1</b>                                    |
| Analyte     | Result                        | PQL                   | SPK Val | SPK Ref Value %REC                      | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Boron       | ND                            | 0.0500                |         |                                         |                                                 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85499 |                               | Instrument: ICPMS05   |         | Method: SW6020                          |                                                 |
|-----------------|-------------------------------|-----------------------|---------|-----------------------------------------|-------------------------------------------------|
| <b>LCS</b>      | Sample ID: <b>MLCS-85499</b>  | Units: <b>mg/L</b>    |         | Analysis Date: <b>04-Sep-2014 17:41</b> |                                                 |
| Client ID:      | Run ID: <b>ICPMS05_240353</b> | SeqNo: <b>2991941</b> |         | PrepDate: <b>26-Aug-2014</b>            | DF: <b>1</b>                                    |
| Analyte         | Result                        | PQL                   | SPK Val | SPK Ref Value %REC                      | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Aluminum        | 0.1026                        | 0.0100                | 0.1     | 0 103                                   | 80 - 120                                        |
| Arsenic         | 0.04969                       | 0.00500               | 0.05    | 0 99.4                                  | 80 - 120                                        |
| Barium          | 0.04919                       | 0.00500               | 0.05    | 0 98.4                                  | 80 - 120                                        |
| Cadmium         | 0.04894                       | 0.00200               | 0.05    | 0 97.9                                  | 80 - 120                                        |
| Calcium         | 4.801                         | 0.500                 | 5       | 0 96.0                                  | 80 - 120                                        |
| Chromium        | 0.04805                       | 0.00500               | 0.05    | 0 96.1                                  | 80 - 120                                        |
| Cobalt          | 0.04855                       | 0.00500               | 0.05    | 0 97.1                                  | 80 - 120                                        |
| Copper          | 0.04796                       | 0.00500               | 0.05    | 0 95.9                                  | 80 - 120                                        |
| Iron            | 4.74                          | 0.200                 | 5       | 0 94.8                                  | 80 - 120                                        |
| Lead            | 0.04864                       | 0.00500               | 0.05    | 0 97.3                                  | 80 - 120                                        |
| Magnesium       | 4.933                         | 0.200                 | 5       | 0 98.7                                  | 80 - 120                                        |
| Manganese       | 0.04572                       | 0.00500               | 0.05    | 0 91.4                                  | 80 - 120                                        |
| Molybdenum      | 0.04939                       | 0.00500               | 0.05    | 0 98.8                                  | 80 - 120                                        |
| Nickel          | 0.04732                       | 0.00500               | 0.05    | 0 94.6                                  | 80 - 120                                        |
| Potassium       | 5.028                         | 0.200                 | 5       | 0 101                                   | 80 - 120                                        |
| Selenium        | 0.05016                       | 0.00500               | 0.05    | 0 100                                   | 80 - 120                                        |
| Silver          | 0.05105                       | 0.00500               | 0.05    | 0 102                                   | 80 - 120                                        |
| Sodium          | 4.859                         | 0.200                 | 5       | 0 97.2                                  | 80 - 120                                        |
| Uranium         | 0.08036                       | 0.00500               | 0.1     | 0 80.4                                  | 80 - 120                                        |
| Zinc            | 0.04985                       | 0.00500               | 0.05    | 0 99.7                                  | 80 - 120                                        |

| <b>LCS</b> | Sample ID: <b>MLCS-85499</b>  | Units: <b>mg/L</b>    |         | Analysis Date: <b>05-Sep-2014 11:33</b> |                                                 |
|------------|-------------------------------|-----------------------|---------|-----------------------------------------|-------------------------------------------------|
| Client ID: | Run ID: <b>ICPMS05_240400</b> | SeqNo: <b>2992586</b> |         | PrepDate: <b>26-Aug-2014</b>            | DF: <b>1</b>                                    |
| Analyte    | Result                        | PQL                   | SPK Val | SPK Ref Value %REC                      | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Boron      | 0.2009                        | 0.0500                | 0.25    | 0 80.3                                  | 80 - 120                                        |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85499 |         | Instrument: ICPMS05        |         | Method: SW6020 |      |                                  |               |       |           |      |
|-----------------|---------|----------------------------|---------|----------------|------|----------------------------------|---------------|-------|-----------|------|
| <b>MS</b>       |         | Sample ID: HS14080747-03MS |         | Units: mg/L    |      | Analysis Date: 04-Sep-2014 17:56 |               |       |           |      |
| Client ID: MW-5 |         | Run ID: ICPMS05_240353     |         | SeqNo: 2991947 |      | PrepDate: 26-Aug-2014            |               | DF: 1 |           |      |
| Analyte         | Result  | PQL                        | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit | Qual |
| Aluminum        | 0.1552  | 0.0100                     | 0.05    | 0.1484         | 13.4 | 75 - 125                         |               |       |           | S    |
| Arsenic         | 0.05289 | 0.00500                    | 0.05    | 0.002539       | 101  | 75 - 125                         |               |       |           |      |
| Barium          | 0.1708  | 0.00500                    | 0.05    | 0.123          | 95.6 | 75 - 125                         |               |       |           |      |
| Cadmium         | 0.049   | 0.00200                    | 0.05    | 0              | 98.0 | 75 - 125                         |               |       |           |      |
| Calcium         | 82.94   | 0.500                      | 5       | 79.41          | 70.6 | 75 - 125                         |               |       |           | SO   |
| Chromium        | 0.05206 | 0.00500                    | 0.05    | 0.007436       | 89.3 | 75 - 125                         |               |       |           |      |
| Cobalt          | 0.04772 | 0.00500                    | 0.05    | 0              | 95.4 | 75 - 125                         |               |       |           |      |
| Copper          | 0.0466  | 0.00500                    | 0.05    | 0              | 93.2 | 75 - 125                         |               |       |           |      |
| Iron            | 4.715   | 0.200                      | 5       | 0.1017         | 92.3 | 75 - 125                         |               |       |           |      |
| Lead            | 0.0488  | 0.00500                    | 0.05    | 0              | 97.6 | 75 - 125                         |               |       |           |      |
| Magnesium       | 14.33   | 0.200                      | 5       | 9.737          | 91.9 | 75 - 125                         |               |       |           |      |
| Manganese       | 0.04983 | 0.00500                    | 0.05    | 0.005316       | 89.0 | 75 - 125                         |               |       |           |      |
| Molybdenum      | 0.05093 | 0.00500                    | 0.05    | 0.00245        | 97.0 | 75 - 125                         |               |       |           |      |
| Nickel          | 0.05217 | 0.00500                    | 0.05    | 0.004967       | 94.4 | 75 - 125                         |               |       |           |      |
| Potassium       | 7.324   | 0.200                      | 5       | 2.575          | 95.0 | 75 - 125                         |               |       |           |      |
| Selenium        | 0.05269 | 0.00500                    | 0.05    | 0              | 105  | 75 - 125                         |               |       |           |      |
| Silver          | 0.04975 | 0.00500                    | 0.05    | 0              | 99.5 | 75 - 125                         |               |       |           |      |
| Sodium          | 66.42   | 0.200                      | 5       | 59.05          | 147  | 75 - 125                         |               |       |           | SO   |
| Uranium         | 0.0925  | 0.00500                    | 0.1     | 0.005351       | 87.1 | 75 - 125                         |               |       |           |      |
| Zinc            | 0.05334 | 0.00500                    | 0.05    | 0.006259       | 94.2 | 75 - 125                         |               |       |           |      |

|                 |        |                            |         |                |      |                                  |               |       |           |      |
|-----------------|--------|----------------------------|---------|----------------|------|----------------------------------|---------------|-------|-----------|------|
| <b>MS</b>       |        | Sample ID: HS14080747-03MS |         | Units: mg/L    |      | Analysis Date: 05-Sep-2014 11:49 |               |       |           |      |
| Client ID: MW-5 |        | Run ID: ICPMS05_240400     |         | SeqNo: 2992592 |      | PrepDate: 26-Aug-2014            |               | DF: 1 |           |      |
| Analyte         | Result | PQL                        | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit | Qual |
| Boron           | 0.323  | 0.0500                     | 0.5     | -0.2086        | 106  | 75 - 125                         |               |       |           |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85499 |         | Instrument: ICPMS05         |         | Method: SW6020 |       |                                  |               |        |           |      |
|-----------------|---------|-----------------------------|---------|----------------|-------|----------------------------------|---------------|--------|-----------|------|
| <b>MSD</b>      |         | Sample ID: HS14080747-03MSD |         | Units: mg/L    |       | Analysis Date: 04-Sep-2014 17:59 |               |        |           |      |
| Client ID: MW-5 |         | Run ID: ICPMS05_240353      |         | SeqNo: 2991948 |       | PrepDate: 26-Aug-2014            |               | DF: 1  |           |      |
| Analyte         | Result  | PQL                         | SPK Val | SPK Ref Value  | %REC  | Control Limit                    | RPD Ref Value | %RPD   | RPD Limit | Qual |
| Aluminum        | 0.1223  | 0.0100                      | 0.05    | 0.1484         | -52.3 | 75 - 125                         | 0.1552        | 23.7   | 20        | SR   |
| Arsenic         | 0.05072 | 0.00500                     | 0.05    | 0.002539       | 96.4  | 75 - 125                         | 0.05289       | 4.19   | 20        |      |
| Barium          | 0.1593  | 0.00500                     | 0.05    | 0.123          | 72.6  | 75 - 125                         | 0.1708        | 6.96   | 20        | S    |
| Cadmium         | 0.04846 | 0.00200                     | 0.05    | -0.000011      | 96.9  | 75 - 125                         | 0.049         | 1.12   | 20        |      |
| Calcium         | 83.01   | 0.500                       | 5       | 79.41          | 72.1  | 75 - 125                         | 82.94         | 0.0883 | 20        | SO   |
| Chromium        | 0.0486  | 0.00500                     | 0.05    | 0.007436       | 82.3  | 75 - 125                         | 0.05206       | 6.89   | 20        |      |
| Cobalt          | 0.04551 | 0.00500                     | 0.05    | 0.000214       | 90.6  | 75 - 125                         | 0.04772       | 4.74   | 20        |      |
| Copper          | 0.04574 | 0.00500                     | 0.05    | 0.000866       | 89.8  | 75 - 125                         | 0.0466        | 1.85   | 20        |      |
| Iron            | 4.429   | 0.200                       | 5       | 0.1017         | 86.5  | 75 - 125                         | 4.715         | 6.27   | 20        |      |
| Lead            | 0.04798 | 0.00500                     | 0.05    | -0.000421      | 96.8  | 75 - 125                         | 0.0488        | 1.71   | 20        |      |
| Magnesium       | 14.11   | 0.200                       | 5       | 9.737          | 87.5  | 75 - 125                         | 14.33         | 1.55   | 20        |      |
| Manganese       | 0.04702 | 0.00500                     | 0.05    | 0.005316       | 83.4  | 75 - 125                         | 0.04983       | 5.79   | 20        |      |
| Molybdenum      | 0.05134 | 0.00500                     | 0.05    | 0.00245        | 97.8  | 75 - 125                         | 0.05093       | 0.802  | 20        |      |
| Nickel          | 0.0497  | 0.00500                     | 0.05    | 0.004967       | 89.5  | 75 - 125                         | 0.05217       | 4.85   | 20        |      |
| Potassium       | 7.389   | 0.200                       | 5       | 2.575          | 96.3  | 75 - 125                         | 7.324         | 0.887  | 20        |      |
| Selenium        | 0.05006 | 0.00500                     | 0.05    | 0.000256       | 99.6  | 75 - 125                         | 0.05269       | 5.12   | 20        |      |
| Silver          | 0.04923 | 0.00500                     | 0.05    | 0.000042       | 98.4  | 75 - 125                         | 0.04975       | 1.05   | 20        |      |
| Sodium          | 63.07   | 0.200                       | 5       | 59.05          | 80.3  | 75 - 125                         | 66.42         | 5.17   | 20        | O    |
| Uranium         | 0.09312 | 0.00500                     | 0.1     | 0.005351       | 87.8  | 75 - 125                         | 0.0925        | 0.667  | 20        |      |
| Zinc            | 0.05263 | 0.00500                     | 0.05    | 0.006259       | 92.8  | 75 - 125                         | 0.05334       | 1.33   | 20        |      |

| <b>MSD</b>      |        | Sample ID: HS14080747-03MSD |         | Units: mg/L    |      | Analysis Date: 05-Sep-2014 11:51 |               |       |           |      |
|-----------------|--------|-----------------------------|---------|----------------|------|----------------------------------|---------------|-------|-----------|------|
| Client ID: MW-5 |        | Run ID: ICPMS05_240400      |         | SeqNo: 2992593 |      | PrepDate: 26-Aug-2014            |               | DF: 1 |           |      |
| Analyte         | Result | PQL                         | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit | Qual |
| Boron           | 0.3273 | 0.0500                      | 0.5     | -0.2086        | 107  | 75 - 125                         | 0.323         | 1.33  | 20        |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85499 |                             | Instrument: ICPMS05 |         | Method: SW6020                   |                                                 |
|-----------------|-----------------------------|---------------------|---------|----------------------------------|-------------------------------------------------|
| <b>DUP</b>      | Sample ID: HS14080747-03DUP | Units: mg/L         |         | Analysis Date: 04-Sep-2014 17:51 |                                                 |
| Client ID: MW-5 | Run ID: ICPMS05_240353      | SeqNo: 2991945      |         | PrepDate: 26-Aug-2014            | DF: 1                                           |
| Analyte         | Result                      | PQL                 | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Aluminum        | 0.15                        | 0.0100              |         |                                  | 0.1484 1.06 20                                  |
| Arsenic         | ND                          | 0.00500             |         |                                  | 0.002539 0 20                                   |
| Barium          | 0.1183                      | 0.00500             |         |                                  | 0.123 3.86 20                                   |
| Cadmium         | ND                          | 0.00200             |         |                                  | -0.000011 0 20                                  |
| Calcium         | 80.31                       | 0.500               |         |                                  | 79.41 1.13 20                                   |
| Chromium        | 0.007891                    | 0.00500             |         |                                  | 0.007436 5.94 20                                |
| Cobalt          | ND                          | 0.00500             |         |                                  | 0.000214 0 20                                   |
| Copper          | ND                          | 0.00500             |         |                                  | 0.000866 0 20                                   |
| Iron            | ND                          | 0.200               |         |                                  | 0.1017 0 20                                     |
| Lead            | ND                          | 0.00500             |         |                                  | -0.000421 0 20                                  |
| Magnesium       | 9.47                        | 0.200               |         |                                  | 9.737 2.77 20                                   |
| Manganese       | 0.005067                    | 0.00500             |         |                                  | 0.005316 4.8 20                                 |
| Molybdenum      | ND                          | 0.00500             |         |                                  | 0.00245 0 20                                    |
| Nickel          | 0.006072                    | 0.00500             |         |                                  | 0.004967 20 20 R                                |
| Potassium       | 2.587                       | 0.200               |         |                                  | 2.575 0.453 20                                  |
| Selenium        | ND                          | 0.00500             |         |                                  | 0.000256 0 20                                   |
| Silver          | ND                          | 0.00500             |         |                                  | 0.000042 0 20                                   |
| Sodium          | 59.18                       | 0.200               |         |                                  | 59.05 0.21 20                                   |
| Uranium         | 0.005287                    | 0.00500             |         |                                  | 0.005351 1.2 20                                 |
| Zinc            | 0.00663                     | 0.00500             |         |                                  | 0.006259 5.76 20                                |
| <b>DUP</b>      | Sample ID: HS14080747-03DUP | Units: mg/L         |         | Analysis Date: 05-Sep-2014 11:38 |                                                 |
| Client ID: MW-5 | Run ID: ICPMS05_240400      | SeqNo: 2992588      |         | PrepDate: 26-Aug-2014            | DF: 1                                           |
| Analyte         | Result                      | PQL                 | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Boron           | ND                          | 0.0500              |         |                                  | -0.2086 0 20                                    |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85499 |         | Instrument: ICPMS05        |         | Method: SW6020 |      |                                  |               |       |                |
|-----------------|---------|----------------------------|---------|----------------|------|----------------------------------|---------------|-------|----------------|
| PDS             |         | Sample ID: HS14080747-03BS |         | Units: mg/L    |      | Analysis Date: 04-Sep-2014 18:01 |               |       |                |
| Client ID: MW-5 |         | Run ID: ICPMS05_240353     |         | SeqNo: 2991949 |      | PrepDate: 26-Aug-2014            |               | DF: 1 |                |
| Analyte         | Result  | PQL                        | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit Qual |
| Aluminum        | 0.2323  | 0.0100                     | 0.1     | 0.1484         | 83.9 | 75 - 125                         |               |       |                |
| Arsenic         | 0.09112 | 0.00500                    | 0.1     | 0.002539       | 88.6 | 75 - 125                         |               |       |                |
| Barium          | 0.1995  | 0.00500                    | 0.1     | 0.123          | 76.5 | 75 - 125                         |               |       |                |
| Cadmium         | 0.0884  | 0.00200                    | 0.1     | -0.000011      | 88.4 | 75 - 125                         |               |       |                |
| Calcium         | 82.73   | 0.500                      | 10      | 79.41          | 33.2 | 75 - 125                         |               |       | SO             |
| Chromium        | 0.09452 | 0.00500                    | 0.1     | 0.007436       | 87.1 | 75 - 125                         |               |       |                |
| Cobalt          | 0.08523 | 0.00500                    | 0.1     | 0.000214       | 85.0 | 75 - 125                         |               |       |                |
| Copper          | 0.08563 | 0.00500                    | 0.1     | 0.000866       | 84.8 | 75 - 125                         |               |       |                |
| Iron            | 8.426   | 0.200                      | 10      | 0.1017         | 83.2 | 75 - 125                         |               |       |                |
| Lead            | 0.08714 | 0.00500                    | 0.1     | -0.000421      | 87.6 | 75 - 125                         |               |       |                |
| Magnesium       | 17.1    | 0.200                      | 10      | 9.737          | 73.6 | 75 - 125                         |               |       | S              |
| Manganese       | 0.09099 | 0.00500                    | 0.1     | 0.005316       | 85.7 | 75 - 125                         |               |       |                |
| Molybdenum      | 0.0883  | 0.00500                    | 0.1     | 0.00245        | 85.9 | 75 - 125                         |               |       |                |
| Nickel          | 0.09141 | 0.00500                    | 0.1     | 0.004967       | 86.4 | 75 - 125                         |               |       |                |
| Potassium       | 10.99   | 0.200                      | 10      | 2.575          | 84.1 | 75 - 125                         |               |       |                |
| Selenium        | 0.09247 | 0.00500                    | 0.1     | 0.000256       | 92.2 | 75 - 125                         |               |       |                |
| Silver          | 0.08857 | 0.00500                    | 0.1     | 0.000042       | 88.5 | 75 - 125                         |               |       |                |
| Sodium          | 64.69   | 0.200                      | 10      | 59.05          | 56.4 | 75 - 125                         |               |       | SO             |
| Uranium         | 0.09816 | 0.00500                    | 0.1     | 0.005351       | 92.8 | 75 - 125                         |               |       |                |
| Zinc            | 0.0946  | 0.00500                    | 0.1     | 0.006259       | 88.3 | 75 - 125                         |               |       |                |
| PDS             |         | Sample ID: HS14080747-03BS |         | Units: mg/L    |      | Analysis Date: 05-Sep-2014 11:54 |               |       |                |
| Client ID: MW-5 |         | Run ID: ICPMS05_240400     |         | SeqNo: 2992594 |      | PrepDate: 26-Aug-2014            |               | DF: 1 |                |
| Analyte         | Result  | PQL                        | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit Qual |
| Boron           | 0.8011  | 0.0500                     | 1       | 0              | 80.1 | 75 - 125                         |               |       |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85499                                                  |                                        | Instrument: ICPMS05   |         | Method: SW6020                          |                                                 |
|------------------------------------------------------------------|----------------------------------------|-----------------------|---------|-----------------------------------------|-------------------------------------------------|
| <b>SD</b>                                                        | Sample ID: <b>HS14080747-03 DIL SX</b> | Units: <b>mg/L</b>    |         | Analysis Date: <b>04-Sep-2014 17:54</b> |                                                 |
| Client ID: <b>MW-5</b>                                           | Run ID: <b>ICPMS05_240353</b>          | SeqNo: <b>2991946</b> |         | PrepDate: <b>26-Aug-2014</b>            | DF: <b>5</b>                                    |
| Analyte                                                          | Result                                 | PQL                   | SPK Val | SPK Ref Value %REC                      | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Aluminum                                                         | 0.1687                                 | 0.0500                |         |                                         | 0.1484 13.6 10 R                                |
| Arsenic                                                          | ND                                     | 0.0250                |         |                                         | 0.002539 0 10                                   |
| Barium                                                           | 0.119                                  | 0.0250                |         |                                         | 0.123 3.28 10                                   |
| Cadmium                                                          | ND                                     | 0.0100                |         |                                         | -0.000011 0 10                                  |
| Calcium                                                          | 79.71                                  | 2.50                  |         |                                         | 79.41 0.381 10                                  |
| Chromium                                                         | 0.006407                               | 0.0250                |         |                                         | 0.007436 0 10 J                                 |
| Cobalt                                                           | ND                                     | 0.0250                |         |                                         | 0.000214 0 10                                   |
| Copper                                                           | ND                                     | 0.0250                |         |                                         | 0.000866 0 10                                   |
| Iron                                                             | ND                                     | 1.00                  |         |                                         | 0.1017 0 10                                     |
| Lead                                                             | ND                                     | 0.0250                |         |                                         | -0.000421 0 10                                  |
| Magnesium                                                        | 9.818                                  | 1.00                  |         |                                         | 9.737 0.833 10                                  |
| Manganese                                                        | ND                                     | 0.0250                |         |                                         | 0.005316 0 10                                   |
| Molybdenum                                                       | ND                                     | 0.0250                |         |                                         | 0.00245 0 10                                    |
| Nickel                                                           | ND                                     | 0.0250                |         |                                         | 0.004967 0 10                                   |
| Potassium                                                        | 2.734                                  | 1.00                  |         |                                         | 2.575 6.17 10                                   |
| Selenium                                                         | ND                                     | 0.0250                |         |                                         | 0.000256 0 10                                   |
| Silver                                                           | ND                                     | 0.0250                |         |                                         | 0.000042 0 10                                   |
| Sodium                                                           | 59.95                                  | 1.00                  |         |                                         | 59.05 1.52 10                                   |
| Uranium                                                          | ND                                     | 0.0250                |         |                                         | 0.005351 0 10                                   |
| Zinc                                                             | ND                                     | 0.0250                |         |                                         | 0.006259 0 10                                   |
| <b>SD</b>                                                        | Sample ID: <b>HS14080747-03 DIL SX</b> | Units: <b>mg/L</b>    |         | Analysis Date: <b>05-Sep-2014 11:46</b> |                                                 |
| Client ID: <b>MW-5</b>                                           | Run ID: <b>ICPMS05_240400</b>          | SeqNo: <b>2992591</b> |         | PrepDate: <b>26-Aug-2014</b>            | DF: <b>5</b>                                    |
| Analyte                                                          | Result                                 | PQL                   | SPK Val | SPK Ref Value %REC                      | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Boron                                                            | ND                                     | 0.250                 |         |                                         | -0.2086 0 10                                    |
| The following samples were analyzed in this batch: HS14080747-03 |                                        |                       |         |                                         |                                                 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85377             |        |                       | Instrument: SV-4 |                | Method: SW8270 |                                  |               |       |           |      |
|-----------------------------|--------|-----------------------|------------------|----------------|----------------|----------------------------------|---------------|-------|-----------|------|
| MBLK                        |        | Sample ID: MBLK-85377 |                  | Units: ug/L    |                | Analysis Date: 25-Aug-2014 14:04 |               |       |           |      |
| Client ID:                  |        | Run ID: SV-4_240358   |                  | SeqNo: 2991729 |                | PrepDate: 22-Aug-2014            |               | DF: 1 |           |      |
| Analyte                     | Result | PQL                   | SPK Val          | SPK Ref Value  | %REC           | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit | Qual |
| 1,1'-Biphenyl               | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| 1-Methylnaphthalene         | ND     | 0.10                  |                  |                |                |                                  |               |       |           |      |
| 2,4,5-Trichlorophenol       | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| 2,4,6-Trichlorophenol       | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| 2,4-Dichlorophenol          | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| 2,4-Dimethylphenol          | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| 2,4-Dinitrophenol           | ND     | 1.0                   |                  |                |                |                                  |               |       |           |      |
| 2,4-Dinitrotoluene          | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| 2,6-Dinitrotoluene          | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| 2-Chloronaphthalene         | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| 2-Chlorophenol              | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| 2-Methylnaphthalene         | ND     | 0.10                  |                  |                |                |                                  |               |       |           |      |
| 2-Methylphenol              | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| 2-Nitroaniline              | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| 2-Nitrophenol               | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| 3&4-Methylphenol            | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| 3,3'-Dichlorobenzidine      | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| 3-Nitroaniline              | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| 4,6-Dinitro-2-methylphenol  | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| 4-Bromophenyl phenyl ether  | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| 4-Chloro-3-methylphenol     | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| 4-Chloroaniline             | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| 4-Chlorophenyl phenyl ether | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| 4-Nitroaniline              | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| 4-Nitrophenol               | ND     | 1.0                   |                  |                |                |                                  |               |       |           |      |
| Acenaphthene                | ND     | 0.10                  |                  |                |                |                                  |               |       |           |      |
| Acenaphthylene              | ND     | 0.10                  |                  |                |                |                                  |               |       |           |      |
| Acetophenone                | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| Anthracene                  | ND     | 0.10                  |                  |                |                |                                  |               |       |           |      |
| Atrazine                    | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| Benz(a)anthracene           | ND     | 0.10                  |                  |                |                |                                  |               |       |           |      |
| Benzaldehyde                | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| Benzo(a)pyrene              | ND     | 0.10                  |                  |                |                |                                  |               |       |           |      |
| Benzo(b)fluoranthene        | ND     | 0.10                  |                  |                |                |                                  |               |       |           |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85377             |        |                       | Instrument: SV-4 |                | Method: SW8270 |                                  |               |       |           |      |
|-----------------------------|--------|-----------------------|------------------|----------------|----------------|----------------------------------|---------------|-------|-----------|------|
| MBLK                        |        | Sample ID: MBLK-85377 |                  | Units: ug/L    |                | Analysis Date: 25-Aug-2014 14:04 |               |       |           |      |
| Client ID:                  |        | Run ID: SV-4_240358   |                  | SeqNo: 2991729 |                | PrepDate: 22-Aug-2014            |               | DF: 1 |           |      |
| Analyte                     | Result | PQL                   | SPK Val          | SPK Ref Value  | %REC           | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit | Qual |
| Benzo(g,h,i)perylene        | ND     | 0.10                  |                  |                |                |                                  |               |       |           |      |
| Benzo(k)fluoranthene        | ND     | 0.10                  |                  |                |                |                                  |               |       |           |      |
| Bis(2-chloroethoxy)methane  | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| Bis(2-chloroethyl)ether     | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| Bis(2-chloroisopropyl)ether | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| Bis(2-ethylhexyl)phthalate  | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| Butyl benzyl phthalate      | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| Caprolactam                 | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| Carbazole                   | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| Chrysene                    | ND     | 0.10                  |                  |                |                |                                  |               |       |           |      |
| Dibenz(a,h)anthracene       | ND     | 0.10                  |                  |                |                |                                  |               |       |           |      |
| Dibenzofuran                | ND     | 0.10                  |                  |                |                |                                  |               |       |           |      |
| Diethyl phthalate           | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| Dimethyl phthalate          | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| Di-n-butyl phthalate        | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| Di-n-octyl phthalate        | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| Fluoranthene                | ND     | 0.10                  |                  |                |                |                                  |               |       |           |      |
| Fluorene                    | ND     | 0.10                  |                  |                |                |                                  |               |       |           |      |
| Hexachlorobenzene           | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| Hexachlorobutadiene         | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| Hexachlorocyclopentadiene   | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| Hexachloroethane            | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| Indeno(1,2,3-cd)pyrene      | ND     | 0.10                  |                  |                |                |                                  |               |       |           |      |
| Isophorone                  | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| Naphthalene                 | ND     | 0.10                  |                  |                |                |                                  |               |       |           |      |
| Nitrobenzene                | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| N-Nitrosodi-n-propylamine   | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| N-Nitrosodiphenylamine      | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| Pentachlorophenol           | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| Phenanthrene                | ND     | 0.10                  |                  |                |                |                                  |               |       |           |      |
| Phenol                      | ND     | 0.20                  |                  |                |                |                                  |               |       |           |      |
| Pyrene                      | ND     | 0.10                  |                  |                |                |                                  |               |       |           |      |
| Surr: 2,4,6-Tribromophenol  | 4.081  | 0.20                  | 5                | 0              | 81.6           | 34 - 129                         |               |       |           |      |
| Surr: 2-Fluorobiphenyl      | 3.838  | 0.20                  | 5                | 0              | 76.8           | 40 - 125                         |               |       |           |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
WorkOrder: HS14080747  
Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85377       |                       | Instrument: SV-4 |                | Method: SW8270 |                                  |               |               |      |                |  |
|-----------------------|-----------------------|------------------|----------------|----------------|----------------------------------|---------------|---------------|------|----------------|--|
| MBLK                  | Sample ID: MBLK-85377 | Units: ug/L      |                |                | Analysis Date: 25-Aug-2014 14:04 |               |               |      |                |  |
| Client ID:            | Run ID: SV-4_240358   |                  | SeqNo: 2991729 |                | PrepDate: 22-Aug-2014            |               | DF: 1         |      |                |  |
| Analyte               | Result                | PQL              | SPK Val        | SPK Ref Value  | %REC                             | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |  |
| Surr: 2-Fluorophenol  | 3.462                 | 0.20             | 5              | 0              | 69.2                             | 20 - 120      |               |      |                |  |
| Surr: 4-Terphenyl-d14 | 4.011                 | 0.20             | 5              | 0              | 80.2                             | 40 - 135      |               |      |                |  |
| Surr: Nitrobenzene-d5 | 3.897                 | 0.20             | 5              | 0              | 77.9                             | 41 - 120      |               |      |                |  |
| Surr: Phenol-d6       | 3.596                 | 0.20             | 5              | 0              | 71.9                             | 20 - 120      |               |      |                |  |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85377             |        | Instrument: SV-4     |         | Method: SW8270 |      |                                  |               |       |                |
|-----------------------------|--------|----------------------|---------|----------------|------|----------------------------------|---------------|-------|----------------|
| LCS                         |        | Sample ID: LCS-85377 |         | Units: ug/L    |      | Analysis Date: 22-Aug-2014 13:50 |               |       |                |
| Client ID:                  |        | Run ID: SV-4_240358  |         | SeqNo: 2991717 |      | PrepDate: 22-Aug-2014            |               | DF: 1 |                |
| Analyte                     | Result | PQL                  | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit Qual |
| 1,1'-Biphenyl               | 3.762  | 0.20                 | 5       | 0              | 75.2 | 45 - 125                         |               |       |                |
| 1-Methylnaphthalene         | 3.402  | 0.10                 | 5       | 0              | 68.0 | 45 - 120                         |               |       |                |
| 2,4,5-Trichlorophenol       | 3.924  | 0.20                 | 5       | 0              | 78.5 | 46 - 120                         |               |       |                |
| 2,4,6-Trichlorophenol       | 3.861  | 0.20                 | 5       | 0              | 77.2 | 42 - 120                         |               |       |                |
| 2,4-Dichlorophenol          | 3.717  | 0.20                 | 5       | 0              | 74.3 | 49 - 120                         |               |       |                |
| 2,4-Dimethylphenol          | 3.425  | 0.20                 | 5       | 0              | 68.5 | 35 - 120                         |               |       |                |
| 2,4-Dinitrophenol           | 3.619  | 1.0                  | 5       | 0              | 72.4 | 15 - 120                         |               |       |                |
| 2,4-Dinitrotoluene          | 3.921  | 0.20                 | 5       | 0              | 78.4 | 50 - 122                         |               |       |                |
| 2,6-Dinitrotoluene          | 4.183  | 0.20                 | 5       | 0              | 83.7 | 50 - 120                         |               |       |                |
| 2-Chloronaphthalene         | 4.093  | 0.20                 | 5       | 0              | 81.9 | 50 - 120                         |               |       |                |
| 2-Chlorophenol              | 3.597  | 0.20                 | 5       | 0              | 71.9 | 40 - 120                         |               |       |                |
| 2-Methylnaphthalene         | 3.493  | 0.10                 | 5       | 0              | 69.9 | 50 - 120                         |               |       |                |
| 2-Methylphenol              | 3.588  | 0.20                 | 5       | 0              | 71.8 | 45 - 120                         |               |       |                |
| 2-Nitroaniline              | 4.985  | 0.20                 | 5       | 0              | 99.7 | 28 - 139                         |               |       |                |
| 2-Nitrophenol               | 4.284  | 0.20                 | 5       | 0              | 85.7 | 40 - 120                         |               |       |                |
| 3&4-Methylphenol            | 3.619  | 0.20                 | 5       | 0              | 72.4 | 35 - 120                         |               |       |                |
| 3,3'-Dichlorobenzidine      | 4.284  | 0.20                 | 5       | 0              | 85.7 | 15 - 120                         |               |       |                |
| 3-Nitroaniline              | 4.113  | 0.20                 | 5       | 0              | 82.3 | 30 - 120                         |               |       |                |
| 4,6-Dinitro-2-methylphenol  | 4.175  | 0.20                 | 5       | 0              | 83.5 | 25 - 121                         |               |       |                |
| 4-Bromophenyl phenyl ether  | 3.858  | 0.20                 | 5       | 0              | 77.2 | 45 - 120                         |               |       |                |
| 4-Chloro-3-methylphenol     | 3.965  | 0.20                 | 5       | 0              | 79.3 | 47 - 120                         |               |       |                |
| 4-Chloroaniline             | 2.805  | 0.20                 | 5       | 0              | 56.1 | 20 - 120                         |               |       |                |
| 4-Chlorophenyl phenyl ether | 3.824  | 0.20                 | 5       | 0              | 76.5 | 50 - 120                         |               |       |                |
| 4-Nitroaniline              | 3.185  | 0.20                 | 5       | 0              | 63.7 | 30 - 133                         |               |       |                |
| 4-Nitrophenol               | 4.122  | 1.0                  | 5       | 0              | 82.4 | 30 - 130                         |               |       |                |
| Acenaphthene                | 3.531  | 0.10                 | 5       | 0              | 70.6 | 45 - 120                         |               |       |                |
| Acenaphthylene              | 3.736  | 0.10                 | 5       | 0              | 74.7 | 47 - 120                         |               |       |                |
| Acetophenone                | 3.377  | 0.20                 | 5       | 0              | 67.5 | 40 - 120                         |               |       |                |
| Anthracene                  | 3.894  | 0.10                 | 5       | 0              | 77.9 | 45 - 120                         |               |       |                |
| Atrazine                    | 3.369  | 0.20                 | 5       | 0              | 67.4 | 40 - 130                         |               |       |                |
| Benz(a)anthracene           | 3.849  | 0.10                 | 5       | 0              | 77.0 | 40 - 120                         |               |       |                |
| Benzaldehyde                | 1.058  | 0.20                 | 5       | 0              | 21.2 | 15 - 120                         |               |       |                |
| Benzo(a)pyrene              | 3.657  | 0.10                 | 5       | 0              | 73.1 | 45 - 120                         |               |       |                |
| Benzo(b)fluoranthene        | 3.692  | 0.10                 | 5       | 0              | 73.8 | 50 - 120                         |               |       |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85377             |        | Instrument: SV-4     |         | Method: SW8270 |      |                                  |               |       |                |
|-----------------------------|--------|----------------------|---------|----------------|------|----------------------------------|---------------|-------|----------------|
| LCS                         |        | Sample ID: LCS-85377 |         | Units: ug/L    |      | Analysis Date: 22-Aug-2014 13:50 |               |       |                |
| Client ID:                  |        | Run ID: SV-4_240358  |         | SeqNo: 2991717 |      | PrepDate: 22-Aug-2014            |               | DF: 1 |                |
| Analyte                     | Result | PQL                  | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit Qual |
| Benzo(g,h,i)perylene        | 3.87   | 0.10                 | 5       | 0              | 77.4 | 42 - 127                         |               |       |                |
| Benzo(k)fluoranthene        | 3.372  | 0.10                 | 5       | 0              | 67.4 | 45 - 127                         |               |       |                |
| Bis(2-chloroethoxy)methane  | 3.587  | 0.20                 | 5       | 0              | 71.7 | 45 - 120                         |               |       |                |
| Bis(2-chloroethyl)ether     | 3.466  | 0.20                 | 5       | 0              | 69.3 | 37 - 121                         |               |       |                |
| Bis(2-chloroisopropyl)ether | 3.394  | 0.20                 | 5       | 0              | 67.9 | 40 - 120                         |               |       |                |
| Bis(2-ethylhexyl)phthalate  | 3.837  | 0.20                 | 5       | 0              | 76.7 | 40 - 139                         |               |       |                |
| Butyl benzyl phthalate      | 3.617  | 0.20                 | 5       | 0              | 72.3 | 47 - 123                         |               |       |                |
| Caprolactam                 | 3.688  | 0.20                 | 5       | 0              | 73.8 | 35 - 134                         |               |       |                |
| Carbazole                   | 3.219  | 0.20                 | 5       | 0              | 64.4 | 42 - 128                         |               |       |                |
| Chrysene                    | 3.828  | 0.10                 | 5       | 0              | 76.6 | 43 - 120                         |               |       |                |
| Dibenz(a,h)anthracene       | 4.031  | 0.10                 | 5       | 0              | 80.6 | 45 - 125                         |               |       |                |
| Dibenzofuran                | 3.778  | 0.10                 | 5       | 0              | 75.6 | 50 - 120                         |               |       |                |
| Diethyl phthalate           | 3.495  | 0.20                 | 5       | 0              | 69.9 | 41 - 120                         |               |       |                |
| Dimethyl phthalate          | 3.708  | 0.20                 | 5       | 0              | 74.2 | 40 - 122                         |               |       |                |
| Di-n-butyl phthalate        | 3.907  | 0.20                 | 5       | 0              | 78.1 | 45 - 123                         |               |       |                |
| Di-n-octyl phthalate        | 3.594  | 0.20                 | 5       | 0              | 71.9 | 45 - 129                         |               |       |                |
| Fluoranthene                | 4.056  | 0.10                 | 5       | 0              | 81.1 | 45 - 125                         |               |       |                |
| Fluorene                    | 3.834  | 0.10                 | 5       | 0              | 76.7 | 49 - 120                         |               |       |                |
| Hexachlorobenzene           | 3.837  | 0.20                 | 5       | 0              | 76.7 | 48 - 120                         |               |       |                |
| Hexachlorobutadiene         | 3.896  | 0.20                 | 5       | 0              | 77.9 | 40 - 120                         |               |       |                |
| Hexachlorocyclopentadiene   | 3.633  | 0.20                 | 5       | 0              | 72.7 | 34 - 136                         |               |       |                |
| Hexachloroethane            | 3.48   | 0.20                 | 5       | 0              | 69.6 | 40 - 120                         |               |       |                |
| Indeno(1,2,3-cd)pyrene      | 4.165  | 0.10                 | 5       | 0              | 83.3 | 41 - 128                         |               |       |                |
| Isophorone                  | 3.748  | 0.20                 | 5       | 0              | 75.0 | 40 - 121                         |               |       |                |
| Naphthalene                 | 3.681  | 0.10                 | 5       | 0              | 73.6 | 45 - 120                         |               |       |                |
| Nitrobenzene                | 3.662  | 0.20                 | 5       | 0              | 73.2 | 44 - 120                         |               |       |                |
| N-Nitrosodi-n-propylamine   | 3.742  | 0.20                 | 5       | 0              | 74.8 | 40 - 120                         |               |       |                |
| N-Nitrosodiphenylamine      | 3.648  | 0.20                 | 5       | 0              | 73.0 | 40 - 125                         |               |       |                |
| Pentachlorophenol           | 4.259  | 0.20                 | 5       | 0              | 85.2 | 19 - 121                         |               |       |                |
| Phenanthrene                | 3.936  | 0.10                 | 5       | 0              | 78.7 | 45 - 121                         |               |       |                |
| Phenol                      | 3.543  | 0.20                 | 5       | 0              | 70.9 | 20 - 124                         |               |       |                |
| Pyrene                      | 3.739  | 0.10                 | 5       | 0              | 74.8 | 40 - 130                         |               |       |                |
| Surr: 2,4,6-Tribromophenol  | 4.416  | 0.20                 | 5       | 0              | 88.3 | 34 - 129                         |               |       |                |
| Surr: 2-Fluorobiphenyl      | 3.939  | 0.20                 | 5       | 0              | 78.8 | 40 - 125                         |               |       |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
WorkOrder: HS14080747  
Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85377       |                      | Instrument: SV-4 |                | Method: SW8270                   |                                                 |
|-----------------------|----------------------|------------------|----------------|----------------------------------|-------------------------------------------------|
| LCS                   | Sample ID: LCS-85377 | Units: ug/L      |                | Analysis Date: 22-Aug-2014 13:50 |                                                 |
| Client ID:            | Run ID: SV-4_240358  |                  | SeqNo: 2991717 | PrepDate: 22-Aug-2014            | DF: 1                                           |
| Analyte               | Result               | PQL              | SPK Val        | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Surr: 2-Fluorophenol  | 3.772                | 0.20             | 5              | 0 75.4                           | 20 - 120                                        |
| Surr: 4-Terphenyl-d14 | 4.02                 | 0.20             | 5              | 0 80.4                           | 40 - 135                                        |
| Surr: Nitrobenzene-d5 | 3.958                | 0.20             | 5              | 0 79.2                           | 41 - 120                                        |
| Surr: Phenol-d6       | 3.793                | 0.20             | 5              | 0 75.9                           | 20 - 120                                        |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85377             |        | Instrument: SV-4      |         | Method: SW8270 |      |                                  |               |       |           |      |
|-----------------------------|--------|-----------------------|---------|----------------|------|----------------------------------|---------------|-------|-----------|------|
| LCSD                        |        | Sample ID: LCSD-85377 |         | Units: ug/L    |      | Analysis Date: 22-Aug-2014 14:10 |               |       |           |      |
| Client ID:                  |        | Run ID: SV-4_240358   |         | SeqNo: 2991718 |      | PrepDate: 22-Aug-2014            |               | DF: 1 |           |      |
| Analyte                     | Result | PQL                   | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit | Qual |
| 1,1'-Biphenyl               | 3.584  | 0.20                  | 5       | 0              | 71.7 | 45 - 125                         | 3.762         | 4.84  | 20        |      |
| 1-Methylnaphthalene         | 3.494  | 0.10                  | 5       | 0              | 69.9 | 45 - 120                         | 3.402         | 2.69  | 20        |      |
| 2,4,5-Trichlorophenol       | 3.902  | 0.20                  | 5       | 0              | 78.0 | 46 - 120                         | 3.924         | 0.541 | 20        |      |
| 2,4,6-Trichlorophenol       | 4.015  | 0.20                  | 5       | 0              | 80.3 | 42 - 120                         | 3.861         | 3.92  | 20        |      |
| 2,4-Dichlorophenol          | 3.699  | 0.20                  | 5       | 0              | 74.0 | 49 - 120                         | 3.717         | 0.492 | 20        |      |
| 2,4-Dimethylphenol          | 3.502  | 0.20                  | 5       | 0              | 70.0 | 35 - 120                         | 3.425         | 2.21  | 20        |      |
| 2,4-Dinitrophenol           | 3.753  | 1.0                   | 5       | 0              | 75.1 | 15 - 120                         | 3.619         | 3.65  | 50        |      |
| 2,4-Dinitrotoluene          | 4.101  | 0.20                  | 5       | 0              | 82.0 | 50 - 122                         | 3.921         | 4.5   | 20        |      |
| 2,6-Dinitrotoluene          | 4.133  | 0.20                  | 5       | 0              | 82.7 | 50 - 120                         | 4.183         | 1.22  | 20        |      |
| 2-Chloronaphthalene         | 3.965  | 0.20                  | 5       | 0              | 79.3 | 50 - 120                         | 4.093         | 3.17  | 20        |      |
| 2-Chlorophenol              | 3.496  | 0.20                  | 5       | 0              | 69.9 | 40 - 120                         | 3.597         | 2.86  | 20        |      |
| 2-Methylnaphthalene         | 3.593  | 0.10                  | 5       | 0              | 71.9 | 50 - 120                         | 3.493         | 2.84  | 20        |      |
| 2-Methylphenol              | 3.426  | 0.20                  | 5       | 0              | 68.5 | 45 - 120                         | 3.588         | 4.64  | 20        |      |
| 2-Nitroaniline              | 4.889  | 0.20                  | 5       | 0              | 97.8 | 28 - 139                         | 4.985         | 1.93  | 20        |      |
| 2-Nitrophenol               | 4.5    | 0.20                  | 5       | 0              | 90.0 | 40 - 120                         | 4.284         | 4.92  | 20        |      |
| 3&4-Methylphenol            | 3.435  | 0.20                  | 5       | 0              | 68.7 | 35 - 120                         | 3.619         | 5.21  | 20        |      |
| 3,3'-Dichlorobenzidine      | 4.502  | 0.20                  | 5       | 0              | 90.0 | 15 - 120                         | 4.284         | 4.96  | 20        |      |
| 3-Nitroaniline              | 3.584  | 0.20                  | 5       | 0              | 71.7 | 30 - 120                         | 4.113         | 13.7  | 20        |      |
| 4,6-Dinitro-2-methylphenol  | 4.067  | 0.20                  | 5       | 0              | 81.3 | 25 - 121                         | 4.175         | 2.62  | 30        |      |
| 4-Bromophenyl phenyl ether  | 3.598  | 0.20                  | 5       | 0              | 72.0 | 45 - 120                         | 3.858         | 6.96  | 20        |      |
| 4-Chloro-3-methylphenol     | 4.057  | 0.20                  | 5       | 0              | 81.1 | 47 - 120                         | 3.965         | 2.31  | 20        |      |
| 4-Chloroaniline             | 2.773  | 0.20                  | 5       | 0              | 55.5 | 20 - 120                         | 2.805         | 1.15  | 20        |      |
| 4-Chlorophenyl phenyl ether | 3.602  | 0.20                  | 5       | 0              | 72.0 | 50 - 120                         | 3.824         | 5.99  | 20        |      |
| 4-Nitroaniline              | 3.165  | 0.20                  | 5       | 0              | 63.3 | 30 - 133                         | 3.185         | 0.631 | 20        |      |
| 4-Nitrophenol               | 4.311  | 1.0                   | 5       | 0              | 86.2 | 30 - 130                         | 4.122         | 4.49  | 20        |      |
| Acenaphthene                | 3.431  | 0.10                  | 5       | 0              | 68.6 | 45 - 120                         | 3.531         | 2.85  | 20        |      |
| Acenaphthylene              | 3.689  | 0.10                  | 5       | 0              | 73.8 | 47 - 120                         | 3.736         | 1.24  | 20        |      |
| Acetophenone                | 3.431  | 0.20                  | 5       | 0              | 68.6 | 40 - 120                         | 3.377         | 1.58  | 20        |      |
| Anthracene                  | 3.754  | 0.10                  | 5       | 0              | 75.1 | 45 - 120                         | 3.894         | 3.65  | 20        |      |
| Atrazine                    | 3.26   | 0.20                  | 5       | 0              | 65.2 | 40 - 130                         | 3.369         | 3.29  | 20        |      |
| Benz(a)anthracene           | 3.94   | 0.10                  | 5       | 0              | 78.8 | 40 - 120                         | 3.849         | 2.33  | 20        |      |
| Benzaldehyde                | 1.108  | 0.20                  | 5       | 0              | 22.2 | 15 - 120                         | 1.058         | 4.69  | 30        |      |
| Benzo(a)pyrene              | 3.679  | 0.10                  | 5       | 0              | 73.6 | 45 - 120                         | 3.657         | 0.599 | 20        |      |
| Benzo(b)fluoranthene        | 4.134  | 0.10                  | 5       | 0              | 82.7 | 50 - 120                         | 3.692         | 11.3  | 20        |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85377             |        | Instrument: SV-4      |         | Method: SW8270 |      |                                  |               |        |           |      |
|-----------------------------|--------|-----------------------|---------|----------------|------|----------------------------------|---------------|--------|-----------|------|
| LCSD                        |        | Sample ID: LCSD-85377 |         | Units: ug/L    |      | Analysis Date: 22-Aug-2014 14:10 |               |        |           |      |
| Client ID:                  |        | Run ID: SV-4_240358   |         | SeqNo: 2991718 |      | PrepDate: 22-Aug-2014            |               | DF: 1  |           |      |
| Analyte                     | Result | PQL                   | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD   | RPD Limit | Qual |
| Benzo(g,h,i)perylene        | 3.915  | 0.10                  | 5       | 0              | 78.3 | 42 - 127                         | 3.87          | 1.15   | 20        |      |
| Benzo(k)fluoranthene        | 3.518  | 0.10                  | 5       | 0              | 70.4 | 45 - 127                         | 3.372         | 4.24   | 20        |      |
| Bis(2-chloroethoxy)methane  | 3.684  | 0.20                  | 5       | 0              | 73.7 | 45 - 120                         | 3.587         | 2.67   | 20        |      |
| Bis(2-chloroethyl)ether     | 3.343  | 0.20                  | 5       | 0              | 66.9 | 37 - 121                         | 3.466         | 3.61   | 20        |      |
| Bis(2-chloroisopropyl)ether | 3.281  | 0.20                  | 5       | 0              | 65.6 | 40 - 120                         | 3.394         | 3.39   | 20        |      |
| Bis(2-ethylhexyl)phthalate  | 3.815  | 0.20                  | 5       | 0              | 76.3 | 40 - 139                         | 3.837         | 0.567  | 20        |      |
| Butyl benzyl phthalate      | 3.616  | 0.20                  | 5       | 0              | 72.3 | 47 - 123                         | 3.617         | 0.0349 | 20        |      |
| Caprolactam                 | 3.819  | 0.20                  | 5       | 0              | 76.4 | 35 - 134                         | 3.688         | 3.51   | 20        |      |
| Carbazole                   | 3.085  | 0.20                  | 5       | 0              | 61.7 | 42 - 128                         | 3.219         | 4.24   | 20        |      |
| Chrysene                    | 3.967  | 0.10                  | 5       | 0              | 79.3 | 43 - 120                         | 3.828         | 3.56   | 20        |      |
| Dibenz(a,h)anthracene       | 4.054  | 0.10                  | 5       | 0              | 81.1 | 45 - 125                         | 4.031         | 0.585  | 20        |      |
| Dibenzofuran                | 3.592  | 0.10                  | 5       | 0              | 71.8 | 50 - 120                         | 3.778         | 5.04   | 20        |      |
| Diethyl phthalate           | 3.362  | 0.20                  | 5       | 0              | 67.2 | 41 - 120                         | 3.495         | 3.87   | 20        |      |
| Dimethyl phthalate          | 3.601  | 0.20                  | 5       | 0              | 72.0 | 40 - 122                         | 3.708         | 2.92   | 20        |      |
| Di-n-butyl phthalate        | 3.756  | 0.20                  | 5       | 0              | 75.1 | 45 - 123                         | 3.907         | 3.94   | 20        |      |
| Di-n-octyl phthalate        | 3.535  | 0.20                  | 5       | 0              | 70.7 | 45 - 129                         | 3.594         | 1.66   | 20        |      |
| Fluoranthene                | 3.901  | 0.10                  | 5       | 0              | 78.0 | 45 - 125                         | 4.056         | 3.9    | 20        |      |
| Fluorene                    | 3.765  | 0.10                  | 5       | 0              | 75.3 | 49 - 120                         | 3.834         | 1.82   | 20        |      |
| Hexachlorobenzene           | 3.664  | 0.20                  | 5       | 0              | 73.3 | 48 - 120                         | 3.837         | 4.62   | 20        |      |
| Hexachlorobutadiene         | 3.939  | 0.20                  | 5       | 0              | 78.8 | 40 - 120                         | 3.896         | 1.12   | 20        |      |
| Hexachlorocyclopentadiene   | 3.702  | 0.20                  | 5       | 0              | 74.0 | 34 - 136                         | 3.633         | 1.87   | 20        |      |
| Hexachloroethane            | 3.398  | 0.20                  | 5       | 0              | 68.0 | 40 - 120                         | 3.48          | 2.38   | 20        |      |
| Indeno(1,2,3-cd)pyrene      | 4.25   | 0.10                  | 5       | 0              | 85.0 | 41 - 128                         | 4.165         | 2.03   | 20        |      |
| Isophorone                  | 3.889  | 0.20                  | 5       | 0              | 77.8 | 40 - 121                         | 3.748         | 3.69   | 20        |      |
| Naphthalene                 | 3.825  | 0.10                  | 5       | 0              | 76.5 | 45 - 120                         | 3.681         | 3.84   | 20        |      |
| Nitrobenzene                | 3.811  | 0.20                  | 5       | 0              | 76.2 | 44 - 120                         | 3.662         | 4      | 20        |      |
| N-Nitrosodi-n-propylamine   | 3.618  | 0.20                  | 5       | 0              | 72.4 | 40 - 120                         | 3.742         | 3.37   | 20        |      |
| N-Nitrosodiphenylamine      | 3.61   | 0.20                  | 5       | 0              | 72.2 | 40 - 125                         | 3.648         | 1.05   | 20        |      |
| Pentachlorophenol           | 4.05   | 0.20                  | 5       | 0              | 81.0 | 19 - 121                         | 4.259         | 5.03   | 20        |      |
| Phenanthrene                | 3.836  | 0.10                  | 5       | 0              | 76.7 | 45 - 121                         | 3.936         | 2.59   | 20        |      |
| Phenol                      | 3.498  | 0.20                  | 5       | 0              | 70.0 | 20 - 124                         | 3.543         | 1.28   | 20        |      |
| Pyrene                      | 3.806  | 0.10                  | 5       | 0              | 76.1 | 40 - 130                         | 3.739         | 1.78   | 20        |      |
| Surr: 2,4,6-Tribromophenol  | 3.957  | 0.20                  | 5       | 0              | 79.1 | 34 - 129                         | 4.416         | 11     |           |      |
| Surr: 2-Fluorobiphenyl      | 3.772  | 0.20                  | 5       | 0              | 75.4 | 40 - 125                         | 3.939         | 4.33   |           |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85377       |  | Instrument: SV-4      |  | Method: SW8270     |  |
|-----------------------|--|-----------------------|--|--------------------|--|
| LCSD                  |  | Sample ID: LCSD-85377 |  | Units: ug/L        |  |
| Client ID:            |  | Run ID: SV-4_240358   |  | SeqNo: 2991718     |  |
| Analyte               |  | Result                |  | SPK Ref Value %REC |  |
|                       |  | PQL                   |  | Control Limit      |  |
|                       |  | SPK Val               |  | RPD Ref Value %RPD |  |
|                       |  |                       |  | RPD Limit Qual     |  |
| Surr: 2-Fluorophenol  |  | 3.5                   |  | 0 70.0 20 - 120    |  |
| Surr: 4-Terphenyl-d14 |  | 3.983                 |  | 0 79.7 40 - 135    |  |
| Surr: Nitrobenzene-d5 |  | 3.947                 |  | 0 78.9 41 - 120    |  |
| Surr: Phenol-d6       |  | 3.617                 |  | 0 72.3 20 - 120    |  |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85377             |        | Instrument: SV-4           |         | Method: SW8270 |      |                                  |               |       |                |
|-----------------------------|--------|----------------------------|---------|----------------|------|----------------------------------|---------------|-------|----------------|
| MS                          |        | Sample ID: HS14080747-03MS |         | Units: ug/L    |      | Analysis Date: 22-Aug-2014 14:51 |               |       |                |
| Client ID: MW-5             |        | Run ID: SV-4_240358        |         | SeqNo: 2991719 |      | PrepDate: 22-Aug-2014            |               | DF: 1 |                |
| Analyte                     | Result | PQL                        | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit Qual |
| 1,1'-Biphenyl               | 3.398  | 0.20                       | 5       | 0              | 68.0 | 45 - 125                         |               |       |                |
| 1-Methylnaphthalene         | 3.477  | 0.10                       | 5       | 0              | 69.5 | 45 - 120                         |               |       |                |
| 2,4,5-Trichlorophenol       | 3.913  | 0.20                       | 5       | 0              | 78.3 | 46 - 120                         |               |       |                |
| 2,4,6-Trichlorophenol       | 3.8    | 0.20                       | 5       | 0              | 76.0 | 42 - 120                         |               |       |                |
| 2,4-Dichlorophenol          | 3.662  | 0.20                       | 5       | 0              | 73.2 | 49 - 120                         |               |       |                |
| 2,4-Dimethylphenol          | 3.54   | 0.20                       | 5       | 0              | 70.8 | 35 - 120                         |               |       |                |
| 2,4-Dinitrophenol           | 3.146  | 1.0                        | 5       | 0              | 62.9 | 15 - 120                         |               |       |                |
| 2,4-Dinitrotoluene          | 3.876  | 0.20                       | 5       | 0              | 77.5 | 50 - 122                         |               |       |                |
| 2,6-Dinitrotoluene          | 4.399  | 0.20                       | 5       | 0              | 88.0 | 50 - 120                         |               |       |                |
| 2-Chloronaphthalene         | 3.549  | 0.20                       | 5       | 0              | 71.0 | 50 - 120                         |               |       |                |
| 2-Chlorophenol              | 2.986  | 0.20                       | 5       | 0              | 59.7 | 40 - 120                         |               |       |                |
| 2-Methylnaphthalene         | 3.438  | 0.10                       | 5       | 0              | 68.8 | 50 - 120                         |               |       |                |
| 2-Methylphenol              | 3.48   | 0.20                       | 5       | 0              | 69.6 | 45 - 120                         |               |       |                |
| 2-Nitroaniline              | 4.638  | 0.20                       | 5       | 0              | 92.8 | 28 - 139                         |               |       |                |
| 2-Nitrophenol               | 4.038  | 0.20                       | 5       | 0              | 80.8 | 40 - 120                         |               |       |                |
| 3&4-Methylphenol            | 3.329  | 0.20                       | 5       | 0              | 66.6 | 35 - 120                         |               |       |                |
| 3,3'-Dichlorobenzidine      | 2.323  | 0.20                       | 5       | 0              | 46.5 | 15 - 120                         |               |       |                |
| 3-Nitroaniline              | 3.367  | 0.20                       | 5       | 0              | 67.3 | 30 - 120                         |               |       |                |
| 4,6-Dinitro-2-methylphenol  | 3.795  | 0.20                       | 5       | 0              | 75.9 | 25 - 121                         |               |       |                |
| 4-Bromophenyl phenyl ether  | 3.746  | 0.20                       | 5       | 0              | 74.9 | 45 - 120                         |               |       |                |
| 4-Chloro-3-methylphenol     | 4.104  | 0.20                       | 5       | 0              | 82.1 | 47 - 120                         |               |       |                |
| 4-Chloroaniline             | 2.85   | 0.20                       | 5       | 0              | 57.0 | 20 - 120                         |               |       |                |
| 4-Chlorophenyl phenyl ether | 3.681  | 0.20                       | 5       | 0              | 73.6 | 50 - 120                         |               |       |                |
| 4-Nitroaniline              | 3.22   | 0.20                       | 5       | 0              | 64.4 | 30 - 133                         |               |       |                |
| 4-Nitrophenol               | 4.264  | 1.0                        | 5       | 0              | 85.3 | 30 - 130                         |               |       |                |
| Acenaphthene                | 3.26   | 0.10                       | 5       | 0              | 65.2 | 45 - 120                         |               |       |                |
| Acenaphthylene              | 3.431  | 0.10                       | 5       | 0              | 68.6 | 47 - 120                         |               |       |                |
| Acetophenone                | 3.216  | 0.20                       | 5       | 0              | 64.3 | 40 - 120                         |               |       |                |
| Anthracene                  | 3.839  | 0.10                       | 5       | 0              | 76.8 | 45 - 120                         |               |       |                |
| Atrazine                    | 3.476  | 0.20                       | 5       | 0              | 69.5 | 40 - 130                         |               |       |                |
| Benz(a)anthracene           | 3.784  | 0.10                       | 5       | 0              | 75.7 | 40 - 120                         |               |       |                |
| Benzaldehyde                | 1.24   | 0.20                       | 5       | 0              | 24.8 | 15 - 120                         |               |       |                |
| Benzo(a)pyrene              | 3.547  | 0.10                       | 5       | 0              | 70.9 | 45 - 120                         |               |       |                |
| Benzo(b)fluoranthene        | 4.014  | 0.10                       | 5       | 0              | 80.3 | 50 - 120                         |               |       |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85377             |        | Instrument: SV-4           |         | Method: SW8270 |      |                                  |               |       |                |
|-----------------------------|--------|----------------------------|---------|----------------|------|----------------------------------|---------------|-------|----------------|
| MS                          |        | Sample ID: HS14080747-03MS |         | Units: ug/L    |      | Analysis Date: 22-Aug-2014 14:51 |               |       |                |
| Client ID: MW-5             |        | Run ID: SV-4_240358        |         | SeqNo: 2991719 |      | PrepDate: 22-Aug-2014            |               | DF: 1 |                |
| Analyte                     | Result | PQL                        | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit Qual |
| Benzo(g,h,i)perylene        | 3.74   | 0.10                       | 5       | 0              | 74.8 | 42 - 127                         |               |       |                |
| Benzo(k)fluoranthene        | 3.504  | 0.10                       | 5       | 0              | 70.1 | 45 - 127                         |               |       |                |
| Bis(2-chloroethoxy)methane  | 3.492  | 0.20                       | 5       | 0              | 69.8 | 45 - 120                         |               |       |                |
| Bis(2-chloroethyl)ether     | 3.474  | 0.20                       | 5       | 0              | 69.5 | 37 - 121                         |               |       |                |
| Bis(2-chloroisopropyl)ether | 3.176  | 0.20                       | 5       | 0              | 63.5 | 40 - 120                         |               |       |                |
| Bis(2-ethylhexyl)phthalate  | 9.269  | 0.20                       | 5       | 5.343          | 78.5 | 40 - 139                         |               |       |                |
| Butyl benzyl phthalate      | 3.522  | 0.20                       | 5       | 0              | 70.4 | 47 - 123                         |               |       |                |
| Caprolactam                 | 4.084  | 0.20                       | 5       | 0              | 81.7 | 35 - 134                         |               |       |                |
| Carbazole                   | 4.005  | 0.20                       | 5       | 0              | 80.1 | 42 - 128                         |               |       |                |
| Chrysene                    | 3.553  | 0.10                       | 5       | 0              | 71.1 | 43 - 120                         |               |       |                |
| Dibenz(a,h)anthracene       | 4.11   | 0.10                       | 5       | 0              | 82.2 | 45 - 125                         |               |       |                |
| Dibenzofuran                | 3.492  | 0.10                       | 5       | 0              | 69.8 | 50 - 120                         |               |       |                |
| Diethyl phthalate           | 3.52   | 0.20                       | 5       | 0              | 70.4 | 41 - 120                         |               |       |                |
| Dimethyl phthalate          | 3.651  | 0.20                       | 5       | 0              | 73.0 | 40 - 122                         |               |       |                |
| Di-n-butyl phthalate        | 3.819  | 0.20                       | 5       | 0              | 76.4 | 45 - 123                         |               |       |                |
| Di-n-octyl phthalate        | 3.535  | 0.20                       | 5       | 0.06041        | 69.5 | 45 - 129                         |               |       |                |
| Fluoranthene                | 3.937  | 0.10                       | 5       | 0              | 78.7 | 45 - 125                         |               |       |                |
| Fluorene                    | 3.649  | 0.10                       | 5       | 0              | 73.0 | 49 - 120                         |               |       |                |
| Hexachlorobenzene           | 3.648  | 0.20                       | 5       | 0              | 73.0 | 48 - 120                         |               |       |                |
| Hexachlorobutadiene         | 3.754  | 0.20                       | 5       | 0              | 75.1 | 40 - 120                         |               |       |                |
| Hexachlorocyclopentadiene   | 3.12   | 0.20                       | 5       | 0              | 62.4 | 34 - 136                         |               |       |                |
| Hexachloroethane            | 3.269  | 0.20                       | 5       | 0              | 65.4 | 40 - 120                         |               |       |                |
| Indeno(1,2,3-cd)pyrene      | 4.184  | 0.10                       | 5       | 0              | 83.7 | 41 - 128                         |               |       |                |
| Isophorone                  | 3.745  | 0.20                       | 5       | 0              | 74.9 | 40 - 121                         |               |       |                |
| Naphthalene                 | 3.589  | 0.10                       | 5       | 0              | 71.8 | 45 - 120                         |               |       |                |
| Nitrobenzene                | 3.545  | 0.20                       | 5       | 0              | 70.9 | 44 - 120                         |               |       |                |
| N-Nitrosodi-n-propylamine   | 3.443  | 0.20                       | 5       | 0              | 68.9 | 40 - 120                         |               |       |                |
| N-Nitrosodiphenylamine      | 3.567  | 0.20                       | 5       | 0              | 71.3 | 40 - 125                         |               |       |                |
| Pentachlorophenol           | 3.481  | 0.20                       | 5       | 0              | 69.6 | 19 - 121                         |               |       |                |
| Phenanthrene                | 3.852  | 0.10                       | 5       | 0              | 77.0 | 45 - 121                         |               |       |                |
| Phenol                      | 3.649  | 0.20                       | 5       | 0              | 73.0 | 20 - 124                         |               |       |                |
| Pyrene                      | 3.596  | 0.10                       | 5       | 0              | 71.9 | 40 - 130                         |               |       |                |
| Surr: 2,4,6-Tribromophenol  | 4.078  | 0.20                       | 5       | 0              | 81.6 | 34 - 129                         |               |       |                |
| Surr: 2-Fluorobiphenyl      | 3.613  | 0.20                       | 5       | 0              | 72.3 | 40 - 125                         |               |       |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
WorkOrder: HS14080747  
Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85377       |                            | Instrument: SV-4 |                | Method: SW8270 |                                  |               |               |      |                |  |
|-----------------------|----------------------------|------------------|----------------|----------------|----------------------------------|---------------|---------------|------|----------------|--|
| MS                    | Sample ID: HS14080747-03MS | Units: ug/L      |                |                | Analysis Date: 22-Aug-2014 14:51 |               |               |      |                |  |
| Client ID: MW-5       | Run ID: SV-4_240358        |                  | SeqNo: 2991719 |                | PrepDate: 22-Aug-2014            |               | DF: 1         |      |                |  |
| Analyte               | Result                     | PQL              | SPK Val        | SPK Ref Value  | %REC                             | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |  |
| Surr: 2-Fluorophenol  | 2.953                      | 0.20             | 5              | 0              | 59.1                             | 20 - 120      |               |      |                |  |
| Surr: 4-Terphenyl-d14 | 3.898                      | 0.20             | 5              | 0              | 78.0                             | 40 - 135      |               |      |                |  |
| Surr: Nitrobenzene-d5 | 3.889                      | 0.20             | 5              | 0              | 77.8                             | 41 - 120      |               |      |                |  |
| Surr: Phenol-d6       | 3.63                       | 0.20             | 5              | 0              | 72.6                             | 20 - 120      |               |      |                |  |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85377             |        | Instrument: SV-4            |         | Method: SW8270 |      |                                  |               |       |           |      |
|-----------------------------|--------|-----------------------------|---------|----------------|------|----------------------------------|---------------|-------|-----------|------|
| <b>MSD</b>                  |        | Sample ID: HS14080747-03MSD |         | Units: ug/L    |      | Analysis Date: 22-Aug-2014 15:11 |               |       |           |      |
| Client ID: MW-5             |        | Run ID: SV-4_240358         |         | SeqNo: 2991720 |      | PrepDate: 22-Aug-2014            |               | DF: 1 |           |      |
| Analyte                     | Result | PQL                         | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit | Qual |
| 1,1'-Biphenyl               | 3.529  | 0.20                        | 5       | 0              | 70.6 | 45 - 125                         | 3.398         | 3.79  | 20        |      |
| 1-Methylnaphthalene         | 3.531  | 0.10                        | 5       | 0              | 70.6 | 45 - 120                         | 3.477         | 1.57  | 20        |      |
| 2,4,5-Trichlorophenol       | 3.965  | 0.20                        | 5       | 0              | 79.3 | 46 - 120                         | 3.913         | 1.33  | 20        |      |
| 2,4,6-Trichlorophenol       | 3.91   | 0.20                        | 5       | 0              | 78.2 | 42 - 120                         | 3.8           | 2.84  | 20        |      |
| 2,4-Dichlorophenol          | 3.731  | 0.20                        | 5       | 0              | 74.6 | 49 - 120                         | 3.662         | 1.87  | 20        |      |
| 2,4-Dimethylphenol          | 3.766  | 0.20                        | 5       | 0              | 75.3 | 35 - 120                         | 3.54          | 6.17  | 20        |      |
| 2,4-Dinitrophenol           | 3.384  | 1.0                         | 5       | 0              | 67.7 | 15 - 120                         | 3.146         | 7.31  | 50        |      |
| 2,4-Dinitrotoluene          | 3.897  | 0.20                        | 5       | 0              | 77.9 | 50 - 122                         | 3.876         | 0.548 | 20        |      |
| 2,6-Dinitrotoluene          | 4.953  | 0.20                        | 5       | 0              | 99.1 | 50 - 120                         | 4.399         | 11.8  | 20        |      |
| 2-Chloronaphthalene         | 3.782  | 0.20                        | 5       | 0              | 75.6 | 50 - 120                         | 3.549         | 6.37  | 20        |      |
| 2-Chlorophenol              | 3.433  | 0.20                        | 5       | 0              | 68.7 | 40 - 120                         | 2.986         | 13.9  | 20        |      |
| 2-Methylnaphthalene         | 3.571  | 0.10                        | 5       | 0              | 71.4 | 50 - 120                         | 3.438         | 3.8   | 20        |      |
| 2-Methylphenol              | 3.53   | 0.20                        | 5       | 0              | 70.6 | 45 - 120                         | 3.48          | 1.43  | 20        |      |
| 2-Nitroaniline              | 4.705  | 0.20                        | 5       | 0              | 94.1 | 28 - 139                         | 4.638         | 1.44  | 20        |      |
| 2-Nitrophenol               | 4.044  | 0.20                        | 5       | 0              | 80.9 | 40 - 120                         | 4.038         | 0.151 | 20        |      |
| 3&4-Methylphenol            | 3.55   | 0.20                        | 5       | 0              | 71.0 | 35 - 120                         | 3.329         | 6.44  | 20        |      |
| 3,3'-Dichlorobenzidine      | 2.419  | 0.20                        | 5       | 0              | 48.4 | 15 - 120                         | 2.323         | 4.04  | 20        |      |
| 3-Nitroaniline              | 3.879  | 0.20                        | 5       | 0              | 77.6 | 30 - 120                         | 3.367         | 14.2  | 20        |      |
| 4,6-Dinitro-2-methylphenol  | 4.566  | 0.20                        | 5       | 0              | 91.3 | 25 - 121                         | 3.795         | 18.4  | 20        |      |
| 4-Bromophenyl phenyl ether  | 4.057  | 0.20                        | 5       | 0              | 81.1 | 45 - 120                         | 3.746         | 7.97  | 20        |      |
| 4-Chloro-3-methylphenol     | 4.055  | 0.20                        | 5       | 0              | 81.1 | 47 - 120                         | 4.104         | 1.21  | 20        |      |
| 4-Chloroaniline             | 3.366  | 0.20                        | 5       | 0              | 67.3 | 20 - 120                         | 2.85          | 16.6  | 20        |      |
| 4-Chlorophenyl phenyl ether | 3.644  | 0.20                        | 5       | 0              | 72.9 | 50 - 120                         | 3.681         | 1.02  | 20        |      |
| 4-Nitroaniline              | 3.047  | 0.20                        | 5       | 0              | 60.9 | 30 - 133                         | 3.22          | 5.52  | 20        |      |
| 4-Nitrophenol               | 4.548  | 1.0                         | 5       | 0              | 91.0 | 30 - 130                         | 4.264         | 6.44  | 20        |      |
| Acenaphthene                | 3.385  | 0.10                        | 5       | 0              | 67.7 | 45 - 120                         | 3.26          | 3.78  | 20        |      |
| Acenaphthylene              | 3.688  | 0.10                        | 5       | 0              | 73.8 | 47 - 120                         | 3.431         | 7.24  | 20        |      |
| Acetophenone                | 3.467  | 0.20                        | 5       | 0              | 69.3 | 40 - 120                         | 3.216         | 7.5   | 20        |      |
| Anthracene                  | 4.043  | 0.10                        | 5       | 0              | 80.9 | 45 - 120                         | 3.839         | 5.17  | 20        |      |
| Atrazine                    | 3.71   | 0.20                        | 5       | 0              | 74.2 | 40 - 130                         | 3.476         | 6.52  | 20        |      |
| Benz(a)anthracene           | 4.138  | 0.10                        | 5       | 0              | 82.8 | 40 - 120                         | 3.784         | 8.93  | 20        |      |
| Benzaldehyde                | 1.109  | 0.20                        | 5       | 0              | 22.2 | 15 - 120                         | 1.24          | 11.1  | 30        |      |
| Benzo(a)pyrene              | 3.711  | 0.10                        | 5       | 0              | 74.2 | 45 - 120                         | 3.547         | 4.52  | 20        |      |
| Benzo(b)fluoranthene        | 4.115  | 0.10                        | 5       | 0              | 82.3 | 50 - 120                         | 4.014         | 2.49  | 20        |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85377             |        | Instrument: SV-4            |         | Method: SW8270 |      |                                  |               |       |           |      |
|-----------------------------|--------|-----------------------------|---------|----------------|------|----------------------------------|---------------|-------|-----------|------|
| MSD                         |        | Sample ID: HS14080747-03MSD |         | Units: ug/L    |      | Analysis Date: 22-Aug-2014 15:11 |               |       |           |      |
| Client ID: MW-5             |        | Run ID: SV-4_240358         |         | SeqNo: 2991720 |      | PrepDate: 22-Aug-2014            |               | DF: 1 |           |      |
| Analyte                     | Result | PQL                         | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit | Qual |
| Benzo(g,h,i)perylene        | 4.187  | 0.10                        | 5       | 0              | 83.7 | 42 - 127                         | 3.74          | 11.3  | 20        |      |
| Benzo(k)fluoranthene        | 3.6    | 0.10                        | 5       | 0              | 72.0 | 45 - 127                         | 3.504         | 2.7   | 20        |      |
| Bis(2-chloroethoxy)methane  | 3.637  | 0.20                        | 5       | 0              | 72.7 | 45 - 120                         | 3.492         | 4.07  | 20        |      |
| Bis(2-chloroethyl)ether     | 3.359  | 0.20                        | 5       | 0              | 67.2 | 37 - 121                         | 3.474         | 3.36  | 20        |      |
| Bis(2-chloroisopropyl)ether | 3.324  | 0.20                        | 5       | 0              | 66.5 | 40 - 120                         | 3.176         | 4.56  | 20        |      |
| Bis(2-ethylhexyl)phthalate  | 9.394  | 0.20                        | 5       | 5.343          | 81.0 | 40 - 139                         | 9.269         | 1.34  | 20        |      |
| Butyl benzyl phthalate      | 3.825  | 0.20                        | 5       | 0              | 76.5 | 47 - 123                         | 3.522         | 8.26  | 20        |      |
| Caprolactam                 | 4.115  | 0.20                        | 5       | 0              | 82.3 | 35 - 134                         | 4.084         | 0.749 | 20        |      |
| Carbazole                   | 4.312  | 0.20                        | 5       | 0              | 86.2 | 42 - 128                         | 4.005         | 7.37  | 20        |      |
| Chrysene                    | 3.967  | 0.10                        | 5       | 0              | 79.3 | 43 - 120                         | 3.553         | 11    | 20        |      |
| Dibenz(a,h)anthracene       | 3.915  | 0.10                        | 5       | 0              | 78.3 | 45 - 125                         | 4.11          | 4.86  | 20        |      |
| Dibenzofuran                | 3.506  | 0.10                        | 5       | 0              | 70.1 | 50 - 120                         | 3.492         | 0.401 | 20        |      |
| Diethyl phthalate           | 3.466  | 0.20                        | 5       | 0              | 69.3 | 41 - 120                         | 3.52          | 1.56  | 20        |      |
| Dimethyl phthalate          | 3.706  | 0.20                        | 5       | 0              | 74.1 | 40 - 122                         | 3.651         | 1.48  | 20        |      |
| Di-n-butyl phthalate        | 4.015  | 0.20                        | 5       | 0              | 80.3 | 45 - 123                         | 3.819         | 5     | 20        |      |
| Di-n-octyl phthalate        | 3.781  | 0.20                        | 5       | 0.06041        | 74.4 | 45 - 129                         | 3.535         | 6.74  | 20        |      |
| Fluoranthene                | 4.169  | 0.10                        | 5       | 0              | 83.4 | 45 - 125                         | 3.937         | 5.73  | 20        |      |
| Fluorene                    | 3.721  | 0.10                        | 5       | 0              | 74.4 | 49 - 120                         | 3.649         | 1.94  | 20        |      |
| Hexachlorobenzene           | 4.097  | 0.20                        | 5       | 0              | 81.9 | 48 - 120                         | 3.648         | 11.6  | 20        |      |
| Hexachlorobutadiene         | 3.897  | 0.20                        | 5       | 0              | 77.9 | 40 - 120                         | 3.754         | 3.73  | 20        |      |
| Hexachlorocyclopentadiene   | 3.632  | 0.20                        | 5       | 0              | 72.6 | 34 - 136                         | 3.12          | 15.2  | 20        |      |
| Hexachloroethane            | 3.383  | 0.20                        | 5       | 0              | 67.7 | 40 - 120                         | 3.269         | 3.42  | 20        |      |
| Indeno(1,2,3-cd)pyrene      | 4.3    | 0.10                        | 5       | 0              | 86.0 | 41 - 128                         | 4.184         | 2.74  | 20        |      |
| Isophorone                  | 3.952  | 0.20                        | 5       | 0              | 79.0 | 40 - 121                         | 3.745         | 5.36  | 20        |      |
| Naphthalene                 | 3.75   | 0.10                        | 5       | 0              | 75.0 | 45 - 120                         | 3.589         | 4.4   | 20        |      |
| Nitrobenzene                | 3.669  | 0.20                        | 5       | 0              | 73.4 | 44 - 120                         | 3.545         | 3.43  | 20        |      |
| N-Nitrosodi-n-propylamine   | 3.617  | 0.20                        | 5       | 0              | 72.3 | 40 - 120                         | 3.443         | 4.91  | 20        |      |
| N-Nitrosodiphenylamine      | 3.925  | 0.20                        | 5       | 0              | 78.5 | 40 - 125                         | 3.567         | 9.55  | 20        |      |
| Pentachlorophenol           | 4.58   | 0.20                        | 5       | 0              | 91.6 | 19 - 121                         | 3.481         | 27.2  | 20        | R    |
| Phenanthrene                | 4.139  | 0.10                        | 5       | 0              | 82.8 | 45 - 121                         | 3.852         | 7.17  | 20        |      |
| Phenol                      | 3.739  | 0.20                        | 5       | 0              | 74.8 | 20 - 124                         | 3.649         | 2.44  | 20        |      |
| Pyrene                      | 3.879  | 0.10                        | 5       | 0              | 77.6 | 40 - 130                         | 3.596         | 7.56  | 20        |      |
| Surr: 2,4,6-Tribromophenol  | 4.135  | 0.20                        | 5       | 0              | 82.7 | 34 - 129                         | 4.078         | 1.4   |           |      |
| Surr: 2-Fluorobiphenyl      | 3.782  | 0.20                        | 5       | 0              | 75.6 | 40 - 125                         | 3.613         | 4.56  |           |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85377        |                                    | Instrument: SV-4   |                       | Method: SW8270                          |                                                 |
|------------------------|------------------------------------|--------------------|-----------------------|-----------------------------------------|-------------------------------------------------|
| <b>MSD</b>             | Sample ID: <b>HS14080747-03MSD</b> | Units: <b>ug/L</b> |                       | Analysis Date: <b>22-Aug-2014 15:11</b> |                                                 |
| Client ID: <b>MW-5</b> | Run ID: <b>SV-4_240358</b>         |                    | SeqNo: <b>2991720</b> | PrepDate: <b>22-Aug-2014</b>            | DF: <b>1</b>                                    |
| Analyte                | Result                             | PQL                | SPK Val               | SPK Ref Value %REC                      | Control Limit RPD Ref Value %RPD RPD Limit Qual |

|                              |       |      |   |        |                     |
|------------------------------|-------|------|---|--------|---------------------|
| <i>Surr: 2-Fluorophenol</i>  | 3.461 | 0.20 | 5 | 0 69.2 | 20 - 120 2.953 15.8 |
| <i>Surr: 4-Terphenyl-d14</i> | 4.295 | 0.20 | 5 | 0 85.9 | 40 - 135 3.898 9.68 |
| <i>Surr: Nitrobenzene-d5</i> | 4.044 | 0.20 | 5 | 0 80.9 | 41 - 120 3.889 3.91 |
| <i>Surr: Phenol-d6</i>       | 3.745 | 0.20 | 5 | 0 74.9 | 20 - 120 3.63 3.13  |

|                                                    |               |               |               |               |
|----------------------------------------------------|---------------|---------------|---------------|---------------|
| The following samples were analyzed in this batch: | HS14080747-01 | HS14080747-02 | HS14080747-03 | HS14080747-04 |
|                                                    | HS14080747-05 | HS14080747-06 | HS14080747-07 | HS14080747-08 |
|                                                    | HS14080747-09 | HS14080747-10 | HS14080747-12 | HS14080747-14 |
|                                                    | HS14080747-15 |               |               |               |
|                                                    |               |               |               |               |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: R239746         |                         | Instrument: VOA1 |                | Method: SW8260                   |           |               |               |      |                |
|---------------------------|-------------------------|------------------|----------------|----------------------------------|-----------|---------------|---------------|------|----------------|
| MBLK                      | Sample ID: VBLKW-140821 | Units: ug/L      |                | Analysis Date: 22-Aug-2014 11:41 |           |               |               |      |                |
| Client ID:                | Run ID: VOA1_239746     |                  | SeqNo: 2977978 |                                  | PrepDate: |               | DF: 1         |      |                |
| Analyte                   | Result                  | PQL              | SPK Val        | SPK Ref Value                    | %REC      | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |
| 1,1,1-Trichloroethane     | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,1,2,2-Tetrachloroethane | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,1,2-Trichloroethane     | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,1-Dichloroethane        | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,1-Dichloroethene        | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,2,4-Trimethylbenzene    | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,2-Dibromoethane         | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,2-Dichloroethane        | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,2-Dichloropropane       | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,3,5-Trimethylbenzene    | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 2-Butanone                | ND                      | 10               |                |                                  |           |               |               |      |                |
| 2-Hexanone                | ND                      | 10               |                |                                  |           |               |               |      |                |
| 4-Isopropyltoluene        | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 4-Methyl-2-pentanone      | ND                      | 10               |                |                                  |           |               |               |      |                |
| Acetone                   | ND                      | 10               |                |                                  |           |               |               |      |                |
| Benzene                   | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Bromodichloromethane      | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Bromoform                 | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Bromomethane              | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Carbon disulfide          | ND                      | 10               |                |                                  |           |               |               |      |                |
| Carbon tetrachloride      | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Chlorobenzene             | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Chloroethane              | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Chloroform                | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Chloromethane             | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| cis-1,2-Dichloroethene    | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| cis-1,3-Dichloropropene   | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Dibromochloromethane      | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Ethylbenzene              | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Isopropylbenzene          | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| m,p-Xylene                | ND                      | 10               |                |                                  |           |               |               |      |                |
| Methyl tert-butyl ether   | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Methylene chloride        | ND                      | 10               |                |                                  |           |               |               |      |                |
| Naphthalene               | ND                      | 5.0              |                |                                  |           |               |               |      |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R239746           |        |                         | Instrument: VOA1 |                | Method: SW8260 |                                  |               |       |                |
|-----------------------------|--------|-------------------------|------------------|----------------|----------------|----------------------------------|---------------|-------|----------------|
| MBLK                        |        | Sample ID: VBLKW-140821 |                  | Units: ug/L    |                | Analysis Date: 22-Aug-2014 11:41 |               |       |                |
| Client ID:                  |        | Run ID: VOA1_239746     |                  | SeqNo: 2977978 |                | PrepDate:                        |               | DF: 1 |                |
| Analyte                     | Result | PQL                     | SPK Val          | SPK Ref Value  | %REC           | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit Qual |
| n-Butylbenzene              | ND     | 5.0                     |                  |                |                |                                  |               |       |                |
| n-Propylbenzene             | ND     | 5.0                     |                  |                |                |                                  |               |       |                |
| o-Xylene                    | ND     | 5.0                     |                  |                |                |                                  |               |       |                |
| sec-Butylbenzene            | ND     | 5.0                     |                  |                |                |                                  |               |       |                |
| Styrene                     | ND     | 5.0                     |                  |                |                |                                  |               |       |                |
| Tetrachloroethene           | ND     | 5.0                     |                  |                |                |                                  |               |       |                |
| Toluene                     | ND     | 5.0                     |                  |                |                |                                  |               |       |                |
| trans-1,2-Dichloroethene    | ND     | 5.0                     |                  |                |                |                                  |               |       |                |
| trans-1,3-Dichloropropene   | ND     | 5.0                     |                  |                |                |                                  |               |       |                |
| Trichloroethene             | ND     | 5.0                     |                  |                |                |                                  |               |       |                |
| Vinyl chloride              | ND     | 2.0                     |                  |                |                |                                  |               |       |                |
| Xylenes, Total              | ND     | 15                      |                  |                |                |                                  |               |       |                |
| Surr: 1,2-Dichloroethane-d4 | 42.58  | 5.0                     | 50               | 0              | 85.2           | 70 - 125                         |               |       |                |
| Surr: 4-Bromofluorobenzene  | 47.78  | 5.0                     | 50               | 0              | 95.6           | 72 - 125                         |               |       |                |
| Surr: Dibromofluoromethane  | 44.22  | 5.0                     | 50               | 0              | 88.4           | 71 - 125                         |               |       |                |
| Surr: Toluene-d8            | 49.39  | 5.0                     | 50               | 0              | 98.8           | 75 - 125                         |               |       |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: R239746         |  | Instrument: VOA1        |     | Method: SW8260                   |                 |
|---------------------------|--|-------------------------|-----|----------------------------------|-----------------|
| LCS                       |  | Sample ID: VLCSW-140822 |     | Units: ug/L                      |                 |
| Client ID:                |  | Run ID: VOA1_239746     |     | SeqNo: 2977977                   |                 |
| Analyte                   |  | Result                  |     | Analysis Date: 22-Aug-2014 10:44 |                 |
|                           |  | PQL                     |     | PrepDate: DF: 1                  |                 |
|                           |  | SPK Val                 |     | SPK Ref Value %REC               |                 |
|                           |  |                         |     | Control Limit                    |                 |
|                           |  |                         |     | RPD Ref Value %RPD               |                 |
|                           |  |                         |     | RPD Limit Qual                   |                 |
| 1,1,1-Trichloroethane     |  | 49.1                    | 5.0 | 50                               | 0 98.2 80 - 120 |
| 1,1,2,2-Tetrachloroethane |  | 43.5                    | 5.0 | 50                               | 0 87.0 72 - 120 |
| 1,1,2-Trichloroethane     |  | 51.95                   | 5.0 | 50                               | 0 104 80 - 120  |
| 1,1-Dichloroethane        |  | 45.95                   | 5.0 | 50                               | 0 91.9 76 - 120 |
| 1,1-Dichloroethene        |  | 48.07                   | 5.0 | 50                               | 0 96.1 73 - 124 |
| 1,2,4-Trimethylbenzene    |  | 48.15                   | 5.0 | 50                               | 0 96.3 68 - 123 |
| 1,2-Dibromoethane         |  | 51.85                   | 5.0 | 50                               | 0 104 80 - 120  |
| 1,2-Dichloroethane        |  | 51.23                   | 5.0 | 50                               | 0 102 78 - 120  |
| 1,2-Dichloropropane       |  | 50.28                   | 5.0 | 50                               | 0 101 80 - 120  |
| 1,3,5-Trimethylbenzene    |  | 49.83                   | 5.0 | 50                               | 0 99.7 80 - 120 |
| 2-Butanone                |  | 82.05                   | 10  | 100                              | 0 82.0 58 - 132 |
| 2-Hexanone                |  | 91.97                   | 10  | 100                              | 0 92.0 61 - 130 |
| 4-Isopropyltoluene        |  | 49.72                   | 5.0 | 50                               | 0 99.4 79 - 120 |
| 4-Methyl-2-pentanone      |  | 91.43                   | 10  | 100                              | 0 91.4 65 - 127 |
| Acetone                   |  | 82                      | 10  | 100                              | 0 82.0 59 - 137 |
| Benzene                   |  | 51.31                   | 5.0 | 50                               | 0 103 73 - 121  |
| Bromodichloromethane      |  | 52.18                   | 5.0 | 50                               | 0 104 75 - 125  |
| Bromoform                 |  | 55.29                   | 5.0 | 50                               | 0 111 70 - 130  |
| Bromomethane              |  | 65.84                   | 5.0 | 50                               | 0 132 60 - 145  |
| Carbon disulfide          |  | 101.5                   | 10  | 100                              | 0 101 68 - 141  |
| Carbon tetrachloride      |  | 54.23                   | 5.0 | 50                               | 0 108 75 - 125  |
| Chlorobenzene             |  | 51.94                   | 5.0 | 50                               | 0 104 80 - 120  |
| Chloroethane              |  | 44                      | 5.0 | 50                               | 0 88.0 70 - 130 |
| Chloroform                |  | 48.4                    | 5.0 | 50                               | 0 96.8 70 - 130 |
| Chloromethane             |  | 38.41                   | 5.0 | 50                               | 0 76.8 67 - 123 |
| cis-1,2-Dichloroethene    |  | 47.15                   | 5.0 | 50                               | 0 94.3 78 - 120 |
| cis-1,3-Dichloropropene   |  | 53.41                   | 5.0 | 50                               | 0 107 80 - 120  |
| Dibromochloromethane      |  | 53                      | 5.0 | 50                               | 0 106 80 - 120  |
| Ethylbenzene              |  | 55.07                   | 5.0 | 50                               | 0 110 80 - 120  |
| Isopropylbenzene          |  | 53                      | 5.0 | 50                               | 0 106 75 - 130  |
| m,p-Xylene                |  | 106.3                   | 10  | 100                              | 0 106 78 - 121  |
| Methyl tert-butyl ether   |  | 48.22                   | 5.0 | 50                               | 0 96.4 70 - 125 |
| Methylene chloride        |  | 50.6                    | 10  | 50                               | 0 101 65 - 133  |
| Naphthalene               |  | 50.4                    | 5.0 | 50                               | 0 101 65 - 135  |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R239746           |  | Instrument: VOA1        |  | Method: SW8260                   |  |
|-----------------------------|--|-------------------------|--|----------------------------------|--|
| LCS                         |  | Sample ID: VLCSW-140822 |  | Units: ug/L                      |  |
| Client ID:                  |  | Run ID: VOA1_239746     |  | SeqNo: 2977977                   |  |
| Analyte                     |  | Result                  |  | Analysis Date: 22-Aug-2014 10:44 |  |
|                             |  | PQL                     |  | PrepDate: DF: 1                  |  |
|                             |  | SPK Val                 |  | SPK Ref Value %REC               |  |
|                             |  |                         |  | Control Limit                    |  |
|                             |  |                         |  | RPD Ref Value %RPD               |  |
|                             |  |                         |  | RPD Limit Qual                   |  |
| n-Butylbenzene              |  | 50.22                   |  | 77 - 120                         |  |
| n-Propylbenzene             |  | 49.55                   |  | 78 - 120                         |  |
| o-Xylene                    |  | 53.24                   |  | 80 - 120                         |  |
| sec-Butylbenzene            |  | 50.91                   |  | 78 - 120                         |  |
| Styrene                     |  | 54.87                   |  | 80 - 120                         |  |
| Tetrachloroethene           |  | 55.48                   |  | 74 - 125                         |  |
| Toluene                     |  | 52.46                   |  | 80 - 120                         |  |
| trans-1,2-Dichloroethene    |  | 47.79                   |  | 78 - 120                         |  |
| trans-1,3-Dichloropropene   |  | 51.08                   |  | 80 - 120                         |  |
| Trichloroethene             |  | 52.7                    |  | 80 - 120                         |  |
| Vinyl chloride              |  | 42.97                   |  | 70 - 127                         |  |
| Xylenes, Total              |  | 159.5                   |  | 80 - 120                         |  |
| Surr: 1,2-Dichloroethane-d4 |  | 45.23                   |  | 70 - 125                         |  |
| Surr: 4-Bromofluorobenzene  |  | 51.09                   |  | 72 - 125                         |  |
| Surr: Dibromofluoromethane  |  | 46.16                   |  | 71 - 125                         |  |
| Surr: Toluene-d8            |  | 50.48                   |  | 75 - 125                         |  |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R239746         |                            | Instrument: VOA1 |         | Method: SW8260                   |                                                 |
|---------------------------|----------------------------|------------------|---------|----------------------------------|-------------------------------------------------|
| MS                        | Sample ID: HS14080684-02MS | Units: ug/L      |         | Analysis Date: 22-Aug-2014 14:43 |                                                 |
| Client ID:                | Run ID: VOA1_239746        | SeqNo: 2977980   |         | PrepDate:                        | DF: 1                                           |
| Analyte                   | Result                     | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| 1,1,1-Trichloroethane     | 45.29                      | 5.0              | 50      | 0 90.6                           | 80 - 120                                        |
| 1,1,2,2-Tetrachloroethane | 44.79                      | 5.0              | 50      | 0 89.6                           | 72 - 120                                        |
| 1,1,2-Trichloroethane     | 49.31                      | 5.0              | 50      | 0 98.6                           | 80 - 120                                        |
| 1,1-Dichloroethane        | 43.04                      | 5.0              | 50      | 0 86.1                           | 76 - 120                                        |
| 1,1-Dichloroethene        | 42.84                      | 5.0              | 50      | 0 85.7                           | 73 - 124                                        |
| 1,2,4-Trimethylbenzene    | 44.65                      | 5.0              | 50      | 0 89.3                           | 68 - 123                                        |
| 1,2-Dibromoethane         | 50.1                       | 5.0              | 50      | 0 100                            | 80 - 120                                        |
| 1,2-Dichloroethane        | 49.4                       | 5.0              | 50      | 0 98.8                           | 78 - 120                                        |
| 1,2-Dichloropropane       | 47.41                      | 5.0              | 50      | 0 94.8                           | 80 - 120                                        |
| 1,3,5-Trimethylbenzene    | 46.29                      | 5.0              | 50      | 0 92.6                           | 80 - 120                                        |
| 2-Butanone                | 85.63                      | 10               | 100     | 0 85.6                           | 58 - 132                                        |
| 2-Hexanone                | 98.38                      | 10               | 100     | 0 98.4                           | 61 - 130                                        |
| 4-Isopropyltoluene        | 46.91                      | 5.0              | 50      | 0 93.8                           | 79 - 120                                        |
| 4-Methyl-2-pentanone      | 94.48                      | 10               | 100     | 0 94.5                           | 65 - 127                                        |
| Acetone                   | 83.04                      | 10               | 100     | 0 83.0                           | 59 - 137                                        |
| Benzene                   | 48.42                      | 5.0              | 50      | 0 96.8                           | 73 - 121                                        |
| Bromodichloromethane      | 49.25                      | 5.0              | 50      | 0 98.5                           | 75 - 125                                        |
| Bromoform                 | 53.76                      | 5.0              | 50      | 0 108                            | 70 - 130                                        |
| Bromomethane              | 51.43                      | 5.0              | 50      | 0 103                            | 60 - 145                                        |
| Carbon disulfide          | 89.02                      | 10               | 100     | 0 89.0                           | 68 - 141                                        |
| Carbon tetrachloride      | 48.96                      | 5.0              | 50      | 0 97.9                           | 75 - 125                                        |
| Chlorobenzene             | 48.24                      | 5.0              | 50      | 0 96.5                           | 80 - 120                                        |
| Chloroethane              | 40.4                       | 5.0              | 50      | 0 80.8                           | 70 - 130                                        |
| Chloroform                | 46.08                      | 5.0              | 50      | 0 92.2                           | 70 - 130                                        |
| Chloromethane             | 36.68                      | 5.0              | 50      | 0 73.4                           | 67 - 123                                        |
| cis-1,2-Dichloroethene    | 44.17                      | 5.0              | 50      | 0 88.3                           | 78 - 120                                        |
| cis-1,3-Dichloropropene   | 49.91                      | 5.0              | 50      | 0 99.8                           | 80 - 120                                        |
| Dibromochloromethane      | 50.31                      | 5.0              | 50      | 0 101                            | 80 - 120                                        |
| Ethylbenzene              | 49.12                      | 5.0              | 50      | 0 98.2                           | 80 - 120                                        |
| Isopropylbenzene          | 48.46                      | 5.0              | 50      | 0 96.9                           | 75 - 130                                        |
| m,p-Xylene                | 99.39                      | 10               | 100     | 0 99.4                           | 78 - 121                                        |
| Methyl tert-butyl ether   | 58.15                      | 5.0              | 50      | 12.99 90.3                       | 70 - 125                                        |
| Methylene chloride        | 46.25                      | 10               | 50      | 0 92.5                           | 65 - 133                                        |
| Naphthalene               | 52.27                      | 5.0              | 50      | 0 105                            | 65 - 135                                        |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: R239746           |                            | Instrument: VOA1 |         | Method: SW8260                   |                                                 |
|-----------------------------|----------------------------|------------------|---------|----------------------------------|-------------------------------------------------|
| MS                          | Sample ID: HS14080684-02MS | Units: ug/L      |         | Analysis Date: 22-Aug-2014 14:43 |                                                 |
| Client ID:                  | Run ID: VOA1_239746        | SeqNo: 2977980   |         | PrepDate:                        | DF: 1                                           |
| Analyte                     | Result                     | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| n-Butylbenzene              | 46.31                      | 5.0              | 50      | 0 92.6                           | 77 - 120                                        |
| n-Propylbenzene             | 45.48                      | 5.0              | 50      | 0 91.0                           | 78 - 120                                        |
| o-Xylene                    | 49.23                      | 5.0              | 50      | 0 98.5                           | 80 - 120                                        |
| sec-Butylbenzene            | 45.77                      | 5.0              | 50      | 0 91.5                           | 78 - 120                                        |
| Styrene                     | 51.3                       | 5.0              | 50      | 0 103                            | 80 - 120                                        |
| Tetrachloroethene           | 49.44                      | 5.0              | 50      | 0 98.9                           | 74 - 125                                        |
| Toluene                     | 47.31                      | 5.0              | 50      | 0 94.6                           | 80 - 120                                        |
| trans-1,2-Dichloroethene    | 44.38                      | 5.0              | 50      | 0 88.8                           | 78 - 120                                        |
| trans-1,3-Dichloropropene   | 49.85                      | 5.0              | 50      | 0 99.7                           | 80 - 120                                        |
| Trichloroethene             | 50.02                      | 5.0              | 50      | 0 100                            | 80 - 120                                        |
| Vinyl chloride              | 73.51                      | 2.0              | 50      | 39.13 68.8                       | 70 - 127 S                                      |
| Xylenes, Total              | 148.6                      | 15               | 150     | 0 99.1                           | 80 - 120                                        |
| Surr: 1,2-Dichloroethane-d4 | 43.91                      | 5.0              | 50      | 0 87.8                           | 70 - 125                                        |
| Surr: 4-Bromofluorobenzene  | 51.03                      | 5.0              | 50      | 0 102                            | 72 - 125                                        |
| Surr: Dibromofluoromethane  | 44.84                      | 5.0              | 50      | 0 89.7                           | 71 - 125                                        |
| Surr: Toluene-d8            | 49.34                      | 5.0              | 50      | 0 98.7                           | 75 - 125                                        |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R239746         |        | Instrument: VOA1            |         | Method: SW8260 |      |                                  |               |        |           |      |
|---------------------------|--------|-----------------------------|---------|----------------|------|----------------------------------|---------------|--------|-----------|------|
| MSD                       |        | Sample ID: HS14080684-02MSD |         | Units: ug/L    |      | Analysis Date: 22-Aug-2014 15:15 |               |        |           |      |
| Client ID:                |        | Run ID: VOA1_239746         |         | SeqNo: 2977981 |      | PrepDate:                        |               | DF: 1  |           |      |
| Analyte                   | Result | PQL                         | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD   | RPD Limit | Qual |
| 1,1,1-Trichloroethane     | 44.27  | 5.0                         | 50      | 0              | 88.5 | 80 - 120                         | 45.29         | 2.28   | 20        |      |
| 1,1,2,2-Tetrachloroethane | 46.26  | 5.0                         | 50      | 0              | 92.5 | 72 - 120                         | 44.79         | 3.23   | 20        |      |
| 1,1,2-Trichloroethane     | 48.84  | 5.0                         | 50      | 0              | 97.7 | 80 - 120                         | 49.31         | 0.95   | 20        |      |
| 1,1-Dichloroethane        | 44.56  | 5.0                         | 50      | 0              | 89.1 | 76 - 120                         | 43.04         | 3.47   | 20        |      |
| 1,1-Dichloroethene        | 44.65  | 5.0                         | 50      | 0              | 89.3 | 73 - 124                         | 42.84         | 4.14   | 20        |      |
| 1,2,4-Trimethylbenzene    | 43.77  | 5.0                         | 50      | 0              | 87.5 | 68 - 123                         | 44.65         | 2.01   | 20        |      |
| 1,2-Dibromoethane         | 48.98  | 5.0                         | 50      | 0              | 98.0 | 80 - 120                         | 50.1          | 2.27   | 20        |      |
| 1,2-Dichloroethane        | 51.1   | 5.0                         | 50      | 0              | 102  | 78 - 120                         | 49.4          | 3.38   | 20        |      |
| 1,2-Dichloropropane       | 48.39  | 5.0                         | 50      | 0              | 96.8 | 80 - 120                         | 47.41         | 2.05   | 20        |      |
| 1,3,5-Trimethylbenzene    | 43.3   | 5.0                         | 50      | 0              | 86.6 | 80 - 120                         | 46.29         | 6.67   | 20        |      |
| 2-Butanone                | 90.64  | 10                          | 100     | 0              | 90.6 | 58 - 132                         | 85.63         | 5.69   | 20        |      |
| 2-Hexanone                | 97.17  | 10                          | 100     | 0              | 97.2 | 61 - 130                         | 98.38         | 1.24   | 20        |      |
| 4-Isopropyltoluene        | 44.66  | 5.0                         | 50      | 0              | 89.3 | 79 - 120                         | 46.91         | 4.91   | 20        |      |
| 4-Methyl-2-pentanone      | 96.18  | 10                          | 100     | 0              | 96.2 | 65 - 127                         | 94.48         | 1.78   | 20        |      |
| Acetone                   | 88.06  | 10                          | 100     | 0              | 88.1 | 59 - 137                         | 83.04         | 5.86   | 20        |      |
| Benzene                   | 48.11  | 5.0                         | 50      | 0              | 96.2 | 73 - 121                         | 48.42         | 0.629  | 20        |      |
| Bromodichloromethane      | 50.43  | 5.0                         | 50      | 0              | 101  | 75 - 125                         | 49.25         | 2.36   | 20        |      |
| Bromoform                 | 52.3   | 5.0                         | 50      | 0              | 105  | 70 - 130                         | 53.76         | 2.75   | 20        |      |
| Bromomethane              | 55.93  | 5.0                         | 50      | 0              | 112  | 60 - 145                         | 51.43         | 8.37   | 20        |      |
| Carbon disulfide          | 92.95  | 10                          | 100     | 0              | 92.9 | 68 - 141                         | 89.02         | 4.32   | 20        |      |
| Carbon tetrachloride      | 50.59  | 5.0                         | 50      | 0              | 101  | 75 - 125                         | 48.96         | 3.27   | 20        |      |
| Chlorobenzene             | 47.69  | 5.0                         | 50      | 0              | 95.4 | 80 - 120                         | 48.24         | 1.15   | 20        |      |
| Chloroethane              | 40.92  | 5.0                         | 50      | 0              | 81.8 | 76 - 121                         | 40.4          | 1.28   | 20        |      |
| Chloroform                | 46.9   | 5.0                         | 50      | 0              | 93.8 | 70 - 130                         | 46.08         | 1.78   | 20        |      |
| Chloromethane             | 37.34  | 5.0                         | 50      | 0              | 74.7 | 67 - 123                         | 36.68         | 1.78   | 20        |      |
| cis-1,2-Dichloroethene    | 45.39  | 5.0                         | 50      | 0              | 90.8 | 78 - 120                         | 44.17         | 2.73   | 20        |      |
| cis-1,3-Dichloropropene   | 49.63  | 5.0                         | 50      | 0              | 99.3 | 80 - 120                         | 49.91         | 0.562  | 20        |      |
| Dibromochloromethane      | 50.32  | 5.0                         | 50      | 0              | 101  | 80 - 120                         | 50.31         | 0.0232 | 20        |      |
| Ethylbenzene              | 47.6   | 5.0                         | 50      | 0              | 95.2 | 80 - 120                         | 49.12         | 3.12   | 20        |      |
| Isopropylbenzene          | 46.44  | 5.0                         | 50      | 0              | 92.9 | 75 - 130                         | 48.46         | 4.27   | 20        |      |
| m,p-Xylene                | 96.28  | 10                          | 100     | 0              | 96.3 | 78 - 121                         | 99.39         | 3.18   | 20        |      |
| Methyl tert-butyl ether   | 60.46  | 5.0                         | 50      | 12.99          | 94.9 | 70 - 125                         | 58.15         | 3.9    | 20        |      |
| Methylene chloride        | 49.76  | 10                          | 50      | 0              | 99.5 | 65 - 133                         | 46.25         | 7.31   | 20        |      |
| Naphthalene               | 50.64  | 5.0                         | 50      | 0              | 101  | 65 - 135                         | 52.27         | 3.15   | 20        |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R239746           |        | Instrument: VOA1                   |         | Method: SW8260        |      |                                         |               |              |           |      |
|-----------------------------|--------|------------------------------------|---------|-----------------------|------|-----------------------------------------|---------------|--------------|-----------|------|
| <b>MSD</b>                  |        | Sample ID: <b>HS14080684-02MSD</b> |         | Units: <b>ug/L</b>    |      | Analysis Date: <b>22-Aug-2014 15:15</b> |               |              |           |      |
| Client ID:                  |        | Run ID: <b>VOA1_239746</b>         |         | SeqNo: <b>2977981</b> |      | PrepDate:                               |               | DF: <b>1</b> |           |      |
| Analyte                     | Result | PQL                                | SPK Val | SPK Ref Value         | %REC | Control Limit                           | RPD Ref Value | %RPD         | RPD Limit | Qual |
| n-Butylbenzene              | 42.45  | 5.0                                | 50      | 0                     | 84.9 | 77 - 120                                | 46.31         | 8.69         | 20        |      |
| n-Propylbenzene             | 43.36  | 5.0                                | 50      | 0                     | 86.7 | 78 - 120                                | 45.48         | 4.78         | 20        |      |
| o-Xylene                    | 48.08  | 5.0                                | 50      | 0                     | 96.2 | 80 - 120                                | 49.23         | 2.37         | 20        |      |
| sec-Butylbenzene            | 42.85  | 5.0                                | 50      | 0                     | 85.7 | 78 - 120                                | 45.77         | 6.57         | 20        |      |
| Styrene                     | 49.61  | 5.0                                | 50      | 0                     | 99.2 | 80 - 120                                | 51.3          | 3.34         | 20        |      |
| Tetrachloroethene           | 47.66  | 5.0                                | 50      | 0                     | 95.3 | 74 - 125                                | 49.44         | 3.68         | 20        |      |
| Toluene                     | 46.82  | 5.0                                | 50      | 0                     | 93.6 | 80 - 120                                | 47.31         | 1.04         | 20        |      |
| trans-1,2-Dichloroethene    | 43.75  | 5.0                                | 50      | 0                     | 87.5 | 78 - 120                                | 44.38         | 1.42         | 20        |      |
| trans-1,3-Dichloropropene   | 51.52  | 5.0                                | 50      | 0                     | 103  | 80 - 120                                | 49.85         | 3.3          | 20        |      |
| Trichloroethene             | 49.34  | 5.0                                | 50      | 0                     | 98.7 | 80 - 120                                | 50.02         | 1.37         | 20        |      |
| Vinyl chloride              | 72.92  | 2.0                                | 50      | 39.13                 | 67.6 | 70 - 127                                | 73.51         | 0.81         | 20        | S    |
| Xylenes, Total              | 144.4  | 15                                 | 150     | 0                     | 96.2 | 78 - 121                                | 148.6         | 2.91         | 20        |      |
| Surr: 1,2-Dichloroethane-d4 | 46.26  | 5.0                                | 50      | 0                     | 92.5 | 70 - 125                                | 43.91         | 5.21         | 20        |      |
| Surr: 4-Bromofluorobenzene  | 47.55  | 5.0                                | 50      | 0                     | 95.1 | 72 - 125                                | 51.03         | 7.05         | 20        |      |
| Surr: Dibromofluoromethane  | 46.2   | 5.0                                | 50      | 0                     | 92.4 | 71 - 125                                | 44.84         | 2.98         | 20        |      |
| Surr: Toluene-d8            | 46.79  | 5.0                                | 50      | 0                     | 93.6 | 75 - 125                                | 49.34         | 5.31         | 20        |      |

The following samples were analyzed in this batch:

|                   |               |               |               |
|-------------------|---------------|---------------|---------------|
| HS14080747-01     | HS14080747-02 | HS14080747-04 | HS14080747-05 |
| HS14080747-06-ott |               |               |               |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: R239820         |                         | Instrument: VOA1 |                | Method: SW8260                   |           |               |               |      |                |
|---------------------------|-------------------------|------------------|----------------|----------------------------------|-----------|---------------|---------------|------|----------------|
| MBLK                      | Sample ID: VBLKW-140825 | Units: ug/L      |                | Analysis Date: 25-Aug-2014 11:36 |           |               |               |      |                |
| Client ID:                | Run ID: VOA1_239820     |                  | SeqNo: 2980066 |                                  | PrepDate: |               | DF: 1         |      |                |
| Analyte                   | Result                  | PQL              | SPK Val        | SPK Ref Value                    | %REC      | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |
| 1,1,1-Trichloroethane     | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,1,2,2-Tetrachloroethane | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,1,2-Trichloroethane     | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,1-Dichloroethane        | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,1-Dichloroethene        | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,2,4-Trimethylbenzene    | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,2-Dibromoethane         | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,2-Dichloroethane        | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,2-Dichloropropane       | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,3,5-Trimethylbenzene    | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 2-Butanone                | ND                      | 10               |                |                                  |           |               |               |      |                |
| 2-Hexanone                | ND                      | 10               |                |                                  |           |               |               |      |                |
| 4-Isopropyltoluene        | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 4-Methyl-2-pentanone      | ND                      | 10               |                |                                  |           |               |               |      |                |
| Acetone                   | ND                      | 10               |                |                                  |           |               |               |      |                |
| Benzene                   | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Bromodichloromethane      | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Bromoform                 | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Bromomethane              | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Carbon disulfide          | ND                      | 10               |                |                                  |           |               |               |      |                |
| Carbon tetrachloride      | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Chlorobenzene             | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Chloroethane              | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Chloroform                | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Chloromethane             | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| cis-1,2-Dichloroethene    | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| cis-1,3-Dichloropropene   | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Dibromochloromethane      | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Ethylbenzene              | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Isopropylbenzene          | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| m,p-Xylene                | ND                      | 10               |                |                                  |           |               |               |      |                |
| Methyl tert-butyl ether   | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Methylene chloride        | ND                      | 10               |                |                                  |           |               |               |      |                |
| Naphthalene               | ND                      | 5.0              |                |                                  |           |               |               |      |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R239820           |                         | Instrument: VOA1 |         | Method: SW8260                   |                                                 |
|-----------------------------|-------------------------|------------------|---------|----------------------------------|-------------------------------------------------|
| <b>MBLK</b>                 | Sample ID: VBLKW-140825 | Units: ug/L      |         | Analysis Date: 25-Aug-2014 11:36 |                                                 |
| Client ID:                  | Run ID: VOA1_239820     | SeqNo: 2980066   |         | PrepDate:                        | DF: 1                                           |
| Analyte                     | Result                  | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| n-Butylbenzene              | ND                      | 5.0              |         |                                  |                                                 |
| n-Propylbenzene             | ND                      | 5.0              |         |                                  |                                                 |
| o-Xylene                    | ND                      | 5.0              |         |                                  |                                                 |
| sec-Butylbenzene            | ND                      | 5.0              |         |                                  |                                                 |
| Styrene                     | ND                      | 5.0              |         |                                  |                                                 |
| Tetrachloroethene           | ND                      | 5.0              |         |                                  |                                                 |
| Toluene                     | ND                      | 5.0              |         |                                  |                                                 |
| trans-1,2-Dichloroethene    | ND                      | 5.0              |         |                                  |                                                 |
| trans-1,3-Dichloropropene   | ND                      | 5.0              |         |                                  |                                                 |
| Trichloroethene             | ND                      | 5.0              |         |                                  |                                                 |
| Vinyl chloride              | ND                      | 2.0              |         |                                  |                                                 |
| Xylenes, Total              | ND                      | 15               |         |                                  |                                                 |
| Surr: 1,2-Dichloroethane-d4 | 45.58                   | 5.0              | 50      | 0 91.2                           | 70 - 125                                        |
| Surr: 4-Bromofluorobenzene  | 50.37                   | 5.0              | 50      | 0 101                            | 72 - 125                                        |
| Surr: Dibromofluoromethane  | 47.31                   | 5.0              | 50      | 0 94.6                           | 71 - 125                                        |
| Surr: Toluene-d8            | 48.59                   | 5.0              | 50      | 0 97.2                           | 75 - 125                                        |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R239820         |  | Instrument: VOA1        |     | Method: SW8260                   |                 |
|---------------------------|--|-------------------------|-----|----------------------------------|-----------------|
| LCS                       |  | Sample ID: VLCSW-140825 |     | Units: ug/L                      |                 |
| Client ID:                |  | Run ID: VOA1_239820     |     | SeqNo: 2980065                   |                 |
| Analyte                   |  | Result                  |     | Analysis Date: 25-Aug-2014 10:40 |                 |
|                           |  | PQL                     |     | PrepDate: DF: 1                  |                 |
|                           |  | SPK Val                 |     | SPK Ref Value %REC               |                 |
|                           |  |                         |     | Control Limit                    |                 |
|                           |  |                         |     | RPD Ref Value %RPD               |                 |
|                           |  |                         |     | RPD Limit Qual                   |                 |
| 1,1,1-Trichloroethane     |  | 48.77                   | 5.0 | 50                               | 0 97.5 80 - 120 |
| 1,1,2,2-Tetrachloroethane |  | 46.61                   | 5.0 | 50                               | 0 93.2 72 - 120 |
| 1,1,2-Trichloroethane     |  | 52.02                   | 5.0 | 50                               | 0 104 80 - 120  |
| 1,1-Dichloroethane        |  | 46.86                   | 5.0 | 50                               | 0 93.7 76 - 120 |
| 1,1-Dichloroethene        |  | 49.21                   | 5.0 | 50                               | 0 98.4 73 - 124 |
| 1,2,4-Trimethylbenzene    |  | 51.63                   | 5.0 | 50                               | 0 103 68 - 123  |
| 1,2-Dibromoethane         |  | 53.4                    | 5.0 | 50                               | 0 107 80 - 120  |
| 1,2-Dichloroethane        |  | 52                      | 5.0 | 50                               | 0 104 78 - 120  |
| 1,2-Dichloropropane       |  | 50.32                   | 5.0 | 50                               | 0 101 80 - 120  |
| 1,3,5-Trimethylbenzene    |  | 51.76                   | 5.0 | 50                               | 0 104 80 - 120  |
| 2-Butanone                |  | 83.54                   | 10  | 100                              | 0 83.5 58 - 132 |
| 2-Hexanone                |  | 90.98                   | 10  | 100                              | 0 91.0 61 - 130 |
| 4-Isopropyltoluene        |  | 53.67                   | 5.0 | 50                               | 0 107 79 - 120  |
| 4-Methyl-2-pentanone      |  | 92.33                   | 10  | 100                              | 0 92.3 65 - 127 |
| Acetone                   |  | 81.72                   | 10  | 100                              | 0 81.7 59 - 137 |
| Benzene                   |  | 51.98                   | 5.0 | 50                               | 0 104 73 - 121  |
| Bromodichloromethane      |  | 54.82                   | 5.0 | 50                               | 0 110 75 - 125  |
| Bromoform                 |  | 55.29                   | 5.0 | 50                               | 0 111 70 - 130  |
| Bromomethane              |  | 65.58                   | 5.0 | 50                               | 0 131 60 - 145  |
| Carbon disulfide          |  | 102.5                   | 10  | 100                              | 0 102 68 - 141  |
| Carbon tetrachloride      |  | 55.62                   | 5.0 | 50                               | 0 111 75 - 125  |
| Chlorobenzene             |  | 51.67                   | 5.0 | 50                               | 0 103 80 - 120  |
| Chloroethane              |  | 46.45                   | 5.0 | 50                               | 0 92.9 70 - 130 |
| Chloroform                |  | 49.11                   | 5.0 | 50                               | 0 98.2 70 - 130 |
| Chloromethane             |  | 41.63                   | 5.0 | 50                               | 0 83.3 67 - 123 |
| cis-1,2-Dichloroethene    |  | 49.26                   | 5.0 | 50                               | 0 98.5 78 - 120 |
| cis-1,3-Dichloropropene   |  | 54.49                   | 5.0 | 50                               | 0 109 80 - 120  |
| Dibromochloromethane      |  | 54.82                   | 5.0 | 50                               | 0 110 80 - 120  |
| Ethylbenzene              |  | 54.93                   | 5.0 | 50                               | 0 110 80 - 120  |
| Isopropylbenzene          |  | 52.75                   | 5.0 | 50                               | 0 106 75 - 130  |
| m,p-Xylene                |  | 106.8                   | 10  | 100                              | 0 107 78 - 121  |
| Methyl tert-butyl ether   |  | 47.1                    | 5.0 | 50                               | 0 94.2 70 - 125 |
| Methylene chloride        |  | 50.05                   | 10  | 50                               | 0 100 65 - 133  |
| Naphthalene               |  | 50.81                   | 5.0 | 50                               | 0 102 65 - 135  |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R239820           |  | Instrument: VOA1        |  | Method: SW8260                   |  |
|-----------------------------|--|-------------------------|--|----------------------------------|--|
| LCS                         |  | Sample ID: VLCSW-140825 |  | Units: ug/L                      |  |
| Client ID:                  |  | Run ID: VOA1_239820     |  | SeqNo: 2980065                   |  |
| Analyte                     |  | Result                  |  | Analysis Date: 25-Aug-2014 10:40 |  |
|                             |  | PQL                     |  | PrepDate: DF: 1                  |  |
|                             |  | SPK Val                 |  | SPK Ref Value %REC               |  |
|                             |  |                         |  | Control Limit                    |  |
|                             |  |                         |  | RPD Ref Value %RPD               |  |
|                             |  |                         |  | RPD Limit Qual                   |  |
| n-Butylbenzene              |  | 52.01                   |  | 77 - 120                         |  |
| n-Propylbenzene             |  | 49.53                   |  | 78 - 120                         |  |
| o-Xylene                    |  | 54.02                   |  | 80 - 120                         |  |
| sec-Butylbenzene            |  | 50.64                   |  | 78 - 120                         |  |
| Styrene                     |  | 56.29                   |  | 80 - 120                         |  |
| Tetrachloroethene           |  | 56.73                   |  | 74 - 125                         |  |
| Toluene                     |  | 51.57                   |  | 80 - 120                         |  |
| trans-1,2-Dichloroethene    |  | 48.43                   |  | 78 - 120                         |  |
| trans-1,3-Dichloropropene   |  | 54.92                   |  | 80 - 120                         |  |
| Trichloroethene             |  | 54.67                   |  | 80 - 120                         |  |
| Vinyl chloride              |  | 43.9                    |  | 70 - 127                         |  |
| Xylenes, Total              |  | 160.8                   |  | 80 - 120                         |  |
| Surr: 1,2-Dichloroethane-d4 |  | 42.93                   |  | 70 - 125                         |  |
| Surr: 4-Bromofluorobenzene  |  | 50.07                   |  | 72 - 125                         |  |
| Surr: Dibromofluoromethane  |  | 44.49                   |  | 71 - 125                         |  |
| Surr: Toluene-d8            |  | 48.49                   |  | 75 - 125                         |  |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R239820         |        | Instrument: VOA1           |         | Method: SW8260 |      |                                  |               |       |                |
|---------------------------|--------|----------------------------|---------|----------------|------|----------------------------------|---------------|-------|----------------|
| MS                        |        | Sample ID: HS14080747-03MS |         | Units: ug/L    |      | Analysis Date: 25-Aug-2014 13:31 |               |       |                |
| Client ID: MW-5           |        | Run ID: VOA1_239820        |         | SeqNo: 2980070 |      | PrepDate:                        |               | DF: 1 |                |
| Analyte                   | Result | PQL                        | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit Qual |
| 1,1,1-Trichloroethane     | 44.07  | 5.0                        | 50      | 0              | 88.1 | 80 - 120                         |               |       |                |
| 1,1,2,2-Tetrachloroethane | 41.35  | 5.0                        | 50      | 0              | 82.7 | 72 - 120                         |               |       |                |
| 1,1,2-Trichloroethane     | 46.43  | 5.0                        | 50      | 0              | 92.9 | 80 - 120                         |               |       |                |
| 1,1-Dichloroethane        | 43.7   | 5.0                        | 50      | 0              | 87.4 | 76 - 120                         |               |       |                |
| 1,1-Dichloroethene        | 41.8   | 5.0                        | 50      | 0              | 83.6 | 73 - 124                         |               |       |                |
| 1,2,4-Trimethylbenzene    | 40.66  | 5.0                        | 50      | 0              | 81.3 | 68 - 123                         |               |       |                |
| 1,2-Dibromoethane         | 47.2   | 5.0                        | 50      | 0              | 94.4 | 80 - 120                         |               |       |                |
| 1,2-Dichloroethane        | 46.23  | 5.0                        | 50      | 0              | 92.5 | 78 - 120                         |               |       |                |
| 1,2-Dichloropropane       | 44.95  | 5.0                        | 50      | 0              | 89.9 | 80 - 120                         |               |       |                |
| 1,3,5-Trimethylbenzene    | 42.03  | 5.0                        | 50      | 0              | 84.1 | 80 - 120                         |               |       |                |
| 2-Butanone                | 80.17  | 10                         | 100     | 0              | 80.2 | 58 - 132                         |               |       |                |
| 2-Hexanone                | 84.06  | 10                         | 100     | 0              | 84.1 | 61 - 130                         |               |       |                |
| 4-Isopropyltoluene        | 41.77  | 5.0                        | 50      | 0              | 83.5 | 79 - 120                         |               |       |                |
| 4-Methyl-2-pentanone      | 85.27  | 10                         | 100     | 0              | 85.3 | 65 - 127                         |               |       |                |
| Acetone                   | 80.4   | 10                         | 100     | 0              | 80.4 | 59 - 137                         |               |       |                |
| Benzene                   | 45.83  | 5.0                        | 50      | 0              | 91.7 | 73 - 121                         |               |       |                |
| Bromodichloromethane      | 49.11  | 5.0                        | 50      | 0              | 98.2 | 75 - 125                         |               |       |                |
| Bromoform                 | 49.5   | 5.0                        | 50      | 0              | 99.0 | 70 - 130                         |               |       |                |
| Bromomethane              | 47.49  | 5.0                        | 50      | 0              | 95.0 | 60 - 145                         |               |       |                |
| Carbon disulfide          | 85.04  | 10                         | 100     | 0              | 85.0 | 68 - 141                         |               |       |                |
| Carbon tetrachloride      | 44.69  | 5.0                        | 50      | 0              | 89.4 | 75 - 125                         |               |       |                |
| Chlorobenzene             | 45.77  | 5.0                        | 50      | 0              | 91.5 | 80 - 120                         |               |       |                |
| Chloroethane              | 41.94  | 5.0                        | 50      | 0              | 83.9 | 70 - 130                         |               |       |                |
| Chloroform                | 46.79  | 5.0                        | 50      | 0              | 93.6 | 70 - 130                         |               |       |                |
| Chloromethane             | 36.65  | 5.0                        | 50      | 0              | 73.3 | 67 - 123                         |               |       |                |
| cis-1,2-Dichloroethene    | 44.01  | 5.0                        | 50      | 0              | 88.0 | 78 - 120                         |               |       |                |
| cis-1,3-Dichloropropene   | 48.14  | 5.0                        | 50      | 0              | 96.3 | 80 - 120                         |               |       |                |
| Dibromochloromethane      | 48.26  | 5.0                        | 50      | 0              | 96.5 | 80 - 120                         |               |       |                |
| Ethylbenzene              | 45.51  | 5.0                        | 50      | 0              | 91.0 | 80 - 120                         |               |       |                |
| Isopropylbenzene          | 43.84  | 5.0                        | 50      | 0              | 87.7 | 75 - 130                         |               |       |                |
| m,p-Xylene                | 92.38  | 10                         | 100     | 0              | 92.4 | 78 - 121                         |               |       |                |
| Methyl tert-butyl ether   | 47.74  | 5.0                        | 50      | 0              | 95.5 | 70 - 125                         |               |       |                |
| Methylene chloride        | 47.14  | 10                         | 50      | 0              | 94.3 | 65 - 133                         |               |       |                |
| Naphthalene               | 44.78  | 5.0                        | 50      | 0              | 89.6 | 65 - 135                         |               |       |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R239820           |        | Instrument: VOA1           |         | Method: SW8260 |                |
|-----------------------------|--------|----------------------------|---------|----------------|----------------|
| MS                          |        | Sample ID: HS14080747-03MS |         | Units: ug/L    |                |
| Client ID: MW-5             |        | Run ID: VOA1_239820        |         | SeqNo: 2980070 |                |
|                             |        |                            |         | PrepDate:      |                |
|                             |        |                            |         | DF: 1          |                |
| Analyte                     | Result | PQL                        | SPK Val | SPK Ref Value  | %REC           |
|                             |        |                            |         | Control Limit  | RPD Ref Value  |
|                             |        |                            |         |                | %RPD           |
|                             |        |                            |         |                | RPD Limit Qual |
| n-Butylbenzene              | 41.9   | 5.0                        | 50      | 0              | 83.8           |
| n-Propylbenzene             | 40.16  | 5.0                        | 50      | 0              | 80.3           |
| o-Xylene                    | 43.4   | 5.0                        | 50      | 0              | 86.8           |
| sec-Butylbenzene            | 40.63  | 5.0                        | 50      | 0              | 81.3           |
| Styrene                     | 47.57  | 5.0                        | 50      | 0              | 95.1           |
| Tetrachloroethene           | 43.51  | 5.0                        | 50      | 0              | 87.0           |
| Toluene                     | 44.63  | 5.0                        | 50      | 0              | 89.3           |
| trans-1,2-Dichloroethene    | 42.94  | 5.0                        | 50      | 0              | 85.9           |
| trans-1,3-Dichloropropene   | 48.74  | 5.0                        | 50      | 0              | 97.5           |
| Trichloroethene             | 46.75  | 5.0                        | 50      | 0              | 93.5           |
| Vinyl chloride              | 39.47  | 2.0                        | 50      | 0              | 78.9           |
| Xylenes, Total              | 135.8  | 15                         | 150     | 0              | 90.5           |
| Surr: 1,2-Dichloroethane-d4 | 47.37  | 5.0                        | 50      | 0              | 94.7           |
| Surr: 4-Bromofluorobenzene  | 50.26  | 5.0                        | 50      | 0              | 101            |
| Surr: Dibromofluoromethane  | 49.51  | 5.0                        | 50      | 0              | 99.0           |
| Surr: Toluene-d8            | 48.45  | 5.0                        | 50      | 0              | 96.9           |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R239820         |        | Instrument: VOA1            |         | Method: SW8260 |      |                                  |               |       |           |      |
|---------------------------|--------|-----------------------------|---------|----------------|------|----------------------------------|---------------|-------|-----------|------|
| <b>MSD</b>                |        | Sample ID: HS14080747-03MSD |         | Units: ug/L    |      | Analysis Date: 25-Aug-2014 14:01 |               |       |           |      |
| Client ID: MW-5           |        | Run ID: VOA1_239820         |         | SeqNo: 2980071 |      | PrepDate:                        |               | DF: 1 |           |      |
| Analyte                   | Result | PQL                         | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit | Qual |
| 1,1,1-Trichloroethane     | 43.03  | 5.0                         | 50      | 0              | 86.1 | 80 - 120                         | 44.07         | 2.4   | 20        |      |
| 1,1,2,2-Tetrachloroethane | 37.98  | 5.0                         | 50      | 0              | 76.0 | 72 - 120                         | 41.35         | 8.5   | 20        |      |
| 1,1,2-Trichloroethane     | 43.21  | 5.0                         | 50      | 0              | 86.4 | 80 - 120                         | 46.43         | 7.17  | 20        |      |
| 1,1-Dichloroethane        | 43.98  | 5.0                         | 50      | 0              | 88.0 | 76 - 120                         | 43.7          | 0.627 | 20        |      |
| 1,1-Dichloroethene        | 40.58  | 5.0                         | 50      | 0              | 81.2 | 73 - 124                         | 41.8          | 2.95  | 20        |      |
| 1,2,4-Trimethylbenzene    | 37.5   | 5.0                         | 50      | 0              | 75.0 | 68 - 123                         | 40.66         | 8.08  | 20        |      |
| 1,2-Dibromoethane         | 43.68  | 5.0                         | 50      | 0              | 87.4 | 80 - 120                         | 47.2          | 7.74  | 20        |      |
| 1,2-Dichloroethane        | 44.92  | 5.0                         | 50      | 0              | 89.8 | 78 - 120                         | 46.23         | 2.87  | 20        |      |
| 1,2-Dichloropropane       | 44.25  | 5.0                         | 50      | 0              | 88.5 | 80 - 120                         | 44.95         | 1.58  | 20        |      |
| 1,3,5-Trimethylbenzene    | 37.32  | 5.0                         | 50      | 0              | 74.6 | 80 - 120                         | 42.03         | 11.9  | 20        | S    |
| 2-Butanone                | 83.2   | 10                          | 100     | 0              | 83.2 | 58 - 132                         | 80.17         | 3.7   | 20        |      |
| 2-Hexanone                | 76.95  | 10                          | 100     | 0              | 76.9 | 61 - 130                         | 84.06         | 8.83  | 20        |      |
| 4-Isopropyltoluene        | 36.43  | 5.0                         | 50      | 0              | 72.9 | 79 - 120                         | 41.77         | 13.7  | 20        | S    |
| 4-Methyl-2-pentanone      | 79.79  | 10                          | 100     | 0              | 79.8 | 65 - 127                         | 85.27         | 6.64  | 20        |      |
| Acetone                   | 84.6   | 10                          | 100     | 0              | 84.6 | 59 - 137                         | 80.4          | 5.09  | 20        |      |
| Benzene                   | 43.1   | 5.0                         | 50      | 0              | 86.2 | 73 - 121                         | 45.83         | 6.12  | 20        |      |
| Bromodichloromethane      | 47.6   | 5.0                         | 50      | 0              | 95.2 | 75 - 125                         | 49.11         | 3.13  | 20        |      |
| Bromoform                 | 46.4   | 5.0                         | 50      | 0              | 92.8 | 70 - 130                         | 49.5          | 6.48  | 20        |      |
| Bromomethane              | 56.35  | 5.0                         | 50      | 0              | 113  | 60 - 145                         | 47.49         | 17.1  | 20        |      |
| Carbon disulfide          | 83.47  | 10                          | 100     | 0              | 83.5 | 68 - 141                         | 85.04         | 1.87  | 20        |      |
| Carbon tetrachloride      | 38.94  | 5.0                         | 50      | 0              | 77.9 | 75 - 125                         | 44.69         | 13.8  | 20        |      |
| Chlorobenzene             | 42.41  | 5.0                         | 50      | 0              | 84.8 | 80 - 120                         | 45.77         | 7.62  | 20        |      |
| Chloroethane              | 40.92  | 5.0                         | 50      | 0              | 81.8 | 76 - 121                         | 41.94         | 2.45  | 20        |      |
| Chloroform                | 47.04  | 5.0                         | 50      | 0              | 94.1 | 70 - 130                         | 46.79         | 0.531 | 20        |      |
| Chloromethane             | 35.55  | 5.0                         | 50      | 0              | 71.1 | 67 - 123                         | 36.65         | 3.05  | 20        |      |
| cis-1,2-Dichloroethene    | 47.37  | 5.0                         | 50      | 0              | 94.7 | 78 - 120                         | 44.01         | 7.35  | 20        |      |
| cis-1,3-Dichloropropene   | 45.92  | 5.0                         | 50      | 0              | 91.8 | 80 - 120                         | 48.14         | 4.72  | 20        |      |
| Dibromochloromethane      | 45.32  | 5.0                         | 50      | 0              | 90.6 | 80 - 120                         | 48.26         | 6.27  | 20        |      |
| Ethylbenzene              | 40.71  | 5.0                         | 50      | 0              | 81.4 | 80 - 120                         | 45.51         | 11.1  | 20        |      |
| Isopropylbenzene          | 38.2   | 5.0                         | 50      | 0              | 76.4 | 75 - 130                         | 43.84         | 13.8  | 20        |      |
| m,p-Xylene                | 81.33  | 10                          | 100     | 0              | 81.3 | 78 - 121                         | 92.38         | 12.7  | 20        |      |
| Methyl tert-butyl ether   | 49.79  | 5.0                         | 50      | 0              | 99.6 | 70 - 125                         | 47.74         | 4.22  | 20        |      |
| Methylene chloride        | 48.16  | 10                          | 50      | 0              | 96.3 | 65 - 133                         | 47.14         | 2.14  | 20        |      |
| Naphthalene               | 43.11  | 5.0                         | 50      | 0              | 86.2 | 65 - 135                         | 44.78         | 3.81  | 20        |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R239820                                 |        | Instrument: VOA1            |         | Method: SW8260 |      |                                  |               |               |           |      |  |
|---------------------------------------------------|--------|-----------------------------|---------|----------------|------|----------------------------------|---------------|---------------|-----------|------|--|
| MSD                                               |        | Sample ID: HS14080747-03MSD |         | Units: ug/L    |      | Analysis Date: 25-Aug-2014 14:01 |               |               |           |      |  |
| Client ID: MW-5                                   |        | Run ID: VOA1_239820         |         | SeqNo: 2980071 |      | PrepDate:                        |               | DF: 1         |           |      |  |
| Analyte                                           | Result | PQL                         | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD          | RPD Limit | Qual |  |
| n-Butylbenzene                                    | 35.19  | 5.0                         | 50      | 0              | 70.4 | 77 - 120                         | 41.9          | 17.4          | 20        | S    |  |
| n-Propylbenzene                                   | 35.52  | 5.0                         | 50      | 0              | 71.0 | 78 - 120                         | 40.16         | 12.3          | 20        | S    |  |
| o-Xylene                                          | 41.32  | 5.0                         | 50      | 0              | 82.6 | 80 - 120                         | 43.4          | 4.92          | 20        |      |  |
| sec-Butylbenzene                                  | 34.44  | 5.0                         | 50      | 0              | 68.9 | 78 - 120                         | 40.63         | 16.5          | 20        | S    |  |
| Styrene                                           | 43.34  | 5.0                         | 50      | 0              | 86.7 | 80 - 120                         | 47.57         | 9.31          | 20        |      |  |
| Tetrachloroethene                                 | 38.72  | 5.0                         | 50      | 0              | 77.4 | 74 - 125                         | 43.51         | 11.7          | 20        |      |  |
| Toluene                                           | 40.67  | 5.0                         | 50      | 0              | 81.3 | 80 - 120                         | 44.63         | 9.27          | 20        |      |  |
| trans-1,2-Dichloroethene                          | 44.89  | 5.0                         | 50      | 0              | 89.8 | 78 - 120                         | 42.94         | 4.44          | 20        |      |  |
| trans-1,3-Dichloropropene                         | 47.21  | 5.0                         | 50      | 0              | 94.4 | 80 - 120                         | 48.74         | 3.19          | 20        |      |  |
| Trichloroethene                                   | 42.98  | 5.0                         | 50      | 0              | 86.0 | 80 - 120                         | 46.75         | 8.4           | 20        |      |  |
| Vinyl chloride                                    | 37.43  | 2.0                         | 50      | 0              | 74.9 | 70 - 127                         | 39.47         | 5.32          | 20        |      |  |
| Xylenes, Total                                    | 122.7  | 15                          | 150     | 0              | 81.8 | 78 - 121                         | 135.8         | 10.2          | 20        |      |  |
| Surr: 1,2-Dichloroethane-d4                       | 50.1   | 5.0                         | 50      | 0              | 100  | 70 - 125                         | 47.37         | 5.6           | 20        |      |  |
| Surr: 4-Bromofluorobenzene                        | 50.47  | 5.0                         | 50      | 0              | 101  | 72 - 125                         | 50.26         | 0.413         | 20        |      |  |
| Surr: Dibromofluoromethane                        | 52.12  | 5.0                         | 50      | 0              | 104  | 71 - 125                         | 49.51         | 5.15          | 20        |      |  |
| Surr: Toluene-d8                                  | 47.38  | 5.0                         | 50      | 0              | 94.8 | 75 - 125                         | 48.45         | 2.25          | 20        |      |  |
| The following samples were anayzed in this batch: |        |                             |         |                |      |                                  |               |               |           |      |  |
|                                                   |        | HS14080747-03               |         | HS14080747-06  |      | HS14080747-07                    |               | HS14080747-08 |           |      |  |
|                                                   |        | HS14080747-09               |         | HS14080747-10  |      | HS14080747-11                    |               | HS14080747-12 |           |      |  |
|                                                   |        | HS14080747-13               |         | HS14080747-14  |      | HS14080747-15                    |               |               |           |      |  |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240113         |                         | Instrument: VOA1 |         | Method: SW8260                   |      |               |               |      |                |
|---------------------------|-------------------------|------------------|---------|----------------------------------|------|---------------|---------------|------|----------------|
| <b>MBLK</b>               | Sample ID: VBLKW-140829 | Units: ug/L      |         | Analysis Date: 29-Aug-2014 12:05 |      |               |               |      |                |
| Client ID:                | Run ID: VOA1_240113     | SeqNo: 2986545   |         | PrepDate:                        |      | DF: 1         |               |      |                |
| Analyte                   | Result                  | PQL              | SPK Val | SPK Ref Value                    | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |
| 1,1,1-Trichloroethane     | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,1,2,2-Tetrachloroethane | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,1,2-Trichloroethane     | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,1-Dichloroethane        | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,1-Dichloroethene        | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,2,4-Trimethylbenzene    | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,2-Dibromoethane         | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,2-Dichloroethane        | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,2-Dichloropropane       | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,3,5-Trimethylbenzene    | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 2-Butanone                | ND                      | 10               |         |                                  |      |               |               |      |                |
| 2-Hexanone                | ND                      | 10               |         |                                  |      |               |               |      |                |
| 4-Isopropyltoluene        | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 4-Methyl-2-pentanone      | ND                      | 10               |         |                                  |      |               |               |      |                |
| Acetone                   | ND                      | 10               |         |                                  |      |               |               |      |                |
| Benzene                   | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Bromodichloromethane      | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Bromoform                 | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Bromomethane              | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Carbon disulfide          | ND                      | 10               |         |                                  |      |               |               |      |                |
| Carbon tetrachloride      | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Chlorobenzene             | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Chloroethane              | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Chloroform                | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Chloromethane             | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| cis-1,2-Dichloroethene    | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| cis-1,3-Dichloropropene   | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Dibromochloromethane      | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Ethylbenzene              | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Isopropylbenzene          | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| m,p-Xylene                | ND                      | 10               |         |                                  |      |               |               |      |                |
| Methyl tert-butyl ether   | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Methylene chloride        | ND                      | 10               |         |                                  |      |               |               |      |                |
| Naphthalene               | ND                      | 5.0              |         |                                  |      |               |               |      |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240113           |                         | Instrument: VOA1 |         | Method: SW8260                   |                                                 |
|-----------------------------|-------------------------|------------------|---------|----------------------------------|-------------------------------------------------|
| <b>MBLK</b>                 | Sample ID: VBLKW-140829 | Units: ug/L      |         | Analysis Date: 29-Aug-2014 12:05 |                                                 |
| Client ID:                  | Run ID: VOA1_240113     | SeqNo: 2986545   |         | PrepDate:                        | DF: 1                                           |
| Analyte                     | Result                  | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| n-Butylbenzene              | ND                      | 5.0              |         |                                  |                                                 |
| n-Propylbenzene             | ND                      | 5.0              |         |                                  |                                                 |
| o-Xylene                    | ND                      | 5.0              |         |                                  |                                                 |
| sec-Butylbenzene            | ND                      | 5.0              |         |                                  |                                                 |
| Styrene                     | ND                      | 5.0              |         |                                  |                                                 |
| Tetrachloroethene           | ND                      | 5.0              |         |                                  |                                                 |
| Toluene                     | ND                      | 5.0              |         |                                  |                                                 |
| trans-1,2-Dichloroethene    | ND                      | 5.0              |         |                                  |                                                 |
| trans-1,3-Dichloropropene   | ND                      | 5.0              |         |                                  |                                                 |
| Trichloroethene             | ND                      | 5.0              |         |                                  |                                                 |
| Vinyl chloride              | ND                      | 2.0              |         |                                  |                                                 |
| Xylenes, Total              | ND                      | 15               |         |                                  |                                                 |
| Surr: 1,2-Dichloroethane-d4 | 48.46                   | 5.0              | 50      | 0 96.9                           | 70 - 125                                        |
| Surr: 4-Bromofluorobenzene  | 51.92                   | 5.0              | 50      | 0 104                            | 72 - 125                                        |
| Surr: Dibromofluoromethane  | 48.18                   | 5.0              | 50      | 0 96.4                           | 71 - 125                                        |
| Surr: Toluene-d8            | 52.74                   | 5.0              | 50      | 0 105                            | 75 - 125                                        |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: R240113         |  | Instrument: VOA1        |     | Method: SW8260                   |                 |
|---------------------------|--|-------------------------|-----|----------------------------------|-----------------|
| LCS                       |  | Sample ID: VLCSW-140829 |     | Units: ug/L                      |                 |
| Client ID:                |  | Run ID: VOA1_240113     |     | SeqNo: 2986544                   |                 |
| Analyte                   |  | Result                  |     | Analysis Date: 29-Aug-2014 11:09 |                 |
|                           |  | PQL                     |     | PrepDate: DF: 1                  |                 |
|                           |  | SPK Val                 |     | SPK Ref Value %REC               |                 |
|                           |  |                         |     | Control Limit                    |                 |
|                           |  |                         |     | RPD Ref Value %RPD               |                 |
|                           |  |                         |     | RPD Limit Qual                   |                 |
| 1,1,1-Trichloroethane     |  | 44.73                   | 5.0 | 50                               | 0 89.5 80 - 120 |
| 1,1,2,2-Tetrachloroethane |  | 51.25                   | 5.0 | 50                               | 0 103 72 - 120  |
| 1,1,2-Trichloroethane     |  | 46.29                   | 5.0 | 50                               | 0 92.6 80 - 120 |
| 1,1-Dichloroethane        |  | 43.98                   | 5.0 | 50                               | 0 88.0 76 - 120 |
| 1,1-Dichloroethene        |  | 48.37                   | 5.0 | 50                               | 0 96.7 73 - 124 |
| 1,2,4-Trimethylbenzene    |  | 47.05                   | 5.0 | 50                               | 0 94.1 68 - 123 |
| 1,2-Dibromoethane         |  | 45.21                   | 5.0 | 50                               | 0 90.4 80 - 120 |
| 1,2-Dichloroethane        |  | 43.56                   | 5.0 | 50                               | 0 87.1 78 - 120 |
| 1,2-Dichloropropane       |  | 55.44                   | 5.0 | 50                               | 0 111 80 - 120  |
| 1,3,5-Trimethylbenzene    |  | 50.02                   | 5.0 | 50                               | 0 100 80 - 120  |
| 2-Butanone                |  | 82                      | 10  | 100                              | 0 82.0 58 - 132 |
| 2-Hexanone                |  | 87.39                   | 10  | 100                              | 0 87.4 61 - 130 |
| 4-Isopropyltoluene        |  | 50.03                   | 5.0 | 50                               | 0 100 79 - 120  |
| 4-Methyl-2-pentanone      |  | 85.32                   | 10  | 100                              | 0 85.3 65 - 127 |
| Acetone                   |  | 94.11                   | 10  | 100                              | 0 94.1 59 - 137 |
| Benzene                   |  | 46.02                   | 5.0 | 50                               | 0 92.0 73 - 121 |
| Bromodichloromethane      |  | 45.04                   | 5.0 | 50                               | 0 90.1 75 - 125 |
| Bromoform                 |  | 49.77                   | 5.0 | 50                               | 0 99.5 70 - 130 |
| Bromomethane              |  | 43.15                   | 5.0 | 50                               | 0 86.3 60 - 145 |
| Carbon disulfide          |  | 114.5                   | 10  | 100                              | 0 114 68 - 141  |
| Carbon tetrachloride      |  | 48.25                   | 5.0 | 50                               | 0 96.5 75 - 125 |
| Chlorobenzene             |  | 47.79                   | 5.0 | 50                               | 0 95.6 80 - 120 |
| Chloroethane              |  | 47.6                    | 5.0 | 50                               | 0 95.2 70 - 130 |
| Chloroform                |  | 44.34                   | 5.0 | 50                               | 0 88.7 70 - 130 |
| Chloromethane             |  | 40.94                   | 5.0 | 50                               | 0 81.9 67 - 123 |
| cis-1,2-Dichloroethene    |  | 47.59                   | 5.0 | 50                               | 0 95.2 78 - 120 |
| cis-1,3-Dichloropropene   |  | 48.86                   | 5.0 | 50                               | 0 97.7 80 - 120 |
| Dibromochloromethane      |  | 49.68                   | 5.0 | 50                               | 0 99.4 80 - 120 |
| Ethylbenzene              |  | 49.62                   | 5.0 | 50                               | 0 99.2 80 - 120 |
| Isopropylbenzene          |  | 49.07                   | 5.0 | 50                               | 0 98.1 75 - 130 |
| m,p-Xylene                |  | 98.28                   | 10  | 100                              | 0 98.3 78 - 121 |
| Methyl tert-butyl ether   |  | 49.42                   | 5.0 | 50                               | 0 98.8 70 - 125 |
| Methylene chloride        |  | 49.27                   | 10  | 50                               | 0 98.5 65 - 133 |
| Naphthalene               |  | 51.92                   | 5.0 | 50                               | 0 104 65 - 135  |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240113           |  | Instrument: VOA1        |  | Method: SW8260                   |  |
|-----------------------------|--|-------------------------|--|----------------------------------|--|
| LCS                         |  | Sample ID: VLCSW-140829 |  | Units: ug/L                      |  |
| Client ID:                  |  | Run ID: VOA1_240113     |  | SeqNo: 2986544                   |  |
| Analyte                     |  | Result                  |  | Analysis Date: 29-Aug-2014 11:09 |  |
|                             |  | PQL                     |  | PrepDate: DF: 1                  |  |
|                             |  | SPK Val                 |  | SPK Ref Value %REC               |  |
|                             |  |                         |  | Control Limit                    |  |
|                             |  |                         |  | RPD Ref Value %RPD               |  |
|                             |  |                         |  | RPD Limit Qual                   |  |
| n-Butylbenzene              |  | 48.38                   |  | 50 0 96.8 77 - 120               |  |
| n-Propylbenzene             |  | 48.74                   |  | 50 0 97.5 78 - 120               |  |
| o-Xylene                    |  | 47.7                    |  | 50 0 95.4 80 - 120               |  |
| sec-Butylbenzene            |  | 50.15                   |  | 50 0 100 78 - 120                |  |
| Styrene                     |  | 50.21                   |  | 50 0 100 80 - 120                |  |
| Tetrachloroethene           |  | 50.92                   |  | 50 0 102 74 - 125                |  |
| Toluene                     |  | 47.64                   |  | 50 0 95.3 80 - 120               |  |
| trans-1,2-Dichloroethene    |  | 45.82                   |  | 50 0 91.6 78 - 120               |  |
| trans-1,3-Dichloropropene   |  | 51.89                   |  | 50 0 104 80 - 120                |  |
| Trichloroethene             |  | 48.48                   |  | 50 0 97.0 80 - 120               |  |
| Vinyl chloride              |  | 44.06                   |  | 50 0 88.1 70 - 127               |  |
| Xylenes, Total              |  | 146                     |  | 150 0 97.3 80 - 120              |  |
| Surr: 1,2-Dichloroethane-d4 |  | 44.69                   |  | 50 0 89.4 70 - 125               |  |
| Surr: 4-Bromofluorobenzene  |  | 51.67                   |  | 50 0 103 72 - 125                |  |
| Surr: Dibromofluoromethane  |  | 44.97                   |  | 50 0 89.9 71 - 125               |  |
| Surr: Toluene-d8            |  | 48.78                   |  | 50 0 97.6 75 - 125               |  |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: R240113         |                            | Instrument: VOA1 |         | Method: SW8260                   |                                                 |
|---------------------------|----------------------------|------------------|---------|----------------------------------|-------------------------------------------------|
| MS                        | Sample ID: HS14080845-11MS | Units: ug/L      |         | Analysis Date: 29-Aug-2014 15:47 |                                                 |
| Client ID:                | Run ID: VOA1_240113        | SeqNo: 2986550   |         | PrepDate:                        | DF: 1                                           |
| Analyte                   | Result                     | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| 1,1,1-Trichloroethane     | 45.66                      | 5.0              | 50      | 0 91.3                           | 80 - 120                                        |
| 1,1,2,2-Tetrachloroethane | 56.27                      | 5.0              | 50      | 0 113                            | 72 - 120                                        |
| 1,1,2-Trichloroethane     | 46.53                      | 5.0              | 50      | 0 93.1                           | 80 - 120                                        |
| 1,1-Dichloroethane        | 44.08                      | 5.0              | 50      | 0 88.2                           | 76 - 120                                        |
| 1,1-Dichloroethene        | 50.06                      | 5.0              | 50      | 0 100                            | 73 - 124                                        |
| 1,2,4-Trimethylbenzene    | 44.2                       | 5.0              | 50      | 0 88.4                           | 68 - 123                                        |
| 1,2-Dibromoethane         | 47.81                      | 5.0              | 50      | 0 95.6                           | 80 - 120                                        |
| 1,2-Dichloroethane        | 48.1                       | 5.0              | 50      | 0 96.2                           | 78 - 120                                        |
| 1,2-Dichloropropane       | 59.88                      | 5.0              | 50      | 0 120                            | 80 - 120                                        |
| 1,3,5-Trimethylbenzene    | 46.64                      | 5.0              | 50      | 0 93.3                           | 80 - 120                                        |
| 2-Butanone                | 84.83                      | 10               | 100     | 0 84.8                           | 58 - 132                                        |
| 2-Hexanone                | 93.66                      | 10               | 100     | 0 93.7                           | 61 - 130                                        |
| 4-Isopropyltoluene        | 46.8                       | 5.0              | 50      | 0 93.6                           | 79 - 120                                        |
| 4-Methyl-2-pentanone      | 92.41                      | 10               | 100     | 0 92.4                           | 65 - 127                                        |
| Acetone                   | 91.76                      | 10               | 100     | 0 91.8                           | 59 - 137                                        |
| Benzene                   | 47.2                       | 5.0              | 50      | 0 94.4                           | 73 - 121                                        |
| Bromodichloromethane      | 49.86                      | 5.0              | 50      | 0 99.7                           | 75 - 125                                        |
| Bromoform                 | 52.47                      | 5.0              | 50      | 0 105                            | 70 - 130                                        |
| Bromomethane              | 47.88                      | 5.0              | 50      | 0 95.8                           | 60 - 145                                        |
| Carbon disulfide          | 103.8                      | 10               | 100     | 0 104                            | 68 - 141                                        |
| Carbon tetrachloride      | 49.79                      | 5.0              | 50      | 0 99.6                           | 75 - 125                                        |
| Chlorobenzene             | 46.17                      | 5.0              | 50      | 0 92.3                           | 80 - 120                                        |
| Chloroethane              | 41.22                      | 5.0              | 50      | 0 82.4                           | 70 - 130                                        |
| Chloroform                | 46.18                      | 5.0              | 50      | 0 92.4                           | 70 - 130                                        |
| Chloromethane             | 29.19                      | 5.0              | 50      | 0 58.4                           | 67 - 123 S                                      |
| cis-1,2-Dichloroethene    | 48.38                      | 5.0              | 50      | 0 96.8                           | 78 - 120                                        |
| cis-1,3-Dichloropropene   | 49.89                      | 5.0              | 50      | 0 99.8                           | 80 - 120                                        |
| Dibromochloromethane      | 49.82                      | 5.0              | 50      | 0 99.6                           | 80 - 120                                        |
| Ethylbenzene              | 49.07                      | 5.0              | 50      | 0 98.1                           | 80 - 120                                        |
| Isopropylbenzene          | 46.94                      | 5.0              | 50      | 0 93.9                           | 75 - 130                                        |
| m,p-Xylene                | 98.55                      | 10               | 100     | 0 98.6                           | 78 - 121                                        |
| Methyl tert-butyl ether   | 50.99                      | 5.0              | 50      | 0 102                            | 70 - 125                                        |
| Methylene chloride        | 53.48                      | 10               | 50      | 0 107                            | 65 - 133                                        |
| Naphthalene               | 52.16                      | 5.0              | 50      | 0 104                            | 65 - 135                                        |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240113           |                            | Instrument: VOA1 |         | Method: SW8260                   |                                                 |
|-----------------------------|----------------------------|------------------|---------|----------------------------------|-------------------------------------------------|
| MS                          | Sample ID: HS14080845-11MS | Units: ug/L      |         | Analysis Date: 29-Aug-2014 15:47 |                                                 |
| Client ID:                  | Run ID: VOA1_240113        | SeqNo: 2986550   |         | PrepDate:                        | DF: 1                                           |
| Analyte                     | Result                     | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| n-Butylbenzene              | 45.6                       | 5.0              | 50      | 0 91.2                           | 77 - 120                                        |
| n-Propylbenzene             | 47.09                      | 5.0              | 50      | 0 94.2                           | 78 - 120                                        |
| o-Xylene                    | 47.48                      | 5.0              | 50      | 0 95.0                           | 80 - 120                                        |
| sec-Butylbenzene            | 45.71                      | 5.0              | 50      | 0 91.4                           | 78 - 120                                        |
| Styrene                     | 49.86                      | 5.0              | 50      | 0 99.7                           | 80 - 120                                        |
| Tetrachloroethene           | 49.35                      | 5.0              | 50      | 0 98.7                           | 74 - 125                                        |
| Toluene                     | 45.56                      | 5.0              | 50      | 0 91.1                           | 80 - 120                                        |
| trans-1,2-Dichloroethene    | 47.42                      | 5.0              | 50      | 0 94.8                           | 78 - 120                                        |
| trans-1,3-Dichloropropene   | 53.19                      | 5.0              | 50      | 0 106                            | 80 - 120                                        |
| Trichloroethene             | 52.35                      | 5.0              | 50      | 0 105                            | 80 - 120                                        |
| Vinyl chloride              | 33.79                      | 2.0              | 50      | 0 67.6                           | 70 - 127 S                                      |
| Xylenes, Total              | 146                        | 15               | 150     | 0 97.4                           | 80 - 120                                        |
| Surr: 1,2-Dichloroethane-d4 | 47.13                      | 5.0              | 50      | 0 94.3                           | 70 - 125                                        |
| Surr: 4-Bromofluorobenzene  | 50.82                      | 5.0              | 50      | 0 102                            | 72 - 125                                        |
| Surr: Dibromofluoromethane  | 47.49                      | 5.0              | 50      | 0 95.0                           | 71 - 125                                        |
| Surr: Toluene-d8            | 49.25                      | 5.0              | 50      | 0 98.5                           | 75 - 125                                        |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240113         |        | Instrument: VOA1            |         | Method: SW8260 |      |                                  |               |       |           |      |
|---------------------------|--------|-----------------------------|---------|----------------|------|----------------------------------|---------------|-------|-----------|------|
| <b>MSD</b>                |        | Sample ID: HS14080845-11MSD |         | Units: ug/L    |      | Analysis Date: 29-Aug-2014 16:14 |               |       |           |      |
| Client ID:                |        | Run ID: VOA1_240113         |         | SeqNo: 2986551 |      | PrepDate:                        |               | DF: 1 |           |      |
| Analyte                   | Result | PQL                         | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit | Qual |
| 1,1,1-Trichloroethane     | 47.14  | 5.0                         | 50      | 0              | 94.3 | 80 - 120                         | 45.66         | 3.19  | 20        |      |
| 1,1,2,2-Tetrachloroethane | 57.55  | 5.0                         | 50      | 0              | 115  | 72 - 120                         | 56.27         | 2.25  | 20        |      |
| 1,1,2-Trichloroethane     | 48.92  | 5.0                         | 50      | 0              | 97.8 | 80 - 120                         | 46.53         | 5.01  | 20        |      |
| 1,1-Dichloroethane        | 45.12  | 5.0                         | 50      | 0              | 90.2 | 76 - 120                         | 44.08         | 2.31  | 20        |      |
| 1,1-Dichloroethene        | 48.7   | 5.0                         | 50      | 0              | 97.4 | 73 - 124                         | 50.06         | 2.75  | 20        |      |
| 1,2,4-Trimethylbenzene    | 46.53  | 5.0                         | 50      | 0              | 93.1 | 68 - 123                         | 44.2          | 5.14  | 20        |      |
| 1,2-Dibromoethane         | 52.81  | 5.0                         | 50      | 0              | 106  | 80 - 120                         | 47.81         | 9.94  | 20        |      |
| 1,2-Dichloroethane        | 45.14  | 5.0                         | 50      | 0              | 90.3 | 78 - 120                         | 48.1          | 6.34  | 20        |      |
| 1,2-Dichloropropane       | 55.9   | 5.0                         | 50      | 0              | 112  | 80 - 120                         | 59.88         | 6.88  | 20        |      |
| 1,3,5-Trimethylbenzene    | 50.03  | 5.0                         | 50      | 0              | 100  | 80 - 120                         | 46.64         | 7.02  | 20        |      |
| 2-Butanone                | 87.46  | 10                          | 100     | 0              | 87.5 | 58 - 132                         | 84.83         | 3.06  | 20        |      |
| 2-Hexanone                | 96.34  | 10                          | 100     | 0              | 96.3 | 61 - 130                         | 93.66         | 2.82  | 20        |      |
| 4-Isopropyltoluene        | 49.13  | 5.0                         | 50      | 0              | 98.3 | 79 - 120                         | 46.8          | 4.86  | 20        |      |
| 4-Methyl-2-pentanone      | 92.93  | 10                          | 100     | 0              | 92.9 | 65 - 127                         | 92.41         | 0.558 | 20        |      |
| Acetone                   | 92.7   | 10                          | 100     | 0              | 92.7 | 59 - 137                         | 91.76         | 1.02  | 20        |      |
| Benzene                   | 44.82  | 5.0                         | 50      | 0              | 89.6 | 73 - 121                         | 47.2          | 5.19  | 20        |      |
| Bromodichloromethane      | 47.69  | 5.0                         | 50      | 0              | 95.4 | 75 - 125                         | 49.86         | 4.45  | 20        |      |
| Bromoform                 | 52.35  | 5.0                         | 50      | 0              | 105  | 70 - 130                         | 52.47         | 0.246 | 20        |      |
| Bromomethane              | 42     | 5.0                         | 50      | 0              | 84.0 | 60 - 145                         | 47.88         | 13.1  | 20        |      |
| Carbon disulfide          | 112.3  | 10                          | 100     | 0              | 112  | 68 - 141                         | 103.8         | 7.81  | 20        |      |
| Carbon tetrachloride      | 48.2   | 5.0                         | 50      | 0              | 96.4 | 75 - 125                         | 49.79         | 3.24  | 20        |      |
| Chlorobenzene             | 49.36  | 5.0                         | 50      | 0              | 98.7 | 80 - 120                         | 46.17         | 6.68  | 20        |      |
| Chloroethane              | 48.15  | 5.0                         | 50      | 0              | 96.3 | 76 - 121                         | 41.22         | 15.5  | 20        |      |
| Chloroform                | 44.54  | 5.0                         | 50      | 0              | 89.1 | 70 - 130                         | 46.18         | 3.61  | 20        |      |
| Chloromethane             | 29.11  | 5.0                         | 50      | 0              | 58.2 | 67 - 123                         | 29.19         | 0.273 | 20        | S    |
| cis-1,2-Dichloroethene    | 50.02  | 5.0                         | 50      | 0              | 100  | 78 - 120                         | 48.38         | 3.33  | 20        |      |
| cis-1,3-Dichloropropene   | 49     | 5.0                         | 50      | 0              | 98.0 | 80 - 120                         | 49.89         | 1.81  | 20        |      |
| Dibromochloromethane      | 52.91  | 5.0                         | 50      | 0              | 106  | 80 - 120                         | 49.82         | 6.02  | 20        |      |
| Ethylbenzene              | 50.53  | 5.0                         | 50      | 0              | 101  | 80 - 120                         | 49.07         | 2.92  | 20        |      |
| Isopropylbenzene          | 49.65  | 5.0                         | 50      | 0              | 99.3 | 75 - 130                         | 46.94         | 5.62  | 20        |      |
| m,p-Xylene                | 100.9  | 10                          | 100     | 0              | 101  | 78 - 121                         | 98.55         | 2.33  | 20        |      |
| Methyl tert-butyl ether   | 53.36  | 5.0                         | 50      | 0              | 107  | 70 - 125                         | 50.99         | 4.54  | 20        |      |
| Methylene chloride        | 55.5   | 10                          | 50      | 0              | 111  | 65 - 133                         | 53.48         | 3.7   | 20        |      |
| Naphthalene               | 53.64  | 5.0                         | 50      | 0              | 107  | 65 - 135                         | 52.16         | 2.79  | 20        |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240113           |                                    | Instrument: VOA1      |         | Method: SW8260                          |                                                 |
|-----------------------------|------------------------------------|-----------------------|---------|-----------------------------------------|-------------------------------------------------|
| <b>MSD</b>                  | Sample ID: <b>HS14080845-11MSD</b> | Units: <b>ug/L</b>    |         | Analysis Date: <b>29-Aug-2014 16:14</b> |                                                 |
| Client ID:                  | Run ID: <b>VOA1_240113</b>         | SeqNo: <b>2986551</b> |         | PrepDate:                               | DF: <b>1</b>                                    |
| Analyte                     | Result                             | PQL                   | SPK Val | SPK Ref Value %REC                      | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| n-Butylbenzene              | 44.99                              | 5.0                   | 50      | 0 90.0                                  | 77 - 120 45.6 1.33 20                           |
| n-Propylbenzene             | 47.72                              | 5.0                   | 50      | 0 95.4                                  | 78 - 120 47.09 1.32 20                          |
| o-Xylene                    | 47.47                              | 5.0                   | 50      | 0 94.9                                  | 80 - 120 47.48 0.0307 20                        |
| sec-Butylbenzene            | 49.44                              | 5.0                   | 50      | 0 98.9                                  | 78 - 120 45.71 7.83 20                          |
| Styrene                     | 52.45                              | 5.0                   | 50      | 0 105                                   | 80 - 120 49.86 5.06 20                          |
| Tetrachloroethene           | 51.58                              | 5.0                   | 50      | 0 103                                   | 74 - 125 49.35 4.42 20                          |
| Toluene                     | 49.21                              | 5.0                   | 50      | 0 98.4                                  | 80 - 120 45.56 7.7 20                           |
| trans-1,2-Dichloroethene    | 48.84                              | 5.0                   | 50      | 0 97.7                                  | 78 - 120 47.42 2.95 20                          |
| trans-1,3-Dichloropropene   | 51.46                              | 5.0                   | 50      | 0 103                                   | 80 - 120 53.19 3.3 20                           |
| Trichloroethene             | 50.01                              | 5.0                   | 50      | 0 100                                   | 80 - 120 52.35 4.56 20                          |
| Vinyl chloride              | 34.58                              | 2.0                   | 50      | 0 69.2                                  | 70 - 127 33.79 2.32 20 S                        |
| Xylenes, Total              | 148.3                              | 15                    | 150     | 0 98.9                                  | 78 - 121 146 1.57 20                            |
| Surr: 1,2-Dichloroethane-d4 | 46.12                              | 5.0                   | 50      | 0 92.2                                  | 70 - 125 47.13 2.16 20                          |
| Surr: 4-Bromofluorobenzene  | 52.1                               | 5.0                   | 50      | 0 104                                   | 72 - 125 50.82 2.49 20                          |
| Surr: Dibromofluoromethane  | 47.35                              | 5.0                   | 50      | 0 94.7                                  | 71 - 125 47.49 0.304 20                         |
| Surr: Toluene-d8            | 50.6                               | 5.0                   | 50      | 0 101                                   | 75 - 125 49.25 2.7 20                           |

The following samples were analyzed in this batch: HS14080747-16

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

|                          |                                 |                              |         |                                         |                                                 |
|--------------------------|---------------------------------|------------------------------|---------|-----------------------------------------|-------------------------------------------------|
| <b>Batch ID: R239955</b> |                                 | <b>Instrument: ManTech01</b> |         | <b>Method: SM4500H+ B</b>               |                                                 |
| <b>LCS</b>               | Sample ID: <b>LCS-PH-140826</b> | Units: <b>pH Units</b>       |         | Analysis Date: <b>26-Aug-2014 20:30</b> |                                                 |
| Client ID:               | Run ID: <b>ManTech01_239955</b> | SeqNo: <b>2982946</b>        |         | PrepDate:                               | DF: <b>1</b>                                    |
| Analyte                  | Result                          | PQL                          | SPK Val | SPK Ref Value %REC                      | Control Limit RPD Ref Value %RPD RPD Limit Qual |

pH 6 0.100 6 0 100 98 - 102

|                        |                                    |                        |         |                                         |                                                 |
|------------------------|------------------------------------|------------------------|---------|-----------------------------------------|-------------------------------------------------|
| <b>DUP</b>             | Sample ID: <b>HS14080747-03DUP</b> | Units: <b>pH Units</b> |         | Analysis Date: <b>26-Aug-2014 21:39</b> |                                                 |
| Client ID: <b>MW-5</b> | Run ID: <b>ManTech01_239955</b>    | SeqNo: <b>2982959</b>  |         | PrepDate:                               | DF: <b>1</b>                                    |
| Analyte                | Result                             | PQL                    | SPK Val | SPK Ref Value %REC                      | Control Limit RPD Ref Value %RPD RPD Limit Qual |

pH 7.84 0.100 7.85 0.127 10

The following samples were analyzed in this batch:

|               |               |               |               |
|---------------|---------------|---------------|---------------|
| HS14080747-01 | HS14080747-02 | HS14080747-03 | HS14080747-04 |
| HS14080747-05 | HS14080747-06 | HS14080747-07 | HS14080747-08 |
| HS14080747-09 | HS14080747-10 | HS14080747-12 | HS14080747-14 |
| HS14080747-15 |               |               |               |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R239956                  |                          | Instrument: ManTech01 |         | Method: SM2320B                  |                                                 |
|------------------------------------|--------------------------|-----------------------|---------|----------------------------------|-------------------------------------------------|
| <b>MBLK</b>                        | Sample ID: WBLKW1-140826 | Units: mg/L           |         | Analysis Date: 26-Aug-2014 20:22 |                                                 |
| Client ID:                         | Run ID: ManTech01_239956 | SeqNo: 2982979        |         | PrepDate:                        | DF: 1                                           |
| Analyte                            | Result                   | PQL                   | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Alkalinity, Bicarbonate (As CaCO3) | ND                       | 5.00                  |         |                                  |                                                 |
| Alkalinity, Carbonate (As CaCO3)   | ND                       | 5.00                  |         |                                  |                                                 |
| Alkalinity, Hydroxide (As CaCO3)   | ND                       | 5.00                  |         |                                  |                                                 |
| Alkalinity, Total (As CaCO3)       | ND                       | 5.00                  |         |                                  |                                                 |

|                              |                           |                |         |                                  |                                                 |
|------------------------------|---------------------------|----------------|---------|----------------------------------|-------------------------------------------------|
| <b>LCS</b>                   | Sample ID: LCS-ALK-140826 | Units: mg/L    |         | Analysis Date: 26-Aug-2014 20:27 |                                                 |
| Client ID:                   | Run ID: ManTech01_239956  | SeqNo: 2982980 |         | PrepDate:                        | DF: 1                                           |
| Analyte                      | Result                    | PQL            | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Alkalinity, Total (As CaCO3) | 981.1                     | 5.00           | 1000    | 0 98.1                           | 80 - 120                                        |

|                              |                          |                |         |                                  |                                                 |
|------------------------------|--------------------------|----------------|---------|----------------------------------|-------------------------------------------------|
| <b>LCSD</b>                  | Sample ID: ALK-LCSD      | Units: mg/L    |         | Analysis Date: 26-Aug-2014 23:11 |                                                 |
| Client ID:                   | Run ID: ManTech01_239956 | SeqNo: 2983011 |         | PrepDate:                        | DF: 1                                           |
| Analyte                      | Result                   | PQL            | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Alkalinity, Total (As CaCO3) | 982.2                    | 5.00           | 1000    | 0 98.2                           | 80 - 120 0 0 20                                 |

|                                    |                             |                |         |                                  |                                                 |
|------------------------------------|-----------------------------|----------------|---------|----------------------------------|-------------------------------------------------|
| <b>DUP</b>                         | Sample ID: HS14080747-03DUP | Units: mg/L    |         | Analysis Date: 26-Aug-2014 21:39 |                                                 |
| Client ID: MW-5                    | Run ID: ManTech01_239956    | SeqNo: 2982994 |         | PrepDate:                        | DF: 1                                           |
| Analyte                            | Result                      | PQL            | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Alkalinity, Bicarbonate (As CaCO3) | 346                         | 5.00           |         |                                  | 344.9 0.321                                     |
| Alkalinity, Carbonate (As CaCO3)   | ND                          | 5.00           |         |                                  | 0 0                                             |
| Alkalinity, Hydroxide (As CaCO3)   | ND                          | 5.00           |         |                                  | 0 0                                             |
| Alkalinity, Total (As CaCO3)       | 346                         | 5.00           |         |                                  | 344.9 0.321 20                                  |

|                                                    |               |               |               |  |  |
|----------------------------------------------------|---------------|---------------|---------------|--|--|
| The following samples were analyzed in this batch: |               |               |               |  |  |
| HS14080747-01                                      | HS14080747-02 | HS14080747-03 | HS14080747-04 |  |  |
| HS14080747-05                                      | HS14080747-06 | HS14080747-07 | HS14080747-08 |  |  |
| HS14080747-09                                      | HS14080747-10 | HS14080747-12 | HS14080747-14 |  |  |
| HS14080747-15                                      |               |               |               |  |  |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R239982                                  |                             | Instrument: Balance1 |         | Method: M2540C                   |      |               |               |               |                |
|----------------------------------------------------|-----------------------------|----------------------|---------|----------------------------------|------|---------------|---------------|---------------|----------------|
| MBLK                                               | Sample ID: WBLK-082514      | Units: mg/L          |         | Analysis Date: 25-Aug-2014 18:30 |      |               |               |               |                |
| Client ID:                                         | Run ID: Balance1_239982     | SeqNo: 2983775       |         | PrepDate:                        |      | DF: 1         |               |               |                |
| Analyte                                            | Result                      | PQL                  | SPK Val | SPK Ref Value                    | %REC | Control Limit | RPD Ref Value | %RPD          | RPD Limit Qual |
| Total Dissolved Solids (Residue, Filterable)       |                             | ND                   | 10.0    |                                  |      |               |               |               |                |
| LCS                                                | Sample ID: WLCS-082514      | Units: mg/L          |         | Analysis Date: 25-Aug-2014 18:30 |      |               |               |               |                |
| Client ID:                                         | Run ID: Balance1_239982     | SeqNo: 2983776       |         | PrepDate:                        |      | DF: 1         |               |               |                |
| Analyte                                            | Result                      | PQL                  | SPK Val | SPK Ref Value                    | %REC | Control Limit | RPD Ref Value | %RPD          | RPD Limit Qual |
| Total Dissolved Solids (Residue, Filterable)       |                             | 958                  | 10.0    | 1000                             | 0    | 95.8          | 85 - 115      |               |                |
| DUP                                                | Sample ID: HS14080747-01DUP | Units: mg/L          |         | Analysis Date: 25-Aug-2014 18:30 |      |               |               |               |                |
| Client ID: MW-13                                   | Run ID: Balance1_239982     | SeqNo: 2983765       |         | PrepDate:                        |      | DF: 1         |               |               |                |
| Analyte                                            | Result                      | PQL                  | SPK Val | SPK Ref Value                    | %REC | Control Limit | RPD Ref Value | %RPD          | RPD Limit Qual |
| Total Dissolved Solids (Residue, Filterable)       |                             | 2006                 | 10.0    |                                  |      | 1896          | 5.64          | 10            |                |
| DUP                                                | Sample ID: HS14080694-01DUP | Units: mg/L          |         | Analysis Date: 25-Aug-2014 18:30 |      |               |               |               |                |
| Client ID:                                         | Run ID: Balance1_239982     | SeqNo: 2983754       |         | PrepDate:                        |      | DF: 1         |               |               |                |
| Analyte                                            | Result                      | PQL                  | SPK Val | SPK Ref Value                    | %REC | Control Limit | RPD Ref Value | %RPD          | RPD Limit Qual |
| Total Dissolved Solids (Residue, Filterable)       |                             | 476                  | 10.0    |                                  |      | 478           | 0.419         | 10            |                |
| The following samples were analyzed in this batch: |                             | HS14080747-01        |         | HS14080747-02                    |      | HS14080747-03 |               | HS14080747-04 |                |
|                                                    |                             | HS14080747-05        |         | HS14080747-06                    |      | HS14080747-07 |               | HS14080747-08 |                |
|                                                    |                             | HS14080747-09        |         | HS14080747-10                    |      |               |               |               |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R239983                                 |                             | Instrument: Balance1 |         | Method: M2540C                   |        |               |               |          |                |
|---------------------------------------------------|-----------------------------|----------------------|---------|----------------------------------|--------|---------------|---------------|----------|----------------|
| MBLK                                              | Sample ID: WBLK-082614      | Units: mg/L          |         | Analysis Date: 26-Aug-2014 18:00 |        |               |               |          |                |
| Client ID:                                        | Run ID: Balance1_239983     | SeqNo: 2983799       |         | PrepDate:                        |        | DF: 1         |               |          |                |
| Analyte                                           | Result                      | PQL                  | SPK Val | SPK Ref Value                    | %REC   | Control Limit | RPD Ref Value | RPD %RPD | RPD Limit Qual |
| Total Dissolved Solids (Residue, Filterable)      |                             | ND                   | 10.0    |                                  |        |               |               |          |                |
| LCS                                               | Sample ID: WLCS-082614      | Units: mg/L          |         | Analysis Date: 26-Aug-2014 18:00 |        |               |               |          |                |
| Client ID:                                        | Run ID: Balance1_239983     | SeqNo: 2983800       |         | PrepDate:                        |        | DF: 1         |               |          |                |
| Analyte                                           | Result                      | PQL                  | SPK Val | SPK Ref Value                    | %REC   | Control Limit | RPD Ref Value | RPD %RPD | RPD Limit Qual |
| Total Dissolved Solids (Residue, Filterable)      |                             | 964                  | 10.0    | 1000                             | 0 96.4 | 85 - 115      |               |          |                |
| DUP                                               | Sample ID: HS14080747-12DUP | Units: mg/L          |         | Analysis Date: 26-Aug-2014 18:00 |        |               |               |          |                |
| Client ID: MW-12R                                 | Run ID: Balance1_239983     | SeqNo: 2983789       |         | PrepDate:                        |        | DF: 1         |               |          |                |
| Analyte                                           | Result                      | PQL                  | SPK Val | SPK Ref Value                    | %REC   | Control Limit | RPD Ref Value | RPD %RPD | RPD Limit Qual |
| Total Dissolved Solids (Residue, Filterable)      |                             | 418                  | 10.0    |                                  |        | 410           | 1.93          | 10       |                |
| DUP                                               | Sample ID: HS14080673-01DUP | Units: mg/L          |         | Analysis Date: 26-Aug-2014 18:00 |        |               |               |          |                |
| Client ID:                                        | Run ID: Balance1_239983     | SeqNo: 2983778       |         | PrepDate:                        |        | DF: 1         |               |          |                |
| Analyte                                           | Result                      | PQL                  | SPK Val | SPK Ref Value                    | %REC   | Control Limit | RPD Ref Value | RPD %RPD | RPD Limit Qual |
| Total Dissolved Solids (Residue, Filterable)      |                             | 534                  | 10.0    |                                  |        | 520           | 2.66          | 10       |                |
| The following samples were anayzed in this batch: |                             |                      |         |                                  |        |               |               |          |                |
| HS14080747-12                                     |                             | HS14080747-13        |         | HS14080747-14                    |        | HS14080747-15 |               |          |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

|                                                    |                             |                       |               |                                  |               |               |               |       |                |
|----------------------------------------------------|-----------------------------|-----------------------|---------------|----------------------------------|---------------|---------------|---------------|-------|----------------|
| Batch ID: R240171                                  |                             | Instrument: ManTech01 |               | Method: M2510 B                  |               |               |               |       |                |
| MBLK                                               | Sample ID: WBLKW1-140830    | Units: umhos/cm       |               | Analysis Date: 30-Aug-2014 15:13 |               |               |               |       |                |
| Client ID:                                         | Run ID: ManTech01_240171    | SeqNo: 2987765        |               | PrepDate:                        |               | DF: 1         |               |       |                |
| Analyte                                            | Result                      | PQL                   | SPK Val       | SPK Ref Value                    | %REC          | Control Limit | RPD Ref Value | %RPD  | RPD Limit Qual |
| Specific Conductivity                              | ND                          | 5.00                  |               |                                  |               |               |               |       |                |
| LCS                                                | Sample ID: LCS-COND-140830  | Units: umhos/cm       |               | Analysis Date: 30-Aug-2014 15:14 |               |               |               |       |                |
| Client ID:                                         | Run ID: ManTech01_240171    | SeqNo: 2987766        |               | PrepDate:                        |               | DF: 1         |               |       |                |
| Analyte                                            | Result                      | PQL                   | SPK Val       | SPK Ref Value                    | %REC          | Control Limit | RPD Ref Value | %RPD  | RPD Limit Qual |
| Specific Conductivity                              | 1310                        | 5.00                  | 1413          | 0                                | 92.7          | 80 - 120      |               |       |                |
| DUP                                                | Sample ID: HS14080729-01DUP | Units: umhos/cm       |               | Analysis Date: 30-Aug-2014 15:17 |               |               |               |       |                |
| Client ID:                                         | Run ID: ManTech01_240171    | SeqNo: 2987768        |               | PrepDate:                        |               | DF: 1         |               |       |                |
| Analyte                                            | Result                      | PQL                   | SPK Val       | SPK Ref Value                    | %REC          | Control Limit | RPD Ref Value | %RPD  | RPD Limit Qual |
| Specific Conductivity                              | 784.3                       | 5.00                  |               |                                  |               |               | 778.2         | 0.781 | 20             |
| The following samples were analyzed in this batch: |                             |                       |               |                                  |               |               |               |       |                |
|                                                    | HS14080747-01               |                       | HS14080747-02 |                                  | HS14080747-03 |               | HS14080747-04 |       |                |
|                                                    | HS14080747-05               |                       | HS14080747-06 |                                  | HS14080747-07 |               | HS14080747-08 |       |                |
|                                                    | HS14080747-09               |                       | HS14080747-10 |                                  | HS14080747-12 |               | HS14080747-14 |       |                |
|                                                    | HS14080747-15               |                       |               |                                  |               |               |               |       |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240268 |                        | Instrument: ICS3000 |         | Method: E300                     |                                                 |
|-------------------|------------------------|---------------------|---------|----------------------------------|-------------------------------------------------|
| <b>MBLK</b>       | Sample ID: WBLKW1      | Units: mg/L         |         | Analysis Date: 03-Sep-2014 02:02 |                                                 |
| Client ID:        | Run ID: ICS3000_240268 | SeqNo: 2989757      |         | PrepDate:                        | DF: 1                                           |
| Analyte           | Result                 | PQL                 | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Chloride          | ND                     | 0.500               |         |                                  |                                                 |
| Fluoride          | ND                     | 0.100               |         |                                  |                                                 |
| Sulfate           | ND                     | 0.500               |         |                                  |                                                 |

|            |                        |                |         |                                  |                                                 |
|------------|------------------------|----------------|---------|----------------------------------|-------------------------------------------------|
| <b>LCS</b> | Sample ID: WLCSW1      | Units: mg/L    |         | Analysis Date: 03-Sep-2014 02:23 |                                                 |
| Client ID: | Run ID: ICS3000_240268 | SeqNo: 2989758 |         | PrepDate:                        | DF: 1                                           |
| Analyte    | Result                 | PQL            | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Chloride   | 19.29                  | 0.500          | 20      | 0 96.4                           | 90 - 110                                        |
| Fluoride   | 3.938                  | 0.100          | 4       | 0 98.4                           | 90 - 110                                        |
| Sulfate    | 19.46                  | 0.500          | 20      | 0 97.3                           | 90 - 110                                        |

|            |                            |                |         |                                  |                                                 |
|------------|----------------------------|----------------|---------|----------------------------------|-------------------------------------------------|
| <b>MS</b>  | Sample ID: HS14090038-01MS | Units: mg/L    |         | Analysis Date: 03-Sep-2014 03:28 |                                                 |
| Client ID: | Run ID: ICS3000_240268     | SeqNo: 2989761 |         | PrepDate:                        | DF: 1                                           |
| Analyte    | Result                     | PQL            | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Chloride   | 14.69                      | 0.500          | 10      | 4.856 98.4                       | 80 - 120                                        |
| Fluoride   | 2.198                      | 0.100          | 2       | 0.162 102                        | 80 - 120                                        |
| Sulfate    | 28.49                      | 0.500          | 10      | 18.82 96.6                       | 80 - 120                                        |

|            |                             |                |         |                                  |                                                 |
|------------|-----------------------------|----------------|---------|----------------------------------|-------------------------------------------------|
| <b>MSD</b> | Sample ID: HS14090038-01MSD | Units: mg/L    |         | Analysis Date: 03-Sep-2014 03:50 |                                                 |
| Client ID: | Run ID: ICS3000_240268      | SeqNo: 2989762 |         | PrepDate:                        | DF: 1                                           |
| Analyte    | Result                      | PQL            | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Chloride   | 15                          | 0.500          | 10      | 4.856 101                        | 80 - 120 14.69 2.03 20                          |
| Fluoride   | 2.25                        | 0.100          | 2       | 0.162 104                        | 80 - 120 2.198 2.34 20                          |
| Sulfate    | 29.05                       | 0.500          | 10      | 18.82 102                        | 80 - 120 28.49 1.95 20                          |

|                                                    |  |               |               |
|----------------------------------------------------|--|---------------|---------------|
| The following samples were analyzed in this batch: |  | HS14080747-01 | HS14080747-02 |
|----------------------------------------------------|--|---------------|---------------|

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240338                                  |                             | Instrument: ICS3000 |         | Method: E300                     |                                                 |
|----------------------------------------------------|-----------------------------|---------------------|---------|----------------------------------|-------------------------------------------------|
| <b>MBLK</b>                                        | Sample ID: WBLKW1           | Units: mg/L         |         | Analysis Date: 04-Sep-2014 00:48 |                                                 |
| Client ID:                                         | Run ID: ICS3000_240338      | SeqNo: 2991291      |         | PrepDate:                        | DF: 1                                           |
| Analyte                                            | Result                      | PQL                 | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Nitrate/Nitrite (as N)                             | ND                          | 0.200               |         |                                  |                                                 |
| <b>LCS</b>                                         | Sample ID: WLCSW1           | Units: mg/L         |         | Analysis Date: 04-Sep-2014 01:10 |                                                 |
| Client ID:                                         | Run ID: ICS3000_240338      | SeqNo: 2991292      |         | PrepDate:                        | DF: 1                                           |
| Analyte                                            | Result                      | PQL                 | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Nitrate/Nitrite (as N)                             | 7.756                       | 0.200               | 8       | 0 97.0                           | 90 - 110                                        |
| <b>MS</b>                                          | Sample ID: HS14080763-01MS  | Units: mg/L         |         | Analysis Date: 04-Sep-2014 01:53 |                                                 |
| Client ID:                                         | Run ID: ICS3000_240338      | SeqNo: 2991294      |         | PrepDate:                        | DF: 5                                           |
| Analyte                                            | Result                      | PQL                 | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Nitrate/Nitrite (as N)                             | 13.49                       | 1.00                | 20      | 0.368 65.6                       | 80 - 120 S                                      |
| <b>MSD</b>                                         | Sample ID: HS14080763-01MSD | Units: mg/L         |         | Analysis Date: 04-Sep-2014 02:15 |                                                 |
| Client ID:                                         | Run ID: ICS3000_240338      | SeqNo: 2991295      |         | PrepDate:                        | DF: 5                                           |
| Analyte                                            | Result                      | PQL                 | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Nitrate/Nitrite (as N)                             | 10.57                       | 1.00                | 20      | 0.368 51.0                       | 80 - 120 13.49 24.3 20 SR                       |
| The following samples were analyzed in this batch: |                             |                     |         |                                  |                                                 |
| HS14080747-01                                      |                             | HS14080747-02       |         | HS14080747-03                    |                                                 |
| HS14080747-05                                      |                             | HS14080747-06       |         | HS14080747-07                    |                                                 |
| HS14080747-09                                      |                             | HS14080747-10       |         | HS14080747-11                    |                                                 |
| HS14080747-13                                      |                             | HS14080747-14       |         | HS14080747-15                    |                                                 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240342 |                        | Instrument: ICS3000 |         | Method: E300                     |                                                 |
|-------------------|------------------------|---------------------|---------|----------------------------------|-------------------------------------------------|
| <b>MBLK</b>       | Sample ID: WBLKW2      | Units: mg/L         |         | Analysis Date: 03-Sep-2014 11:04 |                                                 |
| Client ID:        | Run ID: ICS3000_240342 | SeqNo: 2991385      |         | PrepDate:                        | DF: 1                                           |
| Analyte           | Result                 | PQL                 | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |

|          |    |       |  |  |  |
|----------|----|-------|--|--|--|
| Chloride | ND | 0.500 |  |  |  |
| Fluoride | ND | 0.100 |  |  |  |
| Sulfate  | ND | 0.500 |  |  |  |

|            |                        |                |         |                                  |                                                 |
|------------|------------------------|----------------|---------|----------------------------------|-------------------------------------------------|
| <b>LCS</b> | Sample ID: WLCSW2      | Units: mg/L    |         | Analysis Date: 03-Sep-2014 11:26 |                                                 |
| Client ID: | Run ID: ICS3000_240342 | SeqNo: 2991386 |         | PrepDate:                        | DF: 1                                           |
| Analyte    | Result                 | PQL            | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |

|          |       |       |    |   |      |          |
|----------|-------|-------|----|---|------|----------|
| Chloride | 19.59 | 0.500 | 20 | 0 | 97.9 | 90 - 110 |
| Fluoride | 4.022 | 0.100 | 4  | 0 | 101  | 90 - 110 |
| Sulfate  | 19.77 | 0.500 | 20 | 0 | 98.9 | 90 - 110 |

|                 |                            |                |         |                                  |                                                 |
|-----------------|----------------------------|----------------|---------|----------------------------------|-------------------------------------------------|
| <b>MS</b>       | Sample ID: HS14080747-03MS | Units: mg/L    |         | Analysis Date: 03-Sep-2014 12:09 |                                                 |
| Client ID: MW-5 | Run ID: ICS3000_240342     | SeqNo: 2991388 |         | PrepDate:                        | DF: 1                                           |
| Analyte         | Result                     | PQL            | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |

|          |       |       |    |       |     |          |
|----------|-------|-------|----|-------|-----|----------|
| Chloride | 19.11 | 0.500 | 10 | 8.707 | 104 | 80 - 120 |
| Fluoride | 3.315 | 0.100 | 2  | 1.156 | 108 | 80 - 120 |
| Sulfate  | 54.84 | 0.500 | 10 | 44.58 | 103 | 80 - 120 |

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|                 |                             |                |         |                                  |                                                 |
|-----------------|-----------------------------|----------------|---------|----------------------------------|-------------------------------------------------|
| <b>MSD</b>      | Sample ID: HS14080747-03MSD | Units: mg/L    |         | Analysis Date: 03-Sep-2014 12:31 |                                                 |
| Client ID: MW-5 | Run ID: ICS3000_240342      | SeqNo: 2991389 |         | PrepDate:                        | DF: 1                                           |
| Analyte         | Result                      | PQL            | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |

|          |       |       |    |       |     |          |       |       |    |
|----------|-------|-------|----|-------|-----|----------|-------|-------|----|
| Chloride | 19.04 | 0.500 | 10 | 8.707 | 103 | 80 - 120 | 19.11 | 0.351 | 20 |
| Fluoride | 3.308 | 0.100 | 2  | 1.156 | 108 | 80 - 120 | 3.315 | 0.211 | 20 |
| Sulfate  | 55    | 0.500 | 10 | 44.58 | 104 | 80 - 120 | 54.84 | 0.297 | 20 |

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|                                                           |  |               |               |               |               |
|-----------------------------------------------------------|--|---------------|---------------|---------------|---------------|
| <b>The following samples were analyzed in this batch:</b> |  | HS14080747-03 | HS14080747-04 | HS14080747-05 | HS14080747-06 |
|                                                           |  | HS14080747-07 | HS14080747-08 | HS14080747-09 | HS14080747-10 |
|                                                           |  | HS14080747-12 | HS14080747-14 | HS14080747-15 |               |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240428 |                        | Instrument: ICS3000 |         | Method: E300                     |                                                 |
|-------------------|------------------------|---------------------|---------|----------------------------------|-------------------------------------------------|
| <b>MBLK</b>       | Sample ID: WBLKW2      | Units: mg/L         |         | Analysis Date: 05-Sep-2014 04:05 |                                                 |
| Client ID:        | Run ID: ICS3000_240428 | SeqNo: 2993201      |         | PrepDate:                        | DF: 1                                           |
| Analyte           | Result                 | PQL                 | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Chloride          | ND                     | 0.500               |         |                                  |                                                 |
| Sulfate           | ND                     | 0.500               |         |                                  |                                                 |

|            |                        |                |         |                                  |                                                 |
|------------|------------------------|----------------|---------|----------------------------------|-------------------------------------------------|
| <b>LCS</b> | Sample ID: WLCSW2      | Units: mg/L    |         | Analysis Date: 05-Sep-2014 04:27 |                                                 |
| Client ID: | Run ID: ICS3000_240428 | SeqNo: 2993202 |         | PrepDate:                        | DF: 1                                           |
| Analyte    | Result                 | PQL            | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Chloride   | 20.35                  | 0.500          | 20      | 0 102                            | 90 - 110                                        |
| Sulfate    | 20.3                   | 0.500          | 20      | 0 102                            | 90 - 110                                        |

|            |                            |                |         |                                  |                                                 |
|------------|----------------------------|----------------|---------|----------------------------------|-------------------------------------------------|
| <b>MS</b>  | Sample ID: HS14090127-12MS | Units: mg/L    |         | Analysis Date: 05-Sep-2014 05:53 |                                                 |
| Client ID: | Run ID: ICS3000_240428     | SeqNo: 2993206 |         | PrepDate:                        | DF: 1                                           |
| Analyte    | Result                     | PQL            | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Chloride   | 1773                       | 0.500          | 10      | 1749 245                         | 80 - 120 SEO                                    |
| Sulfate    | 204.4                      | 0.500          | 10      | 193 114                          | 80 - 120 EO                                     |

|            |                             |                |         |                                  |                                                 |
|------------|-----------------------------|----------------|---------|----------------------------------|-------------------------------------------------|
| <b>MSD</b> | Sample ID: HS14090127-12MSD | Units: mg/L    |         | Analysis Date: 05-Sep-2014 06:15 |                                                 |
| Client ID: | Run ID: ICS3000_240428      | SeqNo: 2993207 |         | PrepDate:                        | DF: 1                                           |
| Analyte    | Result                      | PQL            | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Chloride   | 1723                        | 0.500          | 10      | 1749 -259                        | 80 - 120 1773 2.89 20 SEO                       |
| Sulfate    | 199.7                       | 0.500          | 10      | 193 66.3                         | 80 - 120 204.4 2.34 20 SEO                      |

|                                                    |  |               |  |               |  |
|----------------------------------------------------|--|---------------|--|---------------|--|
| The following samples were analyzed in this batch: |  |               |  |               |  |
| HS14080747-08                                      |  | HS14080747-14 |  | HS14080747-15 |  |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080747  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240429                                                |                             | Instrument: ICS3000 |         | Method: E300                     |                                                 |
|------------------------------------------------------------------|-----------------------------|---------------------|---------|----------------------------------|-------------------------------------------------|
| <b>MBLK</b>                                                      | Sample ID: WBLKW2           | Units: mg/L         |         | Analysis Date: 05-Sep-2014 04:05 |                                                 |
| Client ID:                                                       | Run ID: ICS3000_240429      | SeqNo: 2993189      |         | PrepDate:                        | DF: 1                                           |
| Analyte                                                          | Result                      | PQL                 | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Nitrate/Nitrite (as N)                                           |                             | ND                  | 0.200   |                                  |                                                 |
| <b>LCS</b>                                                       | Sample ID: WLCSW2           | Units: mg/L         |         | Analysis Date: 05-Sep-2014 04:27 |                                                 |
| Client ID:                                                       | Run ID: ICS3000_240429      | SeqNo: 2993190      |         | PrepDate:                        | DF: 1                                           |
| Analyte                                                          | Result                      | PQL                 | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Nitrate/Nitrite (as N)                                           |                             | 8.274               | 0.200   | 8                                | 0 103 90 - 110                                  |
| <b>MS</b>                                                        | Sample ID: HS14080127-12MS  | Units: mg/L         |         | Analysis Date: 05-Sep-2014 05:53 |                                                 |
| Client ID:                                                       | Run ID: ICS3000_240429      | SeqNo: 2993192      |         | PrepDate:                        | DF: 1                                           |
| Analyte                                                          | Result                      | PQL                 | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Nitrate/Nitrite (as N)                                           |                             | 3.868               | 0.200   | 4                                | 0 96.7 80 - 120                                 |
| <b>MSD</b>                                                       | Sample ID: HS14080127-12MSD | Units: mg/L         |         | Analysis Date: 05-Sep-2014 06:15 |                                                 |
| Client ID:                                                       | Run ID: ICS3000_240429      | SeqNo: 2993193      |         | PrepDate:                        | DF: 1                                           |
| Analyte                                                          | Result                      | PQL                 | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Nitrate/Nitrite (as N)                                           |                             | 3.47                | 0.200   | 4                                | 0 86.8 80 - 120 3.868 10.8 20                   |
| The following samples were analyzed in this batch: HS14080747-02 |                             |                     |         |                                  |                                                 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining - SA  
**WorkOrder:** HS14080747

**QUALIFIERS,  
ACRONYMS, UNITS**

| <b>Qualifier</b> | <b>Description</b>                                                        |
|------------------|---------------------------------------------------------------------------|
| *                | Value exceeds Regulatory Limit                                            |
| a                | Not accredited                                                            |
| B                | Analyte detected in the associated Method Blank above the Reporting Limit |
| E                | Value above quantitation range                                            |
| H                | Analyzed outside of Holding Time                                          |
| J                | Analyte detected below quantitation limit                                 |
| M                | Manually integrated, see raw data for justification                       |
| n                | Not offered for accreditation                                             |
| ND               | Not Detected at the Reporting Limit                                       |
| O                | Sample amount is > 4 times amount spiked                                  |
| P                | Dual Column results percent difference > 40%                              |
| R                | RPD above laboratory control limit                                        |
| S                | Spike Recovery outside laboratory control limits                          |
| U                | Analyzed but not detected above the MDL/SDL                               |

| <b>Acronym</b> | <b>Description</b>                  |
|----------------|-------------------------------------|
| DCS            | Detectability Check Study           |
| DUP            | Method Duplicate                    |
| LCS            | Laboratory Control Sample           |
| LCSD           | Laboratory Control Sample Duplicate |
| MBLK           | Method Blank                        |
| MDL            | Method Detection Limit              |
| MQL            | Method Quantitation Limit           |
| MS             | Matrix Spike                        |
| MSD            | Matrix Spike Duplicate              |
| PDS            | Post Digestion Spike                |
| PQL            | Practical Quantitation Limit        |
| SD             | Serial Dilution                     |
| SDL            | Sample Detection Limit              |
| TRRP           | Texas Risk Reduction Program        |

| <b>Unit Reported</b> | <b>Description</b>   |
|----------------------|----------------------|
| µg/L                 | Micrograms per Liter |
| µmhos/cm             |                      |
| Date                 |                      |
| mg/L                 | Milligrams per Liter |
| pH units             |                      |

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**CERTIFICATIONS,ACCREDITATIONS & LICENSES**

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| Agency          | Number                 | Expire Date |
|-----------------|------------------------|-------------|
| Arkansas        | AR - 2014              | 27-Mar-2015 |
| California      | 2919                   | 31-Jul-2015 |
| Dept of Defense | L2231 Rev 3-20-2014    | 22-Dec-2015 |
| Illinois        | 003403                 | 09-May-2015 |
| Kansas          | E-10352 8/15/2013-2014 | 01-Oct-2014 |
| Kentucky        | KY 2014-2015           | 30-Apr-2015 |
| Louisiana       | 03087 2014/2015        | 30-Jun-2015 |
| North Carolina  | 624 - 2014             | 31-Dec-2014 |
| North Dakota    | R-193 2025             | 30-Apr-2015 |
| Oklahoma        | 2014-128               | 31-Aug-2015 |
| Texas           | TX104704231-14-13      | 30-Apr-2015 |

**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining - SA  
**Work Order:** HS14080747

**SAMPLE TRACKING**

| Lab Samp ID   | Client Sample ID | Action | Date            | Person | New Location |
|---------------|------------------|--------|-----------------|--------|--------------|
| HS14080747-01 | MW-13            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-01 | MW-13            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-01 | MW-13            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-01 | MW-13            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-01 | MW-13            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-01 | MW-13            | Login  | 21-Aug-14 01:58 | SLS    | VW-3         |
| HS14080747-02 | MW-16            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-02 | MW-16            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-02 | MW-16            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-02 | MW-16            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-02 | MW-16            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-02 | MW-16            | Login  | 21-Aug-14 01:58 | SLS    | VW-3         |
| HS14080747-03 | MW-5             | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-03 | MW-5             | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-03 | MW-5             | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-03 | MW-5             | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-03 | MW-5             | Login  | 21-Aug-14 01:58 | SLS    | VW-3         |
| HS14080747-04 | MW-28            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-04 | MW-28            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-04 | MW-28            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-04 | MW-28            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-04 | MW-28            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-04 | MW-28            | Login  | 21-Aug-14 01:58 | SLS    | VW-3         |
| HS14080747-05 | MW-19            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-05 | MW-19            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-05 | MW-19            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-05 | MW-19            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-05 | MW-19            | Login  | 21-Aug-14 01:58 | SLS    | VW-3         |
| HS14080747-06 | MW-20            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-06 | MW-20            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-06 | MW-20            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-06 | MW-20            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-06 | MW-20            | Login  | 21-Aug-14 01:58 | SLS    | VW-3         |
| HS14080747-07 | MW-25            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-07 | MW-25            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-07 | MW-25            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |
| HS14080747-07 | MW-25            | Login  | 21-Aug-14 01:58 | SLS    | 21A          |

**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining - SA  
**Work Order:** HS14080747

**SAMPLE TRACKING**

|               |        |       |                 |     |      |
|---------------|--------|-------|-----------------|-----|------|
| HS14080747-07 | MW-25  | Login | 21-Aug-14 01:58 | SLS | 21A  |
| HS14080747-07 | MW-25  | Login | 21-Aug-14 01:58 | SLS | VW-3 |
| HS14080747-08 | MW-21  | Login | 21-Aug-14 01:58 | SLS | 21A  |
| HS14080747-08 | MW-21  | Login | 21-Aug-14 01:58 | SLS | 21A  |
| HS14080747-08 | MW-21  | Login | 21-Aug-14 01:58 | SLS | 21A  |
| HS14080747-08 | MW-21  | Login | 21-Aug-14 01:58 | SLS | 21A  |
| HS14080747-08 | MW-21  | Login | 21-Aug-14 01:58 | SLS | 21A  |
| HS14080747-08 | MW-21  | Login | 21-Aug-14 01:58 | SLS | VW-3 |
| HS14080747-09 | Dup-1  | Login | 21-Aug-14 01:58 | SLS | 21A  |
| HS14080747-09 | Dup-1  | Login | 21-Aug-14 01:58 | SLS | 21A  |
| HS14080747-09 | Dup-1  | Login | 21-Aug-14 01:58 | SLS | 21A  |
| HS14080747-09 | Dup-1  | Login | 21-Aug-14 01:58 | SLS | 21A  |
| HS14080747-09 | Dup-1  | Login | 21-Aug-14 01:58 | SLS | 21A  |
| HS14080747-09 | Dup-1  | Login | 21-Aug-14 01:58 | SLS | VW-3 |
| HS14080747-10 | Dup-2  | Login | 21-Aug-14 01:58 | SLS | 21A  |
| HS14080747-10 | Dup-2  | Login | 21-Aug-14 01:58 | SLS | 21A  |
| HS14080747-10 | Dup-2  | Login | 21-Aug-14 01:58 | SLS | 21A  |
| HS14080747-10 | Dup-2  | Login | 21-Aug-14 01:58 | SLS | 21A  |
| HS14080747-10 | Dup-2  | Login | 21-Aug-14 01:58 | SLS | 21A  |
| HS14080747-10 | Dup-2  | Login | 21-Aug-14 01:58 | SLS | VW-3 |
| HS14080747-11 | MW-11  | Login | 21-Aug-14 02:01 | SLS | 21A  |
| HS14080747-11 | MW-11  | Login | 21-Aug-14 02:01 | SLS | 21A  |
| HS14080747-11 | MW-11  | Login | 21-Aug-14 02:01 | SLS | 21A  |
| HS14080747-11 | MW-11  | Login | 21-Aug-14 02:01 | SLS | VW-3 |
| HS14080747-12 | MW-12R | Login | 21-Aug-14 02:01 | SLS | 21A  |
| HS14080747-12 | MW-12R | Login | 21-Aug-14 02:01 | SLS | 21A  |
| HS14080747-12 | MW-12R | Login | 21-Aug-14 02:01 | SLS | 21A  |
| HS14080747-12 | MW-12R | Login | 21-Aug-14 02:01 | SLS | 21A  |
| HS14080747-12 | MW-12R | Login | 21-Aug-14 02:01 | SLS | 21A  |
| HS14080747-12 | MW-12R | Login | 21-Aug-14 02:01 | SLS | VW-3 |
| HS14080747-13 | MW-14  | Login | 21-Aug-14 02:01 | SLS | 21A  |
| HS14080747-13 | MW-14  | Login | 21-Aug-14 02:01 | SLS | 21A  |
| HS14080747-13 | MW-14  | Login | 21-Aug-14 02:01 | SLS | 21A  |
| HS14080747-13 | MW-14  | Login | 21-Aug-14 02:01 | SLS | 21A  |
| HS14080747-13 | MW-14  | Login | 21-Aug-14 02:01 | SLS | 21A  |
| HS14080747-14 | MW-22  | Login | 21-Aug-14 02:01 | SLS | 21A  |
| HS14080747-14 | MW-22  | Login | 21-Aug-14 02:01 | SLS | 21A  |
| HS14080747-14 | MW-22  | Login | 21-Aug-14 02:01 | SLS | 21A  |
| HS14080747-14 | MW-22  | Login | 21-Aug-14 02:01 | SLS | 21A  |
| HS14080747-14 | MW-22  | Login | 21-Aug-14 02:01 | SLS | 21A  |
| HS14080747-14 | MW-22  | Login | 21-Aug-14 02:01 | SLS | VW-3 |
| HS14080747-15 | MW-18  | Login | 21-Aug-14 02:01 | SLS | 21A  |

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**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining - SA  
**Work Order:** HS14080747

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**SAMPLE TRACKING**

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|               |               |       |                 |     |      |
|---------------|---------------|-------|-----------------|-----|------|
| HS14080747-15 | MW-18         | Login | 21-Aug-14 02:01 | SLS | 21A  |
| HS14080747-15 | MW-18         | Login | 21-Aug-14 02:01 | SLS | 21A  |
| HS14080747-15 | MW-18         | Login | 21-Aug-14 02:01 | SLS | 21A  |
| HS14080747-15 | MW-18         | Login | 21-Aug-14 02:01 | SLS | 21A  |
| HS14080747-15 | MW-18         | Login | 21-Aug-14 02:01 | SLS | VW-3 |
| HS14080747-16 | TB-08-20-14-A | Login | 21-Aug-14 05:06 | SLS | VW-3 |

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## Sample Receipt Checklist

Client Name: Navajo Refining  
Work Order: HS14080747

Date/Time Received: **21-Aug-2014 21:03**  
Received by: **JOD**

Checklist completed by: Stephen L. Smith 21-Aug-2014  
eSignature Date

Reviewed by: Bethany McDaniel 25-Aug-2014  
eSignature Date

Matrices: **water**

Carrier name: **FedEx**

|                                                         |                                         |                                        |                                                 |
|---------------------------------------------------------|-----------------------------------------|----------------------------------------|-------------------------------------------------|
| Shipping container/cooler in good condition?            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Not Present <input type="checkbox"/>            |
| Custody seals intact on shipping container/cooler?      | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Not Present <input type="checkbox"/>            |
| Custody seals intact on sample bottles?                 | Yes <input type="checkbox"/>            | No <input type="checkbox"/>            | Not Present <input checked="" type="checkbox"/> |
| Chain of custody present?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                                 |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                                 |
| Chain of custody agrees with sample labels?             | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> |                                                 |
| Samples in proper container/bottle?                     | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                                 |
| Sample containers intact?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                                 |
| Sufficient sample volume for indicated test?            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                                 |
| All samples received within holding time?               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                                 |
| Container/Temp Blank temperature in compliance?         | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                                 |
| Temperature(s)/Thermometer(s):                          | 3.4/3.4 c/u 3                           |                                        |                                                 |
| Cooler(s)/Kit(s):                                       | 4309/4021/4132/3158/23632               |                                        |                                                 |
| Date/Time sample(s) sent to storage:                    | 08/21/2014 1500                         |                                        |                                                 |
| Water - VOA vials have zero headspace?                  | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | No VOA vials submitted <input type="checkbox"/> |
| Water - pH acceptable upon receipt?                     | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> | N/A <input type="checkbox"/>                    |
| pH adjusted?                                            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | N/A <input type="checkbox"/>                    |
| pH adjusted by:                                         |                                         |                                        |                                                 |

Login Notes: MW-25: some bottles had sample ID as MW-5 but collection time of 18:05 matched with MW-25.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: 0 Regarding:

Comments:

Corrective Action:





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# Chain of Custody Form

Page 1 of 2

COC ID: 98435

ALS Project Manager:

HS14080747

Navajo Refining Company

Lovington Lea Refining - SA



| Customer Information                                                                                                                                                         |                         |                  |               | Project Information            |                                    |                                                                                                                                                                                                                                                                      |              | ALS Project Manager:              |                                                   |                   |   |   |   |   |   |   |        |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|------------------|---------------|--------------------------------|------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-----------------------------------|---------------------------------------------------|-------------------|---|---|---|---|---|---|--------|--|--|--|
| Purchase Order                                                                                                                                                               | 171658                  |                  |               | Project Name                   | Lovington Lea Refining Semi-Annual |                                                                                                                                                                                                                                                                      |              | A                                 | VOC (8260) Select                                 |                   |   |   |   |   |   |   |        |  |  |  |
| Work Order                                                                                                                                                                   |                         |                  |               | Project Number                 |                                    |                                                                                                                                                                                                                                                                      |              | B                                 | SVOC LL (8270) TCL+1-Methylnaphthalene            |                   |   |   |   |   |   |   |        |  |  |  |
| Company Name                                                                                                                                                                 | Navajo Refining Company |                  |               | Bill To Company                | Navajo Refining Company            |                                                                                                                                                                                                                                                                      |              | C                                 | Total Hg only (7470) Lab Filter 10 micron         |                   |   |   |   |   |   |   |        |  |  |  |
| Send Report To                                                                                                                                                               | Robert Combs            |                  |               | Invoice Attn                   | Robert Combs                       |                                                                                                                                                                                                                                                                      |              | D                                 | Dissolved Metals (6020/7000) Select Lab Filter 45 |                   |   |   |   |   |   |   |        |  |  |  |
| Address                                                                                                                                                                      | PO Box 159              |                  |               | Address                        | PO Box 159                         |                                                                                                                                                                                                                                                                      |              | E                                 | Anions (300) Cl, F, SO4                           |                   |   |   |   |   |   |   |        |  |  |  |
|                                                                                                                                                                              | 501 East Main           |                  |               |                                | 501 East Main                      |                                                                                                                                                                                                                                                                      |              | F                                 | Alkalinity (Carbonate/Bicarbonate)                |                   |   |   |   |   |   |   |        |  |  |  |
| City/State/Zip                                                                                                                                                               | Artesia, NM 88211       |                  |               | City/State/Zip                 | Artesia, NM 88211                  |                                                                                                                                                                                                                                                                      |              | G                                 | pH                                                |                   |   |   |   |   |   |   |        |  |  |  |
| Phone                                                                                                                                                                        | (575) 748-6733          |                  |               | Phone                          | (575) 748-6733                     |                                                                                                                                                                                                                                                                      |              | H                                 | Specific Conductance                              |                   |   |   |   |   |   |   |        |  |  |  |
| Fax                                                                                                                                                                          | (575) 748-5421          |                  |               | Fax                            | (575) 748-5421                     |                                                                                                                                                                                                                                                                      |              | I                                 | TDS                                               |                   |   |   |   |   |   |   |        |  |  |  |
| e-Mail Address                                                                                                                                                               | jsper@trcsolutions.com  |                  |               | e-Mail Address                 | robert.combs@hikufontier.com       |                                                                                                                                                                                                                                                                      |              | J                                 | Nitrate/Nitrite (300)                             |                   |   |   |   |   |   |   |        |  |  |  |
| No.                                                                                                                                                                          | Sample Description      | Date             | Time          | Matrix                         | Pres.                              | # Bottles                                                                                                                                                                                                                                                            | A            | B                                 | C                                                 | D                 | E | F | G | H | I | J | Hold   |  |  |  |
| 1                                                                                                                                                                            | MW-13                   | 8.17.14          | 1010          | W                              | 1,6,8                              | 9                                                                                                                                                                                                                                                                    | X            | X                                 | X                                                 | X                 | X | X | X | X | X | X |        |  |  |  |
| 2                                                                                                                                                                            | MW-16                   |                  | 1120          |                                |                                    | 9                                                                                                                                                                                                                                                                    | X            | X                                 | X                                                 | X                 | X | X | X | X | X | X |        |  |  |  |
| 3                                                                                                                                                                            | MW-5                    |                  | 1210          |                                |                                    | 27                                                                                                                                                                                                                                                                   | X            | X                                 | X                                                 | X                 | X | X | X | X | X | X | MS/MSD |  |  |  |
| 4                                                                                                                                                                            | MW-28                   |                  | 1345          |                                |                                    | 9                                                                                                                                                                                                                                                                    | X            | X                                 | X                                                 | X                 | X | X | X | X | X | X |        |  |  |  |
| 5                                                                                                                                                                            | MW-19                   |                  | 1510          |                                |                                    | 9                                                                                                                                                                                                                                                                    | X            | X                                 | X                                                 | X                 | X | X | X | X | X | X |        |  |  |  |
| 6                                                                                                                                                                            | MW-20                   |                  | 1600          |                                |                                    | 9                                                                                                                                                                                                                                                                    | X            | X                                 | X                                                 | X                 | X | X | X | X | X | X |        |  |  |  |
| 7                                                                                                                                                                            | MW-25                   |                  | 1805          |                                |                                    | 9                                                                                                                                                                                                                                                                    | X            | X                                 | X                                                 | X                 | X | X | X | X | X | X |        |  |  |  |
| 8                                                                                                                                                                            | MW-21                   |                  | 1900          |                                |                                    | 9                                                                                                                                                                                                                                                                    | X            | X                                 | X                                                 | X                 | X | X | X | X | X | X |        |  |  |  |
| 9                                                                                                                                                                            | Dup-1                   |                  | 2400          |                                |                                    | 9                                                                                                                                                                                                                                                                    | X            | X                                 | X                                                 | X                 | X | X | X | X | X | X |        |  |  |  |
| 10                                                                                                                                                                           | Dup-2                   |                  | 2400          |                                |                                    | 9                                                                                                                                                                                                                                                                    | X            | X                                 | X                                                 | X                 | X | X | X | X | X | X |        |  |  |  |
| Sampler(s) Please Print & Sign<br>Dana Clark                                                                                                                                 |                         |                  |               | Shipment Method<br>Fedex       |                                    | Required Turnaround Time: (Check Box)<br><input checked="" type="checkbox"/> Std 10 WK days <input type="checkbox"/> 5 WK Days <input type="checkbox"/> 2 WK Days <input type="checkbox"/> 24 Hour                                                                   |              |                                   |                                                   | Results Due Date: |   |   |   |   |   |   |        |  |  |  |
| Relinquished by:<br>Dana Clark                                                                                                                                               |                         | Date:<br>8/20/14 | Time:<br>1700 | Received by:<br>* 806038116370 |                                    | Notes: Lab Filter .45 micron - dissolved metals; 10 micron total metals<br>10 Day TAT ALS Project: Navajo - Lea Refinery Semi-Annual                                                                                                                                 |              |                                   |                                                   |                   |   |   |   |   |   |   |        |  |  |  |
| Relinquished by:                                                                                                                                                             |                         | Date:            | Time:         | Received by (Laboratory):      |                                    | Cooler ID                                                                                                                                                                                                                                                            | Cooler Temp. | QC Package: (Check One Box Below) |                                                   |                   |   |   |   |   |   |   |        |  |  |  |
| Logged by (Laboratory):                                                                                                                                                      |                         | Date:<br>8/21/14 | Time:<br>903  | Checked by (Laboratory):       |                                    | <input checked="" type="checkbox"/> Level 2 Std QC <input type="checkbox"/> TRRP ChkList<br><input type="checkbox"/> Level 3 Std QC/Row da <input type="checkbox"/> TRRP Level 4<br><input type="checkbox"/> Level 4 SW846/CLP<br><input type="checkbox"/> Other/EDD |              |                                   |                                                   |                   |   |   |   |   |   |   |        |  |  |  |
| Preservative Key: 1-HCl 2-HNO <sub>3</sub> 3-H <sub>2</sub> SO <sub>4</sub> 4-NaOH 5-Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> 6-NaHSO <sub>4</sub> 7-Other 8-4°C 9-5035 |                         |                  |               |                                |                                    |                                                                                                                                                                                                                                                                      |              |                                   |                                                   |                   |   |   |   |   |   |   |        |  |  |  |

- Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.  
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3. The Chain of Custody is a legal document. All information must be completed accurately.

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# Chain of Custody Form

Page 2 of 2

COC ID: 98434

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York, PA  
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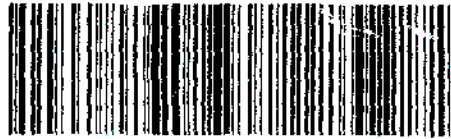
| Customer Information                                                                                                                                                         |                         | Project Information |                                    | ALS Project Manager: _____ ALS Work Order #: _____                                                                                                        |                                                    |                                                           |   |                   |   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|---------------------|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------|-----------------------------------------------------------|---|-------------------|---|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|------|--|--|--|
| Parameter/Method Request for Analysis                                                                                                                                        |                         |                     |                                    |                                                                                                                                                           |                                                    |                                                           |   |                   |   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| Purchase Order                                                                                                                                                               | 171658                  | Project Name        | Lovington Lea Refining Semi-Annual | A                                                                                                                                                         | VOC (8260) Select                                  |                                                           |   |                   |   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| Work Order                                                                                                                                                                   |                         | Project Number      |                                    | B                                                                                                                                                         | SVOC LL (8270) TCL+1-Methylnaphthalene             |                                                           |   |                   |   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| Company Name                                                                                                                                                                 | Navajo Refining Company | Bill To Company     | Navajo Refining Company            | C                                                                                                                                                         | Total Hg only (7470) Lab Filter 10 micron          |                                                           |   |                   |   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| Send Report To                                                                                                                                                               | Robert Combs            | Invoice Attn        | Robert Combs                       | D                                                                                                                                                         | Dissolved Metals (6020/7000) Select Lab Filter .45 |                                                           |   |                   |   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| Address                                                                                                                                                                      | PO Box 159              | Address             | PO Box 159                         | E                                                                                                                                                         | Anions (300) Cl, F, SO4                            |                                                           |   |                   |   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
|                                                                                                                                                                              | 501 East Main           |                     | 501 East Main                      | F                                                                                                                                                         | Alkalinity (Carbonate/Bicarbonate)                 |                                                           |   |                   |   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| City/State/Zip                                                                                                                                                               | Artesia, NM 88211       | City/State/Zip      | Artesia, NM 88211                  | G                                                                                                                                                         | pH                                                 |                                                           |   |                   |   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| Phone                                                                                                                                                                        | (575) 748-6733          | Phone               | (575) 748-6733                     | H                                                                                                                                                         | Specific Conductance                               |                                                           |   |                   |   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| Fax                                                                                                                                                                          | (575) 748-5421          | Fax                 | (575) 748-5421                     | I                                                                                                                                                         | TDS                                                |                                                           |   |                   |   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| e-Mail Address                                                                                                                                                               | jspeer@truelove.com     | e-Mail Address      | robert.combs@hillcountry.com       | J                                                                                                                                                         | Nitrate/Nitrite (300)                              |                                                           |   |                   |   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| No.                                                                                                                                                                          | Sample Description      | Date                | Time                               | Matrix                                                                                                                                                    | Pres.                                              | # Bottles                                                 | A | B                 | C | D                                                                                                                                                                                                                                                                    | E | F | G | H | I | J | Hold |  |  |  |
| 1                                                                                                                                                                            | MW-11                   | 8.20.14             | 0745                               | W                                                                                                                                                         | 1,6,8                                              | 6                                                         | X |                   | X | X                                                                                                                                                                                                                                                                    |   |   |   |   |   |   | X    |  |  |  |
| 2                                                                                                                                                                            | MW-12                   |                     | 0855                               |                                                                                                                                                           |                                                    | 9                                                         | X | X                 | X | X                                                                                                                                                                                                                                                                    | X | X | X | X | X | X | X    |  |  |  |
| 3                                                                                                                                                                            | MW-14                   |                     | 0845                               |                                                                                                                                                           |                                                    | 7                                                         | X |                   | X | X                                                                                                                                                                                                                                                                    |   |   |   |   |   | X | X    |  |  |  |
| 4                                                                                                                                                                            | MW-22                   |                     | 1150                               |                                                                                                                                                           |                                                    | 9                                                         | X | X                 | X | X                                                                                                                                                                                                                                                                    | X | X | X | X | X | X | X    |  |  |  |
| 5                                                                                                                                                                            | MW-18                   |                     | 1345                               |                                                                                                                                                           |                                                    | 8                                                         | X | X                 | X | X                                                                                                                                                                                                                                                                    | X | X | X | X | X | X | X    |  |  |  |
| 6                                                                                                                                                                            |                         |                     |                                    |                                                                                                                                                           |                                                    |                                                           |   |                   |   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| 7                                                                                                                                                                            |                         |                     |                                    |                                                                                                                                                           |                                                    |                                                           |   |                   |   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| 8                                                                                                                                                                            |                         |                     |                                    |                                                                                                                                                           |                                                    |                                                           |   |                   |   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| 9                                                                                                                                                                            |                         |                     |                                    |                                                                                                                                                           |                                                    |                                                           |   |                   |   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| 10                                                                                                                                                                           |                         |                     |                                    |                                                                                                                                                           |                                                    |                                                           |   |                   |   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| Sampler(s) Please Print & Sign                                                                                                                                               |                         | Shipment Method     |                                    | Required Turnaround Time: (Check Box)                                                                                                                     |                                                    |                                                           |   | Results Due Date: |   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| Danya Clark                                                                                                                                                                  |                         | Fedex               |                                    | <input checked="" type="checkbox"/> Std 10-WK days <input type="checkbox"/> 5 WK Days <input type="checkbox"/> 2 WK Days <input type="checkbox"/> 24 Hour |                                                    |                                                           |   |                   |   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| Relinquished by:                                                                                                                                                             |                         | Date:               | Time:                              | Received by:                                                                                                                                              |                                                    | Notes:                                                    |   |                   |   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| Danya Clark                                                                                                                                                                  |                         | 8.20.14             | 1017-00                            | * 8060 3011 6370                                                                                                                                          |                                                    | Lab Filter Metals: 0.45 micron-dissolved; 10 micron total |   |                   |   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| Relinquished by:                                                                                                                                                             |                         | Date:               | Time:                              | Received by (Laboratory):                                                                                                                                 |                                                    | Cooler ID                                                 |   | Cooler Temp.      |   | QC Package: (Check One Box Below)                                                                                                                                                                                                                                    |   |   |   |   |   |   |      |  |  |  |
| Logged by (Laboratory):                                                                                                                                                      |                         | Date:               | Time:                              | Checked by (Laboratory):                                                                                                                                  |                                                    |                                                           |   |                   |   | <input checked="" type="checkbox"/> Level 2 Std QC <input type="checkbox"/> TRRP ChkList<br><input type="checkbox"/> Level 3 Std QC/Row da <input type="checkbox"/> TRRP Level 4<br><input type="checkbox"/> Level 4 SW846/CLP<br><input type="checkbox"/> Other/EDD |   |   |   |   |   |   |      |  |  |  |
| Preservative Key: 1-HCl 2-HNO <sub>3</sub> 3-H <sub>2</sub> SO <sub>4</sub> 4-NaOH 5-Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> 6-NaHSO <sub>3</sub> 7-Other 8-4°C 9-5035 |                         |                     |                                    |                                                                                                                                                           |                                                    |                                                           |   |                   |   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

2. Unless otherwise agreed in a formal contract, services provided by ALS Environmental are expressly limited to the terms and conditions stated on the reverse.

3. The Chain of Custody is a legal document. All information must be completed accurately.

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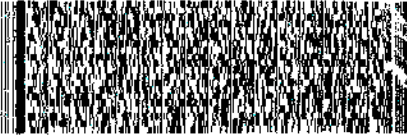
TX-US  
IAH  
77099

**AB SGRA**

## MASTER ##

THU - 21 AUG 10:30A  
PRIORITY OVERNIGHT

TPK# 8060 3811 6370  
1 of 6



ALS LAB  
10450 STANCLIFF RD  
STE 210  
HOUSTON TX 77099

TO CLIENT SERVICES

UNITED STATES LG

ORIGIN ID: A08A

SHIP DATE: 20AUG14  
ACTUAL: SA 0 LB  
CNO: POSISOL  
DIM: 24x14x1 IN  
BILL RECEIPT

43041

|                                                                                                                                                                                                                      |                     |            |                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------|-----------------|
|  <b>ALS Environmental</b><br>10450 Standliff Rd., Suite 210<br>Houston, Texas 77099<br>Tel. +1 281 530 5656<br>Fax. +1 281 530 5887 | <b>CUSTODY SEAL</b> |            | Seal Broken By: |
|                                                                                                                                                                                                                      | Date: 8/23/14       | Time: 1710 | 506             |
|                                                                                                                                                                                                                      | Name: D. Clark      |            | Date: 08/23/14  |
|                                                                                                                                                                                                                      | Company: TRC        |            |                 |

40211

|                                                                                                                                                                                                                      |                     |            |                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------|-----------------|
|  <b>ALS Environmental</b><br>10450 Standliff Rd., Suite 210<br>Houston, Texas 77099<br>Tel. +1 281 530 5656<br>Fax. +1 281 530 5887 | <b>CUSTODY SEAL</b> |            | Seal Broken By: |
|                                                                                                                                                                                                                      | Date: 8/20/14       | Time: 1710 | 506             |
|                                                                                                                                                                                                                      | Name: D. Clark      |            | Date:           |
|                                                                                                                                                                                                                      | Company: TRC        |            |                 |

41321

|                                                                                                                                                                                                                      |                     |            |                 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------|-----------------|
|  <b>ALS Environmental</b><br>10450 Standliff Rd., Suite 210<br>Houston, Texas 77099<br>Tel. +1 281 530 5656<br>Fax. +1 281 530 5887 | <b>CUSTODY SEAL</b> |            | Seal Broken By: |
|                                                                                                                                                                                                                      | Date: 8/20/14       | Time: 1710 | 506             |
|                                                                                                                                                                                                                      | Name: D. Clark      |            | Date:           |
|                                                                                                                                                                                                                      | Company: TRC        |            |                 |

31581

|                                                                                                                                                                                                                       |                     |            |                 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------|-----------------|
|  <b>ALS Environmental</b><br>10450 Standliff Rd., Suite 210<br>Houston, Texas 77099<br>Tel. +1 281 530 5656<br>Fax. +1 281 530 5887 | <b>CUSTODY SEAL</b> |            | Seal Broken By: |
|                                                                                                                                                                                                                       | Date: 8/20/14       | Time: 1710 | 506             |
|                                                                                                                                                                                                                       | Name: D. Clark      |            | Date: 08/21/14  |
|                                                                                                                                                                                                                       | Company: TRC        |            |                 |

236321

|                                                                                                                                                                                                                        |                     |            |                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------|-----------------|
|  <b>ALS Environmental</b><br>10450 Standliff Rd., Suite 210<br>Houston, Texas 77099<br>Tel. +1 281 530 5656<br>Fax. +1 281 530 5887 | <b>CUSTODY SEAL</b> |            | Seal Broken By: |
|                                                                                                                                                                                                                        | Date: 8/22/14       | Time: 1710 |                 |
|                                                                                                                                                                                                                        | Name: D. Clark      |            | Date:           |
|                                                                                                                                                                                                                        | Company: TRC        |            |                 |

41241

|                                                                                                                                                                                                                        |                     |            |                 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|------------|-----------------|
|  <b>ALS Environmental</b><br>10450 Standliff Rd., Suite 210<br>Houston, Texas 77099<br>Tel. +1 281 530 5656<br>Fax. +1 281 530 5887 | <b>CUSTODY SEAL</b> |            | Seal Broken By: |
|                                                                                                                                                                                                                        | Date: 8/20/14       | Time: 1710 |                 |
|                                                                                                                                                                                                                        | Name: D. Clark      |            | Date:           |
|                                                                                                                                                                                                                        | Company: TRC        |            |                 |



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10450 Stancliff Rd. Suite 210  
Houston, TX 77099  
T: +1 281 530 5656  
F: +1 281 530 5887  
www.alsglobal.com

September 12, 2014

Robert Combs  
Navajo Refining Company  
PO Box 1490  
Artesia, NM 88211-1490

Work Order: **HS14080845**

Laboratory Results for: **Lovington Lea Refining - SA**

Dear Robert,

ALS Environmental received 26 sample(s) on Aug 23, 2014 for the analysis presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested. Results are expressed as "as received" unless otherwise noted.

QC sample results for this data met EPA or laboratory specifications except as noted in the Case Narrative or as noted with qualifiers in the QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained by ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

If you have any questions regarding this report, please feel free to call me.

Sincerely,

A handwritten signature in black ink that reads "Bethany McDaniel".

Generated By: Bethany.McDaniel  
Bethany McDaniel  
Project Manager



**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining - SA  
**Work Order:** HS14080845

**SAMPLE SUMMARY**

| Lab Samp ID   | Client Sample ID | Matrix      | TagNo | Collection Date   | Date Received     | Hold                     |
|---------------|------------------|-------------|-------|-------------------|-------------------|--------------------------|
| HS14080845-01 | MW-29            | Groundwater |       | 20-Aug-2014 19:00 | 23-Aug-2014 09:15 | <input type="checkbox"/> |
| HS14080845-02 | MW-4             | Groundwater |       | 20-Aug-2014 19:15 | 23-Aug-2014 09:15 | <input type="checkbox"/> |
| HS14080845-03 | MW-23            | Groundwater |       | 21-Aug-2014 08:35 | 23-Aug-2014 09:15 | <input type="checkbox"/> |
| HS14080845-04 | MW-24            | Groundwater |       | 21-Aug-2014 10:30 | 23-Aug-2014 09:15 | <input type="checkbox"/> |
| HS14080845-05 | MW-3             | Groundwater |       | 21-Aug-2014 12:20 | 23-Aug-2014 09:15 | <input type="checkbox"/> |
| HS14080845-06 | MW-26            | Groundwater |       | 21-Aug-2014 14:05 | 23-Aug-2014 09:15 | <input type="checkbox"/> |
| HS14080845-07 | MW-9             | Groundwater |       | 21-Aug-2014 16:10 | 23-Aug-2014 09:15 | <input type="checkbox"/> |
| HS14080845-08 | MW-10            | Groundwater |       | 21-Aug-2014 17:50 | 23-Aug-2014 09:15 | <input type="checkbox"/> |
| HS14080845-09 | EB-08-21-14-A    | Groundwater |       | 21-Aug-2014 19:05 | 23-Aug-2014 09:15 | <input type="checkbox"/> |
| HS14080845-10 | MW-7             | Groundwater |       | 21-Aug-2014 08:05 | 23-Aug-2014 09:15 | <input type="checkbox"/> |
| HS14080845-11 | RW-1             | Groundwater |       | 21-Aug-2014 09:25 | 23-Aug-2014 09:15 | <input type="checkbox"/> |
| HS14080845-12 | MW-1             | Groundwater |       | 21-Aug-2014 10:30 | 23-Aug-2014 09:15 | <input type="checkbox"/> |
| HS14080845-13 | MW-6             | Groundwater |       | 21-Aug-2014 11:55 | 23-Aug-2014 09:15 | <input type="checkbox"/> |
| HS14080845-14 | MW-15            | Groundwater |       | 21-Aug-2014 13:35 | 23-Aug-2014 09:15 | <input type="checkbox"/> |
| HS14080845-15 | DUP-3            | Groundwater |       | 21-Aug-2014 00:00 | 23-Aug-2014 09:15 | <input type="checkbox"/> |
| HS14080845-16 | MW-2             | Groundwater |       | 21-Aug-2014 16:05 | 23-Aug-2014 09:15 | <input type="checkbox"/> |
| HS14080845-17 | MW-27            | Groundwater |       | 21-Aug-2014 17:25 | 23-Aug-2014 09:15 | <input type="checkbox"/> |
| HS14080845-18 | MW-8             | Groundwater |       | 21-Aug-2014 18:45 | 23-Aug-2014 09:15 | <input type="checkbox"/> |
| HS14080845-19 | WW-SOUTH         | Groundwater |       | 22-Aug-2014 09:00 | 23-Aug-2014 09:15 | <input type="checkbox"/> |
| HS14080845-20 | DUP-4            | Groundwater |       | 22-Aug-2014 00:00 | 23-Aug-2014 09:15 | <input type="checkbox"/> |
| HS14080845-21 | WW-EAST          | Groundwater |       | 22-Aug-2014 10:20 | 23-Aug-2014 09:15 | <input type="checkbox"/> |
| HS14080845-22 | WW-NORTH         | Groundwater |       | 22-Aug-2014 11:20 | 23-Aug-2014 09:15 | <input type="checkbox"/> |
| HS14080845-23 | MW-30            | Groundwater |       | 22-Aug-2014 08:15 | 23-Aug-2014 09:15 | <input type="checkbox"/> |
| HS14080845-24 | MW-17R           | Groundwater |       | 22-Aug-2014 10:05 | 23-Aug-2014 09:15 | <input type="checkbox"/> |
| HS14080845-25 | EB-8-22-14-A     | Groundwater |       | 22-Aug-2014 11:30 | 23-Aug-2014 09:15 | <input type="checkbox"/> |
| HS14080845-26 | TB-08-22-14-A    | Water       |       | 22-Aug-2014 00:00 | 23-Aug-2014 09:15 | <input type="checkbox"/> |

**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining - SA  
**Work Order:** HS14080845

**CASE NARRATIVE**

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**Work Order Comments**

- Sample received outside method holding time for pH. pH is an immediate test. Sample results are flagged with an "H" qualifier.
- The temperature at the time of pH is reported. Please note that all pH results are already normalized to a temperature of 25 °C.

---

**GCMS Semivolatiles by Method SW8270****Batch ID: 85458**

- Sample ID: **LCSD-85458**
- The RPD between the LCS and LCSD was outside of the control limit.

**Batch ID: 85507**

- Sample ID: **LCSD-85507**
- The RPD between the LCS and LCSD was outside of the control limit.

---

**GCMS Volatiles by Method SW8260****Batch ID: R240062**

- Sample ID: **WW-East (HS14080845-21)**
- The recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) associated to this analyte was outside of the established control limits.

**Batch ID: R240113**

- Sample ID: **RW-1 (HS14080845-11)**
- The recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) associated to this analyte was outside of the established control limits.

**Batch ID: R240229**

- Sample ID: **VSTD050**
- 2-Chlorotoluene exceeded %D limits for CCV. LCS is OK samples are ND for this compound.
- Sample ID: **HS14090013-01**
- MS and MSD are for an unrelated sample.

**Batch ID: R240325**

- Sample ID: **DUP-4 (HS14080845-20)**
- The recovery of the Matrix Spike (MS) or Matrix Spike Duplicate (MSD) associated to this analyte was outside of the established control limits.

---

**Metals by Method SW6020****Batch ID: 85499**

- Sample ID: **HS14080747-03**
- MS, MSD, DUP, PDS and SD are for an unrelated sample.

**Batch ID: 85523**

- Sample ID: **WW-EAST (HS14080845-21MS)**
- The MS and/or MSD recovery was outside of the control; however, the result in the parent sample is greater than 4x the spike amount. Ca, Na, Sr
- Sample ID: **WW-EAST (HS14080845-21DUP)**
- The RPD between the sample and its duplicate was outside the control limit. Mn, Zn
- Sample ID: **WW-EAST (HS14080845-21BS)**
- Bench spike recovery was outside of the control; however, the result in the parent sample is greater than 4x the spike amount for Ca, Mg, Na and Sr

---

**Metals by Method SW7470****Batch ID: 85453,85580**

**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining - SA  
**Work Order:** HS14080845

**CASE NARRATIVE**

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**Metals by Method SW7470****Batch ID: 85453,85580**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

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**WetChemistry by Method E300****Batch ID: R240459**

Sample ID: **WW-East- (HS14080845-21)**

- The matrix spike recovery was outside of the control limit. However, the matrix spike duplicate recovery and the RPD between the MS and MSD were in control.

**Batch ID: R240464**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

**Batch ID: R240466**

Sample ID: **WW-EAST (HS14080845-21MS)**

- The MS and/or MSD recovery was below the lower control limit.

**Batch ID: R240509**

Sample ID: **MW-3(HS14080845-20)**

- The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The recovery of the MS may be due to sample matrix interference.

Sample ID: **MW-3(HS14080845-20)**

- The recovery of the Matrix Spike Duplicate (MSD) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The failed recovery of the MSD may be due to sample matrix interference.

**Batch ID: R240510**

Sample ID: **MW-3 (HS14080845-05)**

- The recovery of the Matrix Spike (MS) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The recovery of the MS may be due to sample matrix interference.

Sample ID: **MW-3 (HS14080845-05)**

- The recovery of the Matrix Spike Duplicate (MSD) associated to this analyte was outside of the established control limits. However, the LCS was within control limits. The failed recovery of the MSD may be due to sample matrix interference.

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**WetChemistry by Method SM2320B****Batch ID: R240188,R240330**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

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**WetChemistry by Method M2510 B****Batch ID: R240187,R240329**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.

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**WetChemistry by Method M2540C****Batch ID: R239983,R240114,R240131,R240150**

- The test results meet requirements of the current NELAP standards, state requirements or programs where applicable.
-



Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-29  
 Collection Date: 20-Aug-2014 19:00

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-01  
 Matrix:Groundwater

| ANALYSES                   | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| 1,1,2,2-Tetrachloroethane  | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| 1,1,2-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| 1,1-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| 1,1-Dichloroethene         | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| 1,2,4-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| 1,2-Dibromoethane          | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| 1,2-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| 1,2-Dichloropropane        | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| 1,3,5-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| 2-Butanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 28-Aug-2014 22:07 |
| 2-Hexanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 28-Aug-2014 22:07 |
| 4-Isopropyltoluene         | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| 4-Methyl-2-pentanone       | ND     |                      | 0.010           | mg/L        | 1                  | 28-Aug-2014 22:07 |
| Acetone                    | ND     |                      | 0.010           | mg/L        | 1                  | 28-Aug-2014 22:07 |
| Benzene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| Bromodichloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| Bromoform                  | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| Bromomethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| Carbon disulfide           | ND     |                      | 0.010           | mg/L        | 1                  | 28-Aug-2014 22:07 |
| Carbon tetrachloride       | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| Chlorobenzene              | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| Chloroethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| Chloroform                 | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| Chloromethane              | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| cis-1,2-Dichloroethene     | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| cis-1,3-Dichloropropene    | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| Dibromochloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| Ethylbenzene               | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| Isopropylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| m,p-Xylene                 | ND     |                      | 0.010           | mg/L        | 1                  | 28-Aug-2014 22:07 |
| Methyl tert-butyl ether    | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| Methylene chloride         | ND     |                      | 0.010           | mg/L        | 1                  | 28-Aug-2014 22:07 |
| Naphthalene                | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| n-Butylbenzene             | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| n-Propylbenzene            | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| o-Xylene                   | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| sec-Butylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| Styrene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| Tetrachloroethene          | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| Toluene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| trans-1,2-Dichloroethene   | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-29  
Collection Date: 20-Aug-2014 19:00

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
Lab ID:HS14080845-01  
Matrix:Groundwater

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 28-Aug-2014 22:07 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 28-Aug-2014 22:07 |
| Surr: 1,2-Dichloroethane-d4 | 102    |                      | 70-125          | %REC        | 1                  | 28-Aug-2014 22:07 |
| Surr: 4-Bromofluorobenzene  | 100    |                      | 72-125          | %REC        | 1                  | 28-Aug-2014 22:07 |
| Surr: Dibromofluoromethane  | 102    |                      | 71-125          | %REC        | 1                  | 28-Aug-2014 22:07 |
| Surr: Toluene-d8            | 103    |                      | 75-125          | %REC        | 1                  | 28-Aug-2014 22:07 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-29  
 Collection Date: 20-Aug-2014 19:00

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-01  
 Matrix:Groundwater

| ANALYSES                       | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|--------------------------------|--------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b> |        | <b>Method:SW8270</b> |                 | Prep:SW3510 / 25-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                  | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| 1-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| 2,4,5-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| 2,4,6-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| 2,4-Dichlorophenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| 2,4-Dimethylphenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| 2,4-Dinitrophenol              | ND     |                      | 1.0             | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| 2,4-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| 2,6-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| 2-Chloronaphthalene            | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| 2-Chlorophenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| 2-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| 2-Methylphenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| 2-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| 2-Nitrophenol                  | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| 3&4-Methylphenol               | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| 3,3'-Dichlorobenzidine         | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| 3-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| 4,6-Dinitro-2-methylphenol     | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| 4-Bromophenyl phenyl ether     | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| 4-Chloro-3-methylphenol        | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| 4-Chloroaniline                | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| 4-Chlorophenyl phenyl ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| 4-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| 4-Nitrophenol                  | ND     |                      | 1.0             | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Acenaphthene                   | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Acenaphthylene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Acetophenone                   | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Anthracene                     | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Atrazine                       | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Benz(a)anthracene              | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Benzaldehyde                   | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Benzo(a)pyrene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Benzo(b)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Benzo(g,h,i)perylene           | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Benzo(k)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Bis(2-chloroethoxy)methane     | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Bis(2-chloroethyl)ether        | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Bis(2-chloroisopropyl)ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Bis(2-ethylhexyl)phthalate     | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Butyl benzyl phthalate         | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Caprolactam                    | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-29  
 Collection Date: 20-Aug-2014 19:00

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-01  
 Matrix:Groundwater

| ANALYSES                           | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 25-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Chrysene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Dibenz(a,h)anthracene              | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Dibenzofuran                       | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Diethyl phthalate                  | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Dimethyl phthalate                 | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Di-n-butyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Di-n-octyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Fluoranthene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Fluorene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Hexachlorobenzene                  | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Hexachlorobutadiene                | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Hexachlorocyclopentadiene          | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Hexachloroethane                   | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Indeno(1,2,3-cd)pyrene             | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Isophorone                         | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Naphthalene                        | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Nitrobenzene                       | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| N-Nitrosodi-n-propylamine          | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| N-Nitrosodiphenylamine             | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Pentachlorophenol                  | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Phenanthrene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Phenol                             | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Pyrene                             | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:14 |
| Surr: 2,4,6-Tribromophenol         | 82.3   |                       | 34-129          | %REC                      | 1                  | 26-Aug-2014 17:14 |
| Surr: 2-Fluorobiphenyl             | 68.5   |                       | 40-125          | %REC                      | 1                  | 26-Aug-2014 17:14 |
| Surr: 2-Fluorophenol               | 63.3   |                       | 20-120          | %REC                      | 1                  | 26-Aug-2014 17:14 |
| Surr: 4-Terphenyl-d14              | 83.1   |                       | 40-135          | %REC                      | 1                  | 26-Aug-2014 17:14 |
| Surr: Nitrobenzene-d5              | 63.5   |                       | 41-120          | %REC                      | 1                  | 26-Aug-2014 17:14 |
| Surr: Phenol-d6                    | 63.2   |                       | 20-120          | %REC                      | 1                  | 26-Aug-2014 17:14 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method:SM2320B</b> |                 |                           |                    | Analyst: MYC      |
| Alkalinity, Bicarbonate (As CaCO3) | 250    |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 12:08 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 12:08 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 12:08 |
| Alkalinity, Total (As CaCO3)       | 250    |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 12:08 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-29  
 Collection Date: 20-Aug-2014 19:00

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-01  
 Matrix:Groundwater

| ANALYSES                                     | RESULT  | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |         | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 0.188   |                          | 0.0100          | mg/L                       | 1                  | 04-Sep-2014 18:04 |
| Arsenic                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:04 |
| Barium                                       | 0.106   |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:04 |
| Boron                                        | 0.134   |                          | 0.0200          | mg/L                       | 1                  | 05-Sep-2014 18:30 |
| Cadmium                                      | ND      |                          | 0.00200         | mg/L                       | 1                  | 04-Sep-2014 18:04 |
| Calcium                                      | 128     |                          | 0.500           | mg/L                       | 1                  | 04-Sep-2014 18:04 |
| Chromium                                     | 0.331   |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:04 |
| Cobalt                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:04 |
| Copper                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:04 |
| Iron                                         | 0.697   |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:04 |
| Lead                                         | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:04 |
| Magnesium                                    | 17.9    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:04 |
| Manganese                                    | 0.0754  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:04 |
| Molybdenum                                   | 0.00594 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:04 |
| Nickel                                       | 0.0777  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:04 |
| Potassium                                    | 2.59    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:04 |
| Selenium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:04 |
| Silver                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:04 |
| Sodium                                       | 62.7    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:04 |
| Uranium                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:04 |
| Zinc                                         | 0.00902 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:04 |
| <b>MERCURY BY SW7470A</b>                    |         | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 25-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND      |                          | 0.000200        | mg/L                       | 1                  | 25-Aug-2014 15:07 |
| <b>PH BY SM4500H+ B</b>                      |         | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 7.71    | H                        | 0.100           | pH Units                   | 1                  | 02-Sep-2014 12:08 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |         | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 1,140   |                          | 5.00            | umhos/cm                   | 1                  | 02-Sep-2014 12:08 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |         | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 826     |                          | 10.0            | mg/L                       | 1                  | 26-Aug-2014 18:00 |
| <b>ANIONS BY E300.0</b>                      |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 177     |                          | 2.50            | mg/L                       | 5                  | 07-Sep-2014 02:52 |
| Fluoride                                     | 0.809   |                          | 0.100           | mg/L                       | 1                  | 07-Sep-2014 02:30 |
| Sulfate                                      | 72.9    |                          | 0.500           | mg/L                       | 1                  | 07-Sep-2014 02:30 |
| <b>NITRATE/NITRITE BY E300.0</b>             |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 3.44    |                          | 1.00            | mg/L                       | 5                  | 07-Sep-2014 18:03 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-4  
 Collection Date: 20-Aug-2014 19:15

**ANALYTICAL REPORT**

WorkOrder: HS14080845  
 Lab ID: HS14080845-02  
 Matrix: Groundwater

| ANALYSES                   | RESULT                | QUAL | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|-----------------------|------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> | <b>Method: SW8260</b> |      |                 |             |                    | Analyst: PC       |
| 1,1,1-Trichloroethane      | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| 1,1,2,2-Tetrachloroethane  | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| 1,1,2-Trichloroethane      | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| 1,1-Dichloroethane         | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| 1,1-Dichloroethene         | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| 1,2,4-Trimethylbenzene     | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| 1,2-Dibromoethane          | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| 1,2-Dichloroethane         | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| 1,2-Dichloropropane        | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| 1,3,5-Trimethylbenzene     | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| 2-Butanone                 | ND                    |      | 0.010           | mg/L        | 1                  | 28-Aug-2014 22:34 |
| 2-Hexanone                 | ND                    |      | 0.010           | mg/L        | 1                  | 28-Aug-2014 22:34 |
| 4-Isopropyltoluene         | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| 4-Methyl-2-pentanone       | ND                    |      | 0.010           | mg/L        | 1                  | 28-Aug-2014 22:34 |
| <b>Acetone</b>             | <b>0.054</b>          |      | <b>0.010</b>    | <b>mg/L</b> | 1                  | 28-Aug-2014 22:34 |
| Benzene                    | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| Bromodichloromethane       | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| Bromoform                  | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| Bromomethane               | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| Carbon disulfide           | ND                    |      | 0.010           | mg/L        | 1                  | 28-Aug-2014 22:34 |
| Carbon tetrachloride       | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| Chlorobenzene              | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| Chloroethane               | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| Chloroform                 | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| Chloromethane              | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| cis-1,2-Dichloroethene     | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| cis-1,3-Dichloropropene    | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| Dibromochloromethane       | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| Ethylbenzene               | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| Isopropylbenzene           | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| m,p-Xylene                 | ND                    |      | 0.010           | mg/L        | 1                  | 28-Aug-2014 22:34 |
| Methyl tert-butyl ether    | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| Methylene chloride         | ND                    |      | 0.010           | mg/L        | 1                  | 28-Aug-2014 22:34 |
| Naphthalene                | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| n-Butylbenzene             | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| n-Propylbenzene            | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| o-Xylene                   | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| sec-Butylbenzene           | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| Styrene                    | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| Tetrachloroethene          | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| Toluene                    | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |
| trans-1,2-Dichloroethene   | ND                    |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 22:34 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-4  
Collection Date: 20-Aug-2014 19:15

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
Lab ID:HS14080845-02  
Matrix:Groundwater

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 |       |                    | Analyst: PC       |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 22:34 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 22:34 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L  | 1                  | 28-Aug-2014 22:34 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L  | 1                  | 28-Aug-2014 22:34 |
| Surr: 1,2-Dichloroethane-d4 | 102    |                      | 70-125          | %REC  | 1                  | 28-Aug-2014 22:34 |
| Surr: 4-Bromofluorobenzene  | 102    |                      | 72-125          | %REC  | 1                  | 28-Aug-2014 22:34 |
| Surr: Dibromofluoromethane  | 101    |                      | 71-125          | %REC  | 1                  | 28-Aug-2014 22:34 |
| Surr: Toluene-d8            | 104    |                      | 75-125          | %REC  | 1                  | 28-Aug-2014 22:34 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-4  
 Collection Date: 20-Aug-2014 19:15

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-02  
 Matrix:Groundwater

| ANALYSES                          | RESULT      | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------------|-------------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>    |             | <b>Method:SW8270</b> |                 | Prep:SW3510 / 25-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                     | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| 1-Methylnaphthalene               | ND          |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| 2,4,5-Trichlorophenol             | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| 2,4,6-Trichlorophenol             | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| 2,4-Dichlorophenol                | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| 2,4-Dimethylphenol                | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| 2,4-Dinitrophenol                 | ND          |                      | 1.0             | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| 2,4-Dinitrotoluene                | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| 2,6-Dinitrotoluene                | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| 2-Chloronaphthalene               | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| 2-Chlorophenol                    | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| 2-Methylnaphthalene               | ND          |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| 2-Methylphenol                    | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| 2-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| 2-Nitrophenol                     | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| 3&4-Methylphenol                  | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| 3,3'-Dichlorobenzidine            | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| 3-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| 4,6-Dinitro-2-methylphenol        | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| 4-Bromophenyl phenyl ether        | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| 4-Chloro-3-methylphenol           | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| 4-Chloroaniline                   | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| 4-Chlorophenyl phenyl ether       | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| 4-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| 4-Nitrophenol                     | ND          |                      | 1.0             | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Acenaphthene                      | ND          |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Acenaphthylene                    | ND          |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Acetophenone                      | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Anthracene                        | ND          |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Atrazine                          | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Benz(a)anthracene                 | ND          |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Benzaldehyde                      | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Benzo(a)pyrene                    | ND          |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Benzo(b)fluoranthene              | ND          |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Benzo(g,h,i)perylene              | ND          |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Benzo(k)fluoranthene              | ND          |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Bis(2-chloroethoxy)methane        | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Bis(2-chloroethyl)ether           | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Bis(2-chloroisopropyl)ether       | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>0.94</b> |                      | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 26-Aug-2014 17:33 |
| Butyl benzyl phthalate            | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| <b>Caprolactam</b>                | <b>0.34</b> |                      | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 26-Aug-2014 17:33 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-4  
 Collection Date: 20-Aug-2014 19:15

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-02  
 Matrix:Groundwater

| ANALYSES                           | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 25-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Chrysene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Dibenz(a,h)anthracene              | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Dibenzofuran                       | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Diethyl phthalate                  | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Dimethyl phthalate                 | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Di-n-butyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Di-n-octyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Fluoranthene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Fluorene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Hexachlorobenzene                  | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Hexachlorobutadiene                | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Hexachlorocyclopentadiene          | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Hexachloroethane                   | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Indeno(1,2,3-cd)pyrene             | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Isophorone                         | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Naphthalene                        | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Nitrobenzene                       | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| N-Nitrosodi-n-propylamine          | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| N-Nitrosodiphenylamine             | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Pentachlorophenol                  | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Phenanthrene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Phenol                             | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Pyrene                             | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:33 |
| Surr: 2,4,6-Tribromophenol         | 80.5   |                       | 34-129          | %REC                      | 1                  | 26-Aug-2014 17:33 |
| Surr: 2-Fluorobiphenyl             | 61.6   |                       | 40-125          | %REC                      | 1                  | 26-Aug-2014 17:33 |
| Surr: 2-Fluorophenol               | 61.3   |                       | 20-120          | %REC                      | 1                  | 26-Aug-2014 17:33 |
| Surr: 4-Terphenyl-d14              | 79.6   |                       | 40-135          | %REC                      | 1                  | 26-Aug-2014 17:33 |
| Surr: Nitrobenzene-d5              | 60.9   |                       | 41-120          | %REC                      | 1                  | 26-Aug-2014 17:33 |
| Surr: Phenol-d6                    | 58.5   |                       | 20-120          | %REC                      | 1                  | 26-Aug-2014 17:33 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method:SM2320B</b> |                 | Analyst: MYC              |                    |                   |
| Alkalinity, Bicarbonate (As CaCO3) | 196    |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 12:19 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 12:19 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 12:19 |
| Alkalinity, Total (As CaCO3)       | 196    |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 12:19 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-4  
 Collection Date: 20-Aug-2014 19:15

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-02  
 Matrix:Groundwater

| ANALYSES                                     | RESULT  | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |         | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 0.603   |                          | 0.0100          | mg/L                       | 1                  | 04-Sep-2014 18:07 |
| Arsenic                                      | 0.00501 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:07 |
| Barium                                       | 0.213   |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:07 |
| Boron                                        | 0.111   |                          | 0.0200          | mg/L                       | 1                  | 05-Sep-2014 18:32 |
| Cadmium                                      | ND      |                          | 0.00200         | mg/L                       | 1                  | 04-Sep-2014 18:07 |
| Calcium                                      | 67.5    |                          | 0.500           | mg/L                       | 1                  | 04-Sep-2014 18:07 |
| Chromium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:07 |
| Cobalt                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:07 |
| Copper                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:07 |
| Iron                                         | 0.241   |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:07 |
| Lead                                         | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:07 |
| Magnesium                                    | 8.12    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:07 |
| Manganese                                    | 0.00595 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:07 |
| Molybdenum                                   | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:07 |
| Nickel                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:07 |
| Potassium                                    | 2.20    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:07 |
| Selenium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:07 |
| Silver                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:07 |
| Sodium                                       | 33.5    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:07 |
| Uranium                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:07 |
| Zinc                                         | 0.0221  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:07 |
| <b>MERCURY BY SW7470A</b>                    |         | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 25-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND      |                          | 0.000200        | mg/L                       | 1                  | 25-Aug-2014 15:09 |
| <b>PH BY SM4500H+ B</b>                      |         | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 7.97    | H                        | 0.100           | pH Units                   | 1                  | 02-Sep-2014 12:19 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |         | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 555     |                          | 5.00            | umhos/cm                   | 1                  | 02-Sep-2014 12:19 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |         | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 372     |                          | 10.0            | mg/L                       | 1                  | 26-Aug-2014 18:00 |
| <b>ANIONS BY E300.0</b>                      |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 24.1    |                          | 0.500           | mg/L                       | 1                  | 07-Sep-2014 03:14 |
| Fluoride                                     | 1.15    |                          | 0.100           | mg/L                       | 1                  | 07-Sep-2014 03:14 |
| Sulfate                                      | 70.2    |                          | 0.500           | mg/L                       | 1                  | 07-Sep-2014 03:14 |
| <b>NITRATE/NITRITE BY E300.0</b>             |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 1.64    |                          | 1.00            | mg/L                       | 5                  | 07-Sep-2014 18:25 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-23  
 Collection Date: 21-Aug-2014 08:35

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-03  
 Matrix:Groundwater

| ANALYSES                   | RESULT               | QUAL | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|----------------------|------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> | <b>Method:SW8260</b> |      |                 |             |                    | Analyst: PC       |
| 1,1,1-Trichloroethane      | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| 1,1,2,2-Tetrachloroethane  | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| 1,1,2-Trichloroethane      | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| 1,1-Dichloroethane         | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| 1,1-Dichloroethene         | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| 1,2,4-Trimethylbenzene     | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| 1,2-Dibromoethane          | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| 1,2-Dichloroethane         | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| 1,2-Dichloropropane        | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| 1,3,5-Trimethylbenzene     | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| 2-Butanone                 | ND                   |      | 0.010           | mg/L        | 1                  | 28-Aug-2014 23:02 |
| 2-Hexanone                 | ND                   |      | 0.010           | mg/L        | 1                  | 28-Aug-2014 23:02 |
| 4-Isopropyltoluene         | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| 4-Methyl-2-pentanone       | ND                   |      | 0.010           | mg/L        | 1                  | 28-Aug-2014 23:02 |
| <b>Acetone</b>             | <b>0.016</b>         |      | <b>0.010</b>    | <b>mg/L</b> | 1                  | 28-Aug-2014 23:02 |
| Benzene                    | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| Bromodichloromethane       | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| Bromoform                  | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| Bromomethane               | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| Carbon disulfide           | ND                   |      | 0.010           | mg/L        | 1                  | 28-Aug-2014 23:02 |
| Carbon tetrachloride       | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| Chlorobenzene              | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| Chloroethane               | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| Chloroform                 | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| Chloromethane              | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| cis-1,2-Dichloroethene     | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| cis-1,3-Dichloropropene    | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| Dibromochloromethane       | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| Ethylbenzene               | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| Isopropylbenzene           | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| m,p-Xylene                 | ND                   |      | 0.010           | mg/L        | 1                  | 28-Aug-2014 23:02 |
| Methyl tert-butyl ether    | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| Methylene chloride         | ND                   |      | 0.010           | mg/L        | 1                  | 28-Aug-2014 23:02 |
| Naphthalene                | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| n-Butylbenzene             | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| n-Propylbenzene            | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| o-Xylene                   | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| sec-Butylbenzene           | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| Styrene                    | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| Tetrachloroethene          | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| Toluene                    | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| trans-1,2-Dichloroethene   | ND                   |      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-23  
Collection Date: 21-Aug-2014 08:35

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
Lab ID:HS14080845-03  
Matrix:Groundwater

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 28-Aug-2014 23:02 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 28-Aug-2014 23:02 |
| Surr: 1,2-Dichloroethane-d4 | 108    |                      | 70-125          | %REC        | 1                  | 28-Aug-2014 23:02 |
| Surr: 4-Bromofluorobenzene  | 99.2   |                      | 72-125          | %REC        | 1                  | 28-Aug-2014 23:02 |
| Surr: Dibromofluoromethane  | 104    |                      | 71-125          | %REC        | 1                  | 28-Aug-2014 23:02 |
| Surr: Toluene-d8            | 103    |                      | 75-125          | %REC        | 1                  | 28-Aug-2014 23:02 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-23  
 Collection Date: 21-Aug-2014 08:35

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-03  
 Matrix:Groundwater

| ANALYSES                       | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|--------------------------------|--------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b> |        | <b>Method:SW8270</b> |                 | Prep:SW3510 / 25-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                  | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| 1-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| 2,4,5-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| 2,4,6-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| 2,4-Dichlorophenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| 2,4-Dimethylphenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| 2,4-Dinitrophenol              | ND     |                      | 1.0             | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| 2,4-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| 2,6-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| 2-Chloronaphthalene            | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| 2-Chlorophenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| 2-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| 2-Methylphenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| 2-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| 2-Nitrophenol                  | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| 3&4-Methylphenol               | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| 3,3'-Dichlorobenzidine         | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| 3-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| 4,6-Dinitro-2-methylphenol     | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| 4-Bromophenyl phenyl ether     | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| 4-Chloro-3-methylphenol        | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| 4-Chloroaniline                | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| 4-Chlorophenyl phenyl ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| 4-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| 4-Nitrophenol                  | ND     |                      | 1.0             | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Acenaphthene                   | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Acenaphthylene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Acetophenone                   | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Anthracene                     | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Atrazine                       | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Benz(a)anthracene              | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Benzaldehyde                   | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Benzo(a)pyrene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Benzo(b)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Benzo(g,h,i)perylene           | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Benzo(k)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Bis(2-chloroethoxy)methane     | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Bis(2-chloroethyl)ether        | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Bis(2-chloroisopropyl)ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Bis(2-ethylhexyl)phthalate     | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Butyl benzyl phthalate         | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Caprolactam                    | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-23  
 Collection Date: 21-Aug-2014 08:35

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-03  
 Matrix:Groundwater

| ANALYSES                           | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 25-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Chrysene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Dibenz(a,h)anthracene              | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Dibenzofuran                       | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Diethyl phthalate                  | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Dimethyl phthalate                 | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Di-n-butyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Di-n-octyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Fluoranthene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Fluorene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Hexachlorobenzene                  | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Hexachlorobutadiene                | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Hexachlorocyclopentadiene          | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Hexachloroethane                   | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Indeno(1,2,3-cd)pyrene             | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Isophorone                         | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Naphthalene                        | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Nitrobenzene                       | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| N-Nitrosodi-n-propylamine          | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| N-Nitrosodiphenylamine             | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Pentachlorophenol                  | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Phenanthrene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Phenol                             | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Pyrene                             | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 17:52 |
| Surr: 2,4,6-Tribromophenol         | 82.6   |                       | 34-129          | %REC                      | 1                  | 26-Aug-2014 17:52 |
| Surr: 2-Fluorobiphenyl             | 70.5   |                       | 40-125          | %REC                      | 1                  | 26-Aug-2014 17:52 |
| Surr: 2-Fluorophenol               | 63.3   |                       | 20-120          | %REC                      | 1                  | 26-Aug-2014 17:52 |
| Surr: 4-Terphenyl-d14              | 79.5   |                       | 40-135          | %REC                      | 1                  | 26-Aug-2014 17:52 |
| Surr: Nitrobenzene-d5              | 67.6   |                       | 41-120          | %REC                      | 1                  | 26-Aug-2014 17:52 |
| Surr: Phenol-d6                    | 63.0   |                       | 20-120          | %REC                      | 1                  | 26-Aug-2014 17:52 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method:SM2320B</b> |                 |                           |                    | Analyst: MYC      |
| Alkalinity, Bicarbonate (As CaCO3) | 275    |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 12:25 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 12:25 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 12:25 |
| Alkalinity, Total (As CaCO3)       | 275    |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 12:25 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-23  
 Collection Date: 21-Aug-2014 08:35

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-03  
 Matrix:Groundwater

| ANALYSES                                     | RESULT  | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |         | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 0.0606  |                          | 0.0100          | mg/L                       | 1                  | 04-Sep-2014 18:09 |
| Arsenic                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:09 |
| Barium                                       | 0.147   |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:09 |
| Boron                                        | 0.138   |                          | 0.0200          | mg/L                       | 1                  | 05-Sep-2014 18:35 |
| Cadmium                                      | ND      |                          | 0.00200         | mg/L                       | 1                  | 04-Sep-2014 18:09 |
| Calcium                                      | 206     |                          | 50.0            | mg/L                       | 100                | 05-Sep-2014 19:35 |
| Chromium                                     | 0.0129  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:09 |
| Cobalt                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:09 |
| Copper                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:09 |
| Iron                                         | ND      |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:09 |
| Lead                                         | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:09 |
| Magnesium                                    | 27.8    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:09 |
| Manganese                                    | 0.157   |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:09 |
| Molybdenum                                   | 0.00522 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:09 |
| Nickel                                       | 0.0719  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:09 |
| Potassium                                    | 4.10    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:09 |
| Selenium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:09 |
| Silver                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:09 |
| Sodium                                       | 70.1    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:09 |
| Uranium                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:09 |
| Zinc                                         | 0.0104  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:09 |
| <b>MERCURY BY SW7470A</b>                    |         | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 25-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND      |                          | 0.000200        | mg/L                       | 1                  | 25-Aug-2014 15:10 |
| <b>PH BY SM4500H+ B</b>                      |         | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 7.62    | H                        | 0.100           | pH Units                   | 1                  | 02-Sep-2014 12:25 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |         | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 1,890   |                          | 5.00            | umhos/cm                   | 1                  | 02-Sep-2014 12:25 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |         | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 1,680   |                          | 10.0            | mg/L                       | 1                  | 26-Aug-2014 18:00 |
| <b>ANIONS BY E300.0</b>                      |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 443     |                          | 2.50            | mg/L                       | 5                  | 07-Sep-2014 03:57 |
| Fluoride                                     | 0.792   |                          | 0.100           | mg/L                       | 1                  | 07-Sep-2014 03:35 |
| Sulfate                                      | 98.1    |                          | 0.500           | mg/L                       | 1                  | 07-Sep-2014 03:35 |
| <b>NITRATE/NITRITE BY E300.0</b>             |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 2.89    |                          | 1.00            | mg/L                       | 5                  | 07-Sep-2014 18:47 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-24  
 Collection Date: 21-Aug-2014 10:30

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-04  
 Matrix:Groundwater

| ANALYSES                   | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| 1,1,2,2-Tetrachloroethane  | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| 1,1,2-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| 1,1-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| 1,1-Dichloroethene         | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| 1,2,4-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| 1,2-Dibromoethane          | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| 1,2-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| 1,2-Dichloropropane        | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| 1,3,5-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| 2-Butanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 28-Aug-2014 23:29 |
| 2-Hexanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 28-Aug-2014 23:29 |
| 4-Isopropyltoluene         | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| 4-Methyl-2-pentanone       | ND     |                      | 0.010           | mg/L        | 1                  | 28-Aug-2014 23:29 |
| Acetone                    | ND     |                      | 0.010           | mg/L        | 1                  | 28-Aug-2014 23:29 |
| Benzene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| Bromodichloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| Bromoform                  | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| Bromomethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| Carbon disulfide           | ND     |                      | 0.010           | mg/L        | 1                  | 28-Aug-2014 23:29 |
| Carbon tetrachloride       | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| Chlorobenzene              | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| Chloroethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| Chloroform                 | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| Chloromethane              | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| cis-1,2-Dichloroethene     | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| cis-1,3-Dichloropropene    | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| Dibromochloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| Ethylbenzene               | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| Isopropylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| m,p-Xylene                 | ND     |                      | 0.010           | mg/L        | 1                  | 28-Aug-2014 23:29 |
| Methyl tert-butyl ether    | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| Methylene chloride         | ND     |                      | 0.010           | mg/L        | 1                  | 28-Aug-2014 23:29 |
| Naphthalene                | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| n-Butylbenzene             | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| n-Propylbenzene            | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| o-Xylene                   | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| sec-Butylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| Styrene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| Tetrachloroethene          | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| Toluene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| trans-1,2-Dichloroethene   | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-24  
Collection Date: 21-Aug-2014 10:30

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
Lab ID:HS14080845-04  
Matrix:Groundwater

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 28-Aug-2014 23:29 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 28-Aug-2014 23:29 |
| Surr: 1,2-Dichloroethane-d4 | 110    |                      | 70-125          | %REC        | 1                  | 28-Aug-2014 23:29 |
| Surr: 4-Bromofluorobenzene  | 98.5   |                      | 72-125          | %REC        | 1                  | 28-Aug-2014 23:29 |
| Surr: Dibromofluoromethane  | 106    |                      | 71-125          | %REC        | 1                  | 28-Aug-2014 23:29 |
| Surr: Toluene-d8            | 105    |                      | 75-125          | %REC        | 1                  | 28-Aug-2014 23:29 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-24  
 Collection Date: 21-Aug-2014 10:30

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-04  
 Matrix:Groundwater

| ANALYSES                       | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|--------------------------------|--------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b> |        | <b>Method:SW8270</b> |                 | Prep:SW3510 / 25-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                  | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| 1-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| 2,4,5-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| 2,4,6-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| 2,4-Dichlorophenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| 2,4-Dimethylphenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| 2,4-Dinitrophenol              | ND     |                      | 1.0             | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| 2,4-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| 2,6-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| 2-Chloronaphthalene            | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| 2-Chlorophenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| 2-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| 2-Methylphenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| 2-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| 2-Nitrophenol                  | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| 3&4-Methylphenol               | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| 3,3'-Dichlorobenzidine         | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| 3-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| 4,6-Dinitro-2-methylphenol     | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| 4-Bromophenyl phenyl ether     | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| 4-Chloro-3-methylphenol        | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| 4-Chloroaniline                | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| 4-Chlorophenyl phenyl ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| 4-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| 4-Nitrophenol                  | ND     |                      | 1.0             | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Acenaphthene                   | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Acenaphthylene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Acetophenone                   | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Anthracene                     | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Atrazine                       | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Benz(a)anthracene              | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Benzaldehyde                   | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Benzo(a)pyrene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Benzo(b)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Benzo(g,h,i)perylene           | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Benzo(k)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Bis(2-chloroethoxy)methane     | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Bis(2-chloroethyl)ether        | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Bis(2-chloroisopropyl)ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Bis(2-ethylhexyl)phthalate     | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Butyl benzyl phthalate         | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Caprolactam                    | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-24  
 Collection Date: 21-Aug-2014 10:30

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-04  
 Matrix:Groundwater

| ANALYSES                           | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 25-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Chrysene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Dibenz(a,h)anthracene              | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Dibenzofuran                       | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Diethyl phthalate                  | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Dimethyl phthalate                 | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Di-n-butyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Di-n-octyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Fluoranthene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Fluorene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Hexachlorobenzene                  | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Hexachlorobutadiene                | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Hexachlorocyclopentadiene          | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Hexachloroethane                   | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Indeno(1,2,3-cd)pyrene             | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Isophorone                         | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Naphthalene                        | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Nitrobenzene                       | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| N-Nitrosodi-n-propylamine          | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| N-Nitrosodiphenylamine             | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Pentachlorophenol                  | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Phenanthrene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Phenol                             | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Pyrene                             | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:12 |
| Surr: 2,4,6-Tribromophenol         | 72.7   |                       | 34-129          | %REC                      | 1                  | 26-Aug-2014 18:12 |
| Surr: 2-Fluorobiphenyl             | 62.9   |                       | 40-125          | %REC                      | 1                  | 26-Aug-2014 18:12 |
| Surr: 2-Fluorophenol               | 57.3   |                       | 20-120          | %REC                      | 1                  | 26-Aug-2014 18:12 |
| Surr: 4-Terphenyl-d14              | 71.4   |                       | 40-135          | %REC                      | 1                  | 26-Aug-2014 18:12 |
| Surr: Nitrobenzene-d5              | 61.8   |                       | 41-120          | %REC                      | 1                  | 26-Aug-2014 18:12 |
| Surr: Phenol-d6                    | 54.2   |                       | 20-120          | %REC                      | 1                  | 26-Aug-2014 18:12 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method:SM2320B</b> |                 | Analyst: MYC              |                    |                   |
| Alkalinity, Bicarbonate (As CaCO3) | 219    |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 12:31 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 12:31 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 12:31 |
| Alkalinity, Total (As CaCO3)       | 219    |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 12:31 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-24  
 Collection Date: 21-Aug-2014 10:30

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-04  
 Matrix:Groundwater

| ANALYSES                                     | RESULT  | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |         | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 0.270   |                          | 0.0100          | mg/L                       | 1                  | 04-Sep-2014 18:12 |
| Arsenic                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:12 |
| Barium                                       | 0.0901  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:12 |
| Boron                                        | 0.117   |                          | 0.0200          | mg/L                       | 1                  | 05-Sep-2014 18:38 |
| Cadmium                                      | ND      |                          | 0.00200         | mg/L                       | 1                  | 04-Sep-2014 18:12 |
| Calcium                                      | 68.1    |                          | 0.500           | mg/L                       | 1                  | 04-Sep-2014 18:12 |
| Chromium                                     | 0.258   |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:12 |
| Cobalt                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:12 |
| Copper                                       | 0.00634 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:12 |
| Iron                                         | 1.28    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:12 |
| Lead                                         | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:12 |
| Magnesium                                    | 9.26    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:12 |
| Manganese                                    | 0.0383  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:12 |
| Molybdenum                                   | 0.00911 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:12 |
| Nickel                                       | 0.135   |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:12 |
| Potassium                                    | 1.90    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:12 |
| Selenium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:12 |
| Silver                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:12 |
| Sodium                                       | 35.6    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:12 |
| Uranium                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:12 |
| Zinc                                         | 0.0114  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:12 |
| <b>MERCURY BY SW7470A</b>                    |         | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 25-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND      |                          | 0.000200        | mg/L                       | 1                  | 25-Aug-2014 15:12 |
| <b>PH BY SM4500H+ B</b>                      |         | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 7.94    | H                        | 0.100           | pH Units                   | 1                  | 02-Sep-2014 12:31 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |         | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 578     |                          | 5.00            | umhos/cm                   | 1                  | 02-Sep-2014 12:31 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |         | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 368     |                          | 10.0            | mg/L                       | 1                  | 26-Aug-2014 18:00 |
| <b>ANIONS BY E300.0</b>                      |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 29.2    |                          | 0.500           | mg/L                       | 1                  | 07-Sep-2014 04:19 |
| Fluoride                                     | 2.76    |                          | 0.100           | mg/L                       | 1                  | 07-Sep-2014 04:19 |
| Sulfate                                      | 44.0    |                          | 0.500           | mg/L                       | 1                  | 07-Sep-2014 04:19 |
| <b>NITRATE/NITRITE BY E300.0</b>             |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 2.39    |                          | 1.00            | mg/L                       | 5                  | 07-Sep-2014 19:08 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-3  
 Collection Date: 21-Aug-2014 12:20

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-05  
 Matrix:Groundwater

| ANALYSES                   | RESULT               | QUAL | REPORT<br>LIMIT | UNITS | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|----------------------|------|-----------------|-------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> | <b>Method:SW8260</b> |      |                 |       |                    | Analyst: PC       |
| 1,1,1-Trichloroethane      | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| 1,1,2,2-Tetrachloroethane  | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| 1,1,2-Trichloroethane      | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| 1,1-Dichloroethane         | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| 1,1-Dichloroethene         | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| 1,2,4-Trimethylbenzene     | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| 1,2-Dibromoethane          | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| 1,2-Dichloroethane         | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| 1,2-Dichloropropane        | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| 1,3,5-Trimethylbenzene     | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| 2-Butanone                 | ND                   |      | 0.010           | mg/L  | 1                  | 28-Aug-2014 23:55 |
| 2-Hexanone                 | ND                   |      | 0.010           | mg/L  | 1                  | 28-Aug-2014 23:55 |
| 4-Isopropyltoluene         | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| 4-Methyl-2-pentanone       | ND                   |      | 0.010           | mg/L  | 1                  | 28-Aug-2014 23:55 |
| Acetone                    | ND                   |      | 0.010           | mg/L  | 1                  | 28-Aug-2014 23:55 |
| Benzene                    | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| Bromodichloromethane       | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| Bromoform                  | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| Bromomethane               | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| Carbon disulfide           | ND                   |      | 0.010           | mg/L  | 1                  | 28-Aug-2014 23:55 |
| Carbon tetrachloride       | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| Chlorobenzene              | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| Chloroethane               | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| Chloroform                 | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| Chloromethane              | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| cis-1,2-Dichloroethene     | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| cis-1,3-Dichloropropene    | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| Dibromochloromethane       | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| Ethylbenzene               | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| Isopropylbenzene           | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| m,p-Xylene                 | ND                   |      | 0.010           | mg/L  | 1                  | 28-Aug-2014 23:55 |
| Methyl tert-butyl ether    | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| Methylene chloride         | ND                   |      | 0.010           | mg/L  | 1                  | 28-Aug-2014 23:55 |
| Naphthalene                | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| n-Butylbenzene             | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| n-Propylbenzene            | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| o-Xylene                   | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| sec-Butylbenzene           | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| Styrene                    | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| Tetrachloroethene          | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| Toluene                    | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |
| trans-1,2-Dichloroethene   | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 23:55 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-3  
Collection Date: 21-Aug-2014 12:20

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
Lab ID:HS14080845-05  
Matrix:Groundwater

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:55 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 23:55 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 28-Aug-2014 23:55 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 28-Aug-2014 23:55 |
| Surr: 1,2-Dichloroethane-d4 | 100    |                      | 70-125          | %REC        | 1                  | 28-Aug-2014 23:55 |
| Surr: 4-Bromofluorobenzene  | 105    |                      | 72-125          | %REC        | 1                  | 28-Aug-2014 23:55 |
| Surr: Dibromofluoromethane  | 98.4   |                      | 71-125          | %REC        | 1                  | 28-Aug-2014 23:55 |
| Surr: Toluene-d8            | 102    |                      | 75-125          | %REC        | 1                  | 28-Aug-2014 23:55 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-3  
 Collection Date: 21-Aug-2014 12:20

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-05  
 Matrix:Groundwater

| ANALYSES                          | RESULT     | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------------|------------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>    |            | <b>Method:SW8270</b> |                 | Prep:SW3510 / 25-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                     | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| 1-Methylnaphthalene               | ND         |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| 2,4,5-Trichlorophenol             | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| 2,4,6-Trichlorophenol             | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| 2,4-Dichlorophenol                | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| 2,4-Dimethylphenol                | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| 2,4-Dinitrophenol                 | ND         |                      | 1.0             | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| 2,4-Dinitrotoluene                | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| 2,6-Dinitrotoluene                | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| 2-Chloronaphthalene               | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| 2-Chlorophenol                    | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| 2-Methylnaphthalene               | ND         |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| 2-Methylphenol                    | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| 2-Nitroaniline                    | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| 2-Nitrophenol                     | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| 3&4-Methylphenol                  | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| 3,3'-Dichlorobenzidine            | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| 3-Nitroaniline                    | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| 4,6-Dinitro-2-methylphenol        | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| 4-Bromophenyl phenyl ether        | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| 4-Chloro-3-methylphenol           | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| 4-Chloroaniline                   | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| 4-Chlorophenyl phenyl ether       | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| 4-Nitroaniline                    | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| 4-Nitrophenol                     | ND         |                      | 1.0             | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Acenaphthene                      | ND         |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Acenaphthylene                    | ND         |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Acetophenone                      | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Anthracene                        | ND         |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Atrazine                          | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Benz(a)anthracene                 | ND         |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Benzaldehyde                      | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Benzo(a)pyrene                    | ND         |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Benzo(b)fluoranthene              | ND         |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Benzo(g,h,i)perylene              | ND         |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Benzo(k)fluoranthene              | ND         |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Bis(2-chloroethoxy)methane        | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Bis(2-chloroethyl)ether           | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Bis(2-chloroisopropyl)ether       | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>2.1</b> |                      | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 26-Aug-2014 18:31 |
| Butyl benzyl phthalate            | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Caprolactam                       | ND         |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-3  
 Collection Date: 21-Aug-2014 12:20

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-05  
 Matrix:Groundwater

| ANALYSES                           | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 25-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Chrysene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Dibenz(a,h)anthracene              | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Dibenzofuran                       | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Diethyl phthalate                  | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Dimethyl phthalate                 | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Di-n-butyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Di-n-octyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Fluoranthene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Fluorene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Hexachlorobenzene                  | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Hexachlorobutadiene                | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Hexachlorocyclopentadiene          | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Hexachloroethane                   | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Indeno(1,2,3-cd)pyrene             | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Isophorone                         | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Naphthalene                        | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Nitrobenzene                       | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| N-Nitrosodi-n-propylamine          | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| N-Nitrosodiphenylamine             | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Pentachlorophenol                  | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Phenanthrene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Phenol                             | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Pyrene                             | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:31 |
| Surr: 2,4,6-Tribromophenol         | 79.8   |                       | 34-129          | %REC                      | 1                  | 26-Aug-2014 18:31 |
| Surr: 2-Fluorobiphenyl             | 68.6   |                       | 40-125          | %REC                      | 1                  | 26-Aug-2014 18:31 |
| Surr: 2-Fluorophenol               | 61.4   |                       | 20-120          | %REC                      | 1                  | 26-Aug-2014 18:31 |
| Surr: 4-Terphenyl-d14              | 77.4   |                       | 40-135          | %REC                      | 1                  | 26-Aug-2014 18:31 |
| Surr: Nitrobenzene-d5              | 65.4   |                       | 41-120          | %REC                      | 1                  | 26-Aug-2014 18:31 |
| Surr: Phenol-d6                    | 61.0   |                       | 20-120          | %REC                      | 1                  | 26-Aug-2014 18:31 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method:SM2320B</b> |                 | Analyst: MYC              |                    |                   |
| Alkalinity, Bicarbonate (As CaCO3) | 217    |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 12:45 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 12:45 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 12:45 |
| Alkalinity, Total (As CaCO3)       | 217    |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 12:45 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-3  
 Collection Date: 21-Aug-2014 12:20

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-05  
 Matrix:Groundwater

| ANALYSES                                     | RESULT | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|--------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |        | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 0.0128 |                          | 0.0100          | mg/L                       | 1                  | 04-Sep-2014 18:15 |
| Arsenic                                      | 0.0183 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:15 |
| Barium                                       | 0.0545 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:15 |
| Boron                                        | 0.104  |                          | 0.0200          | mg/L                       | 1                  | 05-Sep-2014 18:40 |
| Cadmium                                      | ND     |                          | 0.00200         | mg/L                       | 1                  | 04-Sep-2014 18:15 |
| Calcium                                      | 22.2   |                          | 0.500           | mg/L                       | 1                  | 04-Sep-2014 18:15 |
| Chromium                                     | ND     |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:15 |
| Cobalt                                       | ND     |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:15 |
| Copper                                       | ND     |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:15 |
| Iron                                         | ND     |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:15 |
| Lead                                         | ND     |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:15 |
| Magnesium                                    | 2.53   |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:15 |
| Manganese                                    | ND     |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:15 |
| Molybdenum                                   | ND     |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:15 |
| Nickel                                       | ND     |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:15 |
| Potassium                                    | 1.94   |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:15 |
| Selenium                                     | ND     |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:15 |
| Silver                                       | ND     |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:15 |
| Sodium                                       | 114    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:15 |
| Uranium                                      | ND     |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:15 |
| Zinc                                         | ND     |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:15 |
| <b>MERCURY BY SW7470A</b>                    |        | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 25-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND     |                          | 0.000200        | mg/L                       | 1                  | 25-Aug-2014 15:17 |
| <b>PH BY SM4500H+ B</b>                      |        | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 8.19   | H                        | 0.100           | pH Units                   | 1                  | 02-Sep-2014 12:45 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |        | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 636    |                          | 5.00            | umhos/cm                   | 1                  | 02-Sep-2014 12:45 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |        | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 420    |                          | 10.0            | mg/L                       | 1                  | 26-Aug-2014 18:00 |
| <b>ANIONS BY E300.0</b>                      |        | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 30.0   |                          | 0.500           | mg/L                       | 1                  | 07-Sep-2014 04:40 |
| Fluoride                                     | 1.84   |                          | 0.100           | mg/L                       | 1                  | 07-Sep-2014 04:40 |
| Sulfate                                      | 78.0   |                          | 0.500           | mg/L                       | 1                  | 07-Sep-2014 04:40 |
| <b>NITRATE/NITRITE BY E300.0</b>             |        | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 1.53   |                          | 1.00            | mg/L                       | 5                  | 08-Sep-2014 14:43 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-26  
 Collection Date: 21-Aug-2014 14:05

**ANALYTICAL REPORT**

WorkOrder: HS14080845  
 Lab ID: HS14080845-06  
 Matrix: Groundwater

| ANALYSES                   | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|-----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method: SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| 1,1,2,2-Tetrachloroethane  | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| 1,1,2-Trichloroethane      | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| 1,1-Dichloroethane         | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| 1,1-Dichloroethene         | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| 1,2,4-Trimethylbenzene     | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| 1,2-Dibromoethane          | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| 1,2-Dichloroethane         | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| 1,2-Dichloropropane        | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| 1,3,5-Trimethylbenzene     | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| 2-Butanone                 | ND     |                       | 0.010           | mg/L        | 1                  | 29-Aug-2014 00:22 |
| 2-Hexanone                 | ND     |                       | 0.010           | mg/L        | 1                  | 29-Aug-2014 00:22 |
| 4-Isopropyltoluene         | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| 4-Methyl-2-pentanone       | ND     |                       | 0.010           | mg/L        | 1                  | 29-Aug-2014 00:22 |
| Acetone                    | ND     |                       | 0.010           | mg/L        | 1                  | 29-Aug-2014 00:22 |
| Benzene                    | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| Bromodichloromethane       | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| Bromoform                  | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| Bromomethane               | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| Carbon disulfide           | ND     |                       | 0.010           | mg/L        | 1                  | 29-Aug-2014 00:22 |
| Carbon tetrachloride       | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| Chlorobenzene              | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| Chloroethane               | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| Chloroform                 | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| Chloromethane              | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| cis-1,2-Dichloroethene     | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| cis-1,3-Dichloropropene    | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| Dibromochloromethane       | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| Ethylbenzene               | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| Isopropylbenzene           | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| m,p-Xylene                 | ND     |                       | 0.010           | mg/L        | 1                  | 29-Aug-2014 00:22 |
| Methyl tert-butyl ether    | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| Methylene chloride         | ND     |                       | 0.010           | mg/L        | 1                  | 29-Aug-2014 00:22 |
| Naphthalene                | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| n-Butylbenzene             | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| n-Propylbenzene            | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| o-Xylene                   | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| sec-Butylbenzene           | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| Styrene                    | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| Tetrachloroethene          | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| Toluene                    | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |
| trans-1,2-Dichloroethene   | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:22 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-26  
Collection Date: 21-Aug-2014 14:05

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
Lab ID:HS14080845-06  
Matrix:Groundwater

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 |       |                    | Analyst: PC       |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 00:22 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 00:22 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L  | 1                  | 29-Aug-2014 00:22 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L  | 1                  | 29-Aug-2014 00:22 |
| Surr: 1,2-Dichloroethane-d4 | 105    |                      | 70-125          | %REC  | 1                  | 29-Aug-2014 00:22 |
| Surr: 4-Bromofluorobenzene  | 98.1   |                      | 72-125          | %REC  | 1                  | 29-Aug-2014 00:22 |
| Surr: Dibromofluoromethane  | 101    |                      | 71-125          | %REC  | 1                  | 29-Aug-2014 00:22 |
| Surr: Toluene-d8            | 100    |                      | 75-125          | %REC  | 1                  | 29-Aug-2014 00:22 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-26  
 Collection Date: 21-Aug-2014 14:05

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-06  
 Matrix:Groundwater

| ANALYSES                       | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|--------------------------------|--------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b> |        | <b>Method:SW8270</b> |                 | Prep:SW3510 / 25-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                  | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| 1-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| 2,4,5-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| 2,4,6-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| 2,4-Dichlorophenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| 2,4-Dimethylphenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| 2,4-Dinitrophenol              | ND     |                      | 1.0             | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| 2,4-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| 2,6-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| 2-Chloronaphthalene            | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| 2-Chlorophenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| 2-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| 2-Methylphenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| 2-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| 2-Nitrophenol                  | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| 3&4-Methylphenol               | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| 3,3'-Dichlorobenzidine         | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| 3-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| 4,6-Dinitro-2-methylphenol     | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| 4-Bromophenyl phenyl ether     | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| 4-Chloro-3-methylphenol        | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| 4-Chloroaniline                | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| 4-Chlorophenyl phenyl ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| 4-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| 4-Nitrophenol                  | ND     |                      | 1.0             | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Acenaphthene                   | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Acenaphthylene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Acetophenone                   | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Anthracene                     | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Atrazine                       | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Benz(a)anthracene              | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Benzaldehyde                   | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Benzo(a)pyrene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Benzo(b)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Benzo(g,h,i)perylene           | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Benzo(k)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Bis(2-chloroethoxy)methane     | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Bis(2-chloroethyl)ether        | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Bis(2-chloroisopropyl)ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Bis(2-ethylhexyl)phthalate     | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Butyl benzyl phthalate         | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Caprolactam                    | ND     |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-26  
 Collection Date: 21-Aug-2014 14:05

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-06  
 Matrix:Groundwater

| ANALYSES                                  | RESULT      | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-------------------------------------------|-------------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>            |             | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 25-Aug-2014 |                    | Analyst: LG       |
| Carbazole                                 | ND          |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Chrysene                                  | ND          |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Dibenz(a,h)anthracene                     | ND          |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Dibenzofuran                              | ND          |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Diethyl phthalate                         | ND          |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Dimethyl phthalate                        | ND          |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Di-n-butyl phthalate                      | ND          |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| <b>Di-n-octyl phthalate</b>               | <b>0.33</b> |                       | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 26-Aug-2014 18:50 |
| Fluoranthene                              | ND          |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Fluorene                                  | ND          |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Hexachlorobenzene                         | ND          |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Hexachlorobutadiene                       | ND          |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Hexachlorocyclopentadiene                 | ND          |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Hexachloroethane                          | ND          |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Indeno(1,2,3-cd)pyrene                    | ND          |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Isophorone                                | ND          |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Naphthalene                               | ND          |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Nitrobenzene                              | ND          |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| N-Nitrosodi-n-propylamine                 | ND          |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| N-Nitrosodiphenylamine                    | ND          |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Pentachlorophenol                         | ND          |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Phenanthrene                              | ND          |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Phenol                                    | ND          |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| Pyrene                                    | ND          |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 18:50 |
| <i>Surr: 2,4,6-Tribromophenol</i>         | 75.2        |                       | 34-129          | %REC                      | 1                  | 26-Aug-2014 18:50 |
| <i>Surr: 2-Fluorobiphenyl</i>             | 62.8        |                       | 40-125          | %REC                      | 1                  | 26-Aug-2014 18:50 |
| <i>Surr: 2-Fluorophenol</i>               | 58.3        |                       | 20-120          | %REC                      | 1                  | 26-Aug-2014 18:50 |
| <i>Surr: 4-Terphenyl-d14</i>              | 73.3        |                       | 40-135          | %REC                      | 1                  | 26-Aug-2014 18:50 |
| <i>Surr: Nitrobenzene-d5</i>              | 60.9        |                       | 41-120          | %REC                      | 1                  | 26-Aug-2014 18:50 |
| <i>Surr: Phenol-d6</i>                    | 57.8        |                       | 20-120          | %REC                      | 1                  | 26-Aug-2014 18:50 |
| <b>ALKALINITY BY SM2320B</b>              |             | <b>Method:SM2320B</b> |                 |                           |                    | Analyst: MYC      |
| <b>Alkalinity, Bicarbonate (As CaCO3)</b> | <b>346</b>  |                       | <b>5.00</b>     | <b>mg/L</b>               | 1                  | 02-Sep-2014 12:51 |
| Alkalinity, Carbonate (As CaCO3)          | ND          |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 12:51 |
| Alkalinity, Hydroxide (As CaCO3)          | ND          |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 12:51 |
| <b>Alkalinity, Total (As CaCO3)</b>       | <b>346</b>  |                       | <b>5.00</b>     | <b>mg/L</b>               | 1                  | 02-Sep-2014 12:51 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-26  
 Collection Date: 21-Aug-2014 14:05

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-06  
 Matrix:Groundwater

| ANALYSES                                     | RESULT  | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |         | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 0.132   |                          | 0.0100          | mg/L                       | 1                  | 04-Sep-2014 18:22 |
| Arsenic                                      | 0.00816 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:22 |
| Barium                                       | 0.138   |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:22 |
| Boron                                        | 0.167   |                          | 0.0200          | mg/L                       | 1                  | 05-Sep-2014 18:48 |
| Cadmium                                      | ND      |                          | 0.00200         | mg/L                       | 1                  | 04-Sep-2014 18:22 |
| Calcium                                      | 45.5    |                          | 0.500           | mg/L                       | 1                  | 04-Sep-2014 18:22 |
| Chromium                                     | 0.0152  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:22 |
| Cobalt                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:22 |
| Copper                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:22 |
| Iron                                         | ND      |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:22 |
| Lead                                         | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:22 |
| Magnesium                                    | 5.13    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:22 |
| Manganese                                    | 0.00938 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:22 |
| Molybdenum                                   | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:22 |
| Nickel                                       | 0.00900 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:22 |
| Potassium                                    | 3.27    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:22 |
| Selenium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:22 |
| Silver                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:22 |
| Sodium                                       | 160     |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:22 |
| Uranium                                      | 0.00548 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:22 |
| Zinc                                         | 0.00770 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:22 |
| <b>MERCURY BY SW7470A</b>                    |         | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 25-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND      |                          | 0.000200        | mg/L                       | 1                  | 25-Aug-2014 15:19 |
| <b>PH BY SM4500H+ B</b>                      |         | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 8.03    | H                        | 0.100           | pH Units                   | 1                  | 02-Sep-2014 12:51 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |         | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 973     |                          | 5.00            | umhos/cm                   | 1                  | 02-Sep-2014 12:51 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |         | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 644     |                          | 10.0            | mg/L                       | 1                  | 26-Aug-2014 18:00 |
| <b>ANIONS BY E300.0</b>                      |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 67.8    |                          | 0.500           | mg/L                       | 1                  | 07-Sep-2014 05:02 |
| Fluoride                                     | 0.511   |                          | 0.100           | mg/L                       | 1                  | 07-Sep-2014 05:02 |
| Sulfate                                      | 78.9    |                          | 0.500           | mg/L                       | 1                  | 07-Sep-2014 05:02 |
| <b>NITRATE/NITRITE BY E300.0</b>             |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 3.18    |                          | 1.00            | mg/L                       | 5                  | 07-Sep-2014 19:30 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-9  
 Collection Date: 21-Aug-2014 16:10

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-07  
 Matrix:Groundwater

| ANALYSES                   | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| 1,1,2,2-Tetrachloroethane  | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| 1,1,2-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| 1,1-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| 1,1-Dichloroethene         | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| 1,2,4-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| 1,2-Dibromoethane          | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| 1,2-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| 1,2-Dichloropropane        | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| 1,3,5-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| 2-Butanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 29-Aug-2014 00:49 |
| 2-Hexanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 29-Aug-2014 00:49 |
| 4-Isopropyltoluene         | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| 4-Methyl-2-pentanone       | ND     |                      | 0.010           | mg/L        | 1                  | 29-Aug-2014 00:49 |
| Acetone                    | ND     |                      | 0.010           | mg/L        | 1                  | 29-Aug-2014 00:49 |
| Benzene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| Bromodichloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| Bromoform                  | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| Bromomethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| Carbon disulfide           | ND     |                      | 0.010           | mg/L        | 1                  | 29-Aug-2014 00:49 |
| Carbon tetrachloride       | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| Chlorobenzene              | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| Chloroethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| Chloroform                 | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| Chloromethane              | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| cis-1,2-Dichloroethene     | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| cis-1,3-Dichloropropene    | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| Dibromochloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| Ethylbenzene               | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| Isopropylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| m,p-Xylene                 | ND     |                      | 0.010           | mg/L        | 1                  | 29-Aug-2014 00:49 |
| Methyl tert-butyl ether    | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| Methylene chloride         | ND     |                      | 0.010           | mg/L        | 1                  | 29-Aug-2014 00:49 |
| Naphthalene                | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| n-Butylbenzene             | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| n-Propylbenzene            | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| o-Xylene                   | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| sec-Butylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| Styrene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| Tetrachloroethene          | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| Toluene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| trans-1,2-Dichloroethene   | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-9  
Collection Date: 21-Aug-2014 16:10

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
Lab ID:HS14080845-07  
Matrix:Groundwater

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 29-Aug-2014 00:49 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 29-Aug-2014 00:49 |
| Surr: 1,2-Dichloroethane-d4 | 104    |                      | 70-125          | %REC        | 1                  | 29-Aug-2014 00:49 |
| Surr: 4-Bromofluorobenzene  | 101    |                      | 72-125          | %REC        | 1                  | 29-Aug-2014 00:49 |
| Surr: Dibromofluoromethane  | 98.4   |                      | 71-125          | %REC        | 1                  | 29-Aug-2014 00:49 |
| Surr: Toluene-d8            | 99.2   |                      | 75-125          | %REC        | 1                  | 29-Aug-2014 00:49 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-9  
 Collection Date: 21-Aug-2014 16:10

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-07  
 Matrix:Groundwater

| ANALYSES                          | RESULT      | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------------|-------------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>    |             | <b>Method:SW8270</b> |                 | Prep:SW3510 / 25-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                     | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| 1-Methylnaphthalene               | ND          |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| 2,4,5-Trichlorophenol             | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| 2,4,6-Trichlorophenol             | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| 2,4-Dichlorophenol                | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| 2,4-Dimethylphenol                | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| 2,4-Dinitrophenol                 | ND          |                      | 1.0             | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| 2,4-Dinitrotoluene                | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| 2,6-Dinitrotoluene                | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| 2-Chloronaphthalene               | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| 2-Chlorophenol                    | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| 2-Methylnaphthalene               | ND          |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| 2-Methylphenol                    | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| 2-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| 2-Nitrophenol                     | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| 3&4-Methylphenol                  | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| 3,3'-Dichlorobenzidine            | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| 3-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| 4,6-Dinitro-2-methylphenol        | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| 4-Bromophenyl phenyl ether        | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| 4-Chloro-3-methylphenol           | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| 4-Chloroaniline                   | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| 4-Chlorophenyl phenyl ether       | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| 4-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| 4-Nitrophenol                     | ND          |                      | 1.0             | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Acenaphthene                      | ND          |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Acenaphthylene                    | ND          |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Acetophenone                      | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Anthracene                        | ND          |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Atrazine                          | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Benz(a)anthracene                 | ND          |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Benzaldehyde                      | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Benzo(a)pyrene                    | ND          |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Benzo(b)fluoranthene              | ND          |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Benzo(g,h,i)perylene              | ND          |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Benzo(k)fluoranthene              | ND          |                      | 0.10            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Bis(2-chloroethoxy)methane        | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Bis(2-chloroethyl)ether           | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Bis(2-chloroisopropyl)ether       | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>0.57</b> |                      | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 26-Aug-2014 19:10 |
| Butyl benzyl phthalate            | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Caprolactam                       | ND          |                      | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-9  
 Collection Date: 21-Aug-2014 16:10

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-07  
 Matrix:Groundwater

| ANALYSES                           | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 25-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Chrysene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Dibenz(a,h)anthracene              | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Dibenzofuran                       | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Diethyl phthalate                  | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Dimethyl phthalate                 | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Di-n-butyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Di-n-octyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Fluoranthene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Fluorene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Hexachlorobenzene                  | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Hexachlorobutadiene                | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Hexachlorocyclopentadiene          | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Hexachloroethane                   | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Indeno(1,2,3-cd)pyrene             | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Isophorone                         | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Naphthalene                        | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Nitrobenzene                       | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| N-Nitrosodi-n-propylamine          | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| N-Nitrosodiphenylamine             | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Pentachlorophenol                  | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Phenanthrene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Phenol                             | ND     |                       | 0.20            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Pyrene                             | ND     |                       | 0.10            | ug/L                      | 1                  | 26-Aug-2014 19:10 |
| Surr: 2,4,6-Tribromophenol         | 87.1   |                       | 34-129          | %REC                      | 1                  | 26-Aug-2014 19:10 |
| Surr: 2-Fluorobiphenyl             | 63.5   |                       | 40-125          | %REC                      | 1                  | 26-Aug-2014 19:10 |
| Surr: 2-Fluorophenol               | 60.3   |                       | 20-120          | %REC                      | 1                  | 26-Aug-2014 19:10 |
| Surr: 4-Terphenyl-d14              | 85.3   |                       | 40-135          | %REC                      | 1                  | 26-Aug-2014 19:10 |
| Surr: Nitrobenzene-d5              | 62.5   |                       | 41-120          | %REC                      | 1                  | 26-Aug-2014 19:10 |
| Surr: Phenol-d6                    | 58.8   |                       | 20-120          | %REC                      | 1                  | 26-Aug-2014 19:10 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method:SM2320B</b> |                 |                           |                    | Analyst: MYC      |
| Alkalinity, Bicarbonate (As CaCO3) | 280    |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 12:57 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 12:57 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 12:57 |
| Alkalinity, Total (As CaCO3)       | 280    |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 12:57 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-9  
 Collection Date: 21-Aug-2014 16:10

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-07  
 Matrix:Groundwater

| ANALYSES                                     | RESULT  | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |         | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 2.47    |                          | 0.100           | mg/L                       | 10                 | 08-Sep-2014 11:20 |
| Arsenic                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:25 |
| Barium                                       | 0.174   |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:25 |
| Boron                                        | 0.124   |                          | 0.0200          | mg/L                       | 1                  | 05-Sep-2014 18:51 |
| Cadmium                                      | ND      |                          | 0.00200         | mg/L                       | 1                  | 04-Sep-2014 18:25 |
| Calcium                                      | 162     |                          | 0.500           | mg/L                       | 1                  | 04-Sep-2014 18:25 |
| Chromium                                     | 0.205   |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:25 |
| Cobalt                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:25 |
| Copper                                       | 0.00644 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:25 |
| Iron                                         | 2.22    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:25 |
| Lead                                         | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:25 |
| Magnesium                                    | 19.6    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:25 |
| Manganese                                    | 0.0903  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:25 |
| Molybdenum                                   | 0.00662 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:25 |
| Nickel                                       | 0.111   |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:25 |
| Potassium                                    | 3.20    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:25 |
| Selenium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:25 |
| Silver                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:25 |
| Sodium                                       | 70.1    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:25 |
| Uranium                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:25 |
| Zinc                                         | 0.0334  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:25 |
| <b>MERCURY BY SW7470A</b>                    |         | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 25-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND      |                          | 0.000200        | mg/L                       | 1                  | 25-Aug-2014 15:20 |
| <b>PH BY SM4500H+ B</b>                      |         | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 7.70    | H                        | 0.100           | pH Units                   | 1                  | 02-Sep-2014 12:57 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |         | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 1,320   |                          | 5.00            | umhos/cm                   | 1                  | 02-Sep-2014 12:57 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |         | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 932     |                          | 10.0            | mg/L                       | 1                  | 28-Aug-2014 16:30 |
| <b>ANIONS BY E300.0</b>                      |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 197     |                          | 2.50            | mg/L                       | 5                  | 07-Sep-2014 06:29 |
| Fluoride                                     | 0.655   |                          | 0.100           | mg/L                       | 1                  | 07-Sep-2014 06:07 |
| Sulfate                                      | 111     |                          | 2.50            | mg/L                       | 5                  | 07-Sep-2014 06:29 |
| <b>NITRATE/NITRITE BY E300.0</b>             |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 2.35    |                          | 1.00            | mg/L                       | 5                  | 07-Sep-2014 19:52 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-10  
 Collection Date: 21-Aug-2014 17:50

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-08  
 Matrix:Groundwater

| ANALYSES                   | RESULT               | QUAL | REPORT<br>LIMIT | UNITS | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|----------------------|------|-----------------|-------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> | <b>Method:SW8260</b> |      |                 |       |                    | Analyst: PC       |
| 1,1,1-Trichloroethane      | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| 1,1,2,2-Tetrachloroethane  | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| 1,1,2-Trichloroethane      | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| 1,1-Dichloroethane         | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| 1,1-Dichloroethene         | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| 1,2,4-Trimethylbenzene     | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| 1,2-Dibromoethane          | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| 1,2-Dichloroethane         | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| 1,2-Dichloropropane        | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| 1,3,5-Trimethylbenzene     | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| 2-Butanone                 | ND                   |      | 0.010           | mg/L  | 1                  | 29-Aug-2014 01:16 |
| 2-Hexanone                 | ND                   |      | 0.010           | mg/L  | 1                  | 29-Aug-2014 01:16 |
| 4-Isopropyltoluene         | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| 4-Methyl-2-pentanone       | ND                   |      | 0.010           | mg/L  | 1                  | 29-Aug-2014 01:16 |
| Acetone                    | ND                   |      | 0.010           | mg/L  | 1                  | 29-Aug-2014 01:16 |
| Benzene                    | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| Bromodichloromethane       | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| Bromoform                  | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| Bromomethane               | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| Carbon disulfide           | ND                   |      | 0.010           | mg/L  | 1                  | 29-Aug-2014 01:16 |
| Carbon tetrachloride       | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| Chlorobenzene              | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| Chloroethane               | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| Chloroform                 | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| Chloromethane              | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| cis-1,2-Dichloroethene     | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| cis-1,3-Dichloropropene    | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| Dibromochloromethane       | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| Ethylbenzene               | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| Isopropylbenzene           | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| m,p-Xylene                 | ND                   |      | 0.010           | mg/L  | 1                  | 29-Aug-2014 01:16 |
| Methyl tert-butyl ether    | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| Methylene chloride         | ND                   |      | 0.010           | mg/L  | 1                  | 29-Aug-2014 01:16 |
| Naphthalene                | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| n-Butylbenzene             | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| n-Propylbenzene            | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| o-Xylene                   | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| sec-Butylbenzene           | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| Styrene                    | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| Tetrachloroethene          | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| Toluene                    | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |
| trans-1,2-Dichloroethene   | ND                   |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 01:16 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-10  
Collection Date: 21-Aug-2014 17:50

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
Lab ID:HS14080845-08  
Matrix:Groundwater

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:16 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:16 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 29-Aug-2014 01:16 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 29-Aug-2014 01:16 |
| Surr: 1,2-Dichloroethane-d4 | 105    |                      | 70-125          | %REC        | 1                  | 29-Aug-2014 01:16 |
| Surr: 4-Bromofluorobenzene  | 103    |                      | 72-125          | %REC        | 1                  | 29-Aug-2014 01:16 |
| Surr: Dibromofluoromethane  | 101    |                      | 71-125          | %REC        | 1                  | 29-Aug-2014 01:16 |
| Surr: Toluene-d8            | 107    |                      | 75-125          | %REC        | 1                  | 29-Aug-2014 01:16 |

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**ANALYTICAL REPORT**

WorkOrder:HS14080845  
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 Matrix:Groundwater

| ANALYSES                          | RESULT      | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------------|-------------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>    |             | <b>Method:SW8270</b> |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                     | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| 1-Methylnaphthalene               | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| 2,4,5-Trichlorophenol             | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| 2,4,6-Trichlorophenol             | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| 2,4-Dichlorophenol                | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| 2,4-Dimethylphenol                | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| 2,4-Dinitrophenol                 | ND          |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| 2,4-Dinitrotoluene                | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| 2,6-Dinitrotoluene                | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| 2-Chloronaphthalene               | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| 2-Chlorophenol                    | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| 2-Methylnaphthalene               | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| 2-Methylphenol                    | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| 2-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| 2-Nitrophenol                     | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| 3&4-Methylphenol                  | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| 3,3'-Dichlorobenzidine            | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| 3-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| 4,6-Dinitro-2-methylphenol        | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| 4-Bromophenyl phenyl ether        | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| 4-Chloro-3-methylphenol           | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| 4-Chloroaniline                   | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| 4-Chlorophenyl phenyl ether       | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| 4-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| 4-Nitrophenol                     | ND          |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Acenaphthene                      | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Acenaphthylene                    | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Acetophenone                      | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Anthracene                        | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Atrazine                          | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Benz(a)anthracene                 | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Benzaldehyde                      | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Benzo(a)pyrene                    | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Benzo(b)fluoranthene              | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Benzo(g,h,i)perylene              | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Benzo(k)fluoranthene              | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Bis(2-chloroethoxy)methane        | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Bis(2-chloroethyl)ether           | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Bis(2-chloroisopropyl)ether       | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>0.46</b> |                      | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 27-Aug-2014 15:22 |
| Butyl benzyl phthalate            | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Caprolactam                       | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-10  
 Collection Date: 21-Aug-2014 17:50

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-08  
 Matrix:Groundwater

| ANALYSES                           | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Chrysene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Dibenz(a,h)anthracene              | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Dibenzofuran                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Diethyl phthalate                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Dimethyl phthalate                 | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Di-n-butyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Di-n-octyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Fluoranthene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Fluorene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Hexachlorobenzene                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Hexachlorobutadiene                | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Hexachlorocyclopentadiene          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Hexachloroethane                   | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Indeno(1,2,3-cd)pyrene             | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Isophorone                         | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Naphthalene                        | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Nitrobenzene                       | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| N-Nitrosodi-n-propylamine          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| N-Nitrosodiphenylamine             | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Pentachlorophenol                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Phenanthrene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Phenol                             | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Pyrene                             | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 15:22 |
| Surr: 2,4,6-Tribromophenol         | 81.9   |                       | 34-129          | %REC                      | 1                  | 27-Aug-2014 15:22 |
| Surr: 2-Fluorobiphenyl             | 74.1   |                       | 40-125          | %REC                      | 1                  | 27-Aug-2014 15:22 |
| Surr: 2-Fluorophenol               | 68.7   |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 15:22 |
| Surr: 4-Terphenyl-d14              | 88.4   |                       | 40-135          | %REC                      | 1                  | 27-Aug-2014 15:22 |
| Surr: Nitrobenzene-d5              | 71.3   |                       | 41-120          | %REC                      | 1                  | 27-Aug-2014 15:22 |
| Surr: Phenol-d6                    | 70.9   |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 15:22 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method:SM2320B</b> |                 |                           |                    | Analyst: MYC      |
| Alkalinity, Bicarbonate (As CaCO3) | 180    |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 13:03 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 13:03 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 13:03 |
| Alkalinity, Total (As CaCO3)       | 180    |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 13:03 |

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Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-10  
 Collection Date: 21-Aug-2014 17:50

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-08  
 Matrix:Groundwater

| ANALYSES                                     | RESULT         | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|----------------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |                | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | ND             |                          | 0.0100          | mg/L                       | 1                  | 04-Sep-2014 18:28 |
| Arsenic                                      | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:28 |
| <b>Barium</b>                                | <b>0.134</b>   |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:28 |
| <b>Boron</b>                                 | <b>0.0998</b>  |                          | <b>0.0200</b>   | <b>mg/L</b>                | 1                  | 05-Sep-2014 18:53 |
| Cadmium                                      | ND             |                          | 0.00200         | mg/L                       | 1                  | 04-Sep-2014 18:28 |
| <b>Calcium</b>                               | <b>117</b>     |                          | <b>0.500</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:28 |
| Chromium                                     | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:28 |
| Cobalt                                       | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:28 |
| Copper                                       | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:28 |
| Iron                                         | ND             |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:28 |
| Lead                                         | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:28 |
| <b>Magnesium</b>                             | <b>14.0</b>    |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:28 |
| <b>Manganese</b>                             | <b>0.00939</b> |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:28 |
| Molybdenum                                   | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:28 |
| Nickel                                       | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:28 |
| <b>Potassium</b>                             | <b>2.31</b>    |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:28 |
| Selenium                                     | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:28 |
| Silver                                       | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:28 |
| <b>Sodium</b>                                | <b>41.7</b>    |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:28 |
| Uranium                                      | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:28 |
| <b>Zinc</b>                                  | <b>0.0114</b>  |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:28 |
| <b>MERCURY BY SW7470A</b>                    |                | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 25-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND             |                          | 0.000200        | mg/L                       | 1                  | 25-Aug-2014 15:22 |
| <b>PH BY SM4500H+ B</b>                      |                | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| <b>pH</b>                                    | <b>7.88</b>    | <b>H</b>                 | <b>0.100</b>    | <b>pH Units</b>            | 1                  | 02-Sep-2014 13:03 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |                | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 958            |                          | 5.00            | umhos/cm                   | 1                  | 02-Sep-2014 13:03 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |                | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 750            |                          | 10.0            | mg/L                       | 1                  | 28-Aug-2014 16:30 |
| <b>ANIONS BY E300.0</b>                      |                | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 156            |                          | 2.50            | mg/L                       | 5                  | 07-Sep-2014 07:12 |
| Fluoride                                     | 0.856          |                          | 0.100           | mg/L                       | 1                  | 07-Sep-2014 06:51 |
| Sulfate                                      | 68.5           |                          | 0.500           | mg/L                       | 1                  | 07-Sep-2014 06:51 |
| <b>NITRATE/NITRITE BY E300.0</b>             |                | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 2.08           |                          | 1.00            | mg/L                       | 5                  | 07-Sep-2014 20:13 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: EB-08-21-14-A  
 Collection Date: 21-Aug-2014 19:05

**ANALYTICAL REPORT**

WorkOrder: HS14080845  
 Lab ID: HS14080845-09  
 Matrix: Groundwater

| ANALYSES                   | RESULT                | QUAL | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|-----------------------|------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> | <b>Method: SW8260</b> |      |                 |             |                    | Analyst: PC       |
| 1,1,1-Trichloroethane      | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| 1,1,2,2-Tetrachloroethane  | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| 1,1,2-Trichloroethane      | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| 1,1-Dichloroethane         | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| 1,1-Dichloroethene         | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| 1,2,4-Trimethylbenzene     | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| 1,2-Dibromoethane          | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| 1,2-Dichloroethane         | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| 1,2-Dichloropropane        | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| 1,3,5-Trimethylbenzene     | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| 2-Butanone                 | ND                    |      | 0.010           | mg/L        | 1                  | 29-Aug-2014 01:43 |
| 2-Hexanone                 | ND                    |      | 0.010           | mg/L        | 1                  | 29-Aug-2014 01:43 |
| 4-Isopropyltoluene         | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| 4-Methyl-2-pentanone       | ND                    |      | 0.010           | mg/L        | 1                  | 29-Aug-2014 01:43 |
| <b>Acetone</b>             | <b>0.012</b>          |      | <b>0.010</b>    | <b>mg/L</b> | 1                  | 29-Aug-2014 01:43 |
| Benzene                    | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| Bromodichloromethane       | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| Bromoform                  | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| Bromomethane               | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| Carbon disulfide           | ND                    |      | 0.010           | mg/L        | 1                  | 29-Aug-2014 01:43 |
| Carbon tetrachloride       | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| Chlorobenzene              | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| Chloroethane               | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| Chloroform                 | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| Chloromethane              | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| cis-1,2-Dichloroethene     | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| cis-1,3-Dichloropropene    | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| Dibromochloromethane       | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| Ethylbenzene               | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| Isopropylbenzene           | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| m,p-Xylene                 | ND                    |      | 0.010           | mg/L        | 1                  | 29-Aug-2014 01:43 |
| Methyl tert-butyl ether    | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| Methylene chloride         | ND                    |      | 0.010           | mg/L        | 1                  | 29-Aug-2014 01:43 |
| Naphthalene                | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| n-Butylbenzene             | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| n-Propylbenzene            | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| o-Xylene                   | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| sec-Butylbenzene           | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| Styrene                    | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| Tetrachloroethene          | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| Toluene                    | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| trans-1,2-Dichloroethene   | ND                    |      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
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Sample ID: EB-08-21-14-A  
Collection Date: 21-Aug-2014 19:05

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
Lab ID:HS14080845-09  
Matrix:Groundwater

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 29-Aug-2014 01:43 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 29-Aug-2014 01:43 |
| Surr: 1,2-Dichloroethane-d4 | 100    |                      | 70-125          | %REC        | 1                  | 29-Aug-2014 01:43 |
| Surr: 4-Bromofluorobenzene  | 101    |                      | 72-125          | %REC        | 1                  | 29-Aug-2014 01:43 |
| Surr: Dibromofluoromethane  | 96.6   |                      | 71-125          | %REC        | 1                  | 29-Aug-2014 01:43 |
| Surr: Toluene-d8            | 104    |                      | 75-125          | %REC        | 1                  | 29-Aug-2014 01:43 |

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Client: Navajo Refining Company  
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 Sample ID: EB-08-21-14-A  
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**ANALYTICAL REPORT**

WorkOrder: HS14080845  
 Lab ID: HS14080845-09  
 Matrix: Groundwater

| ANALYSES                          | RESULT      | QUAL                  | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------------|-------------|-----------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>    |             | <b>Method: SW8270</b> |                 | Prep: SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                     | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| 1-Methylnaphthalene               | ND          |                       | 0.10            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| 2,4,5-Trichlorophenol             | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| 2,4,6-Trichlorophenol             | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| 2,4-Dichlorophenol                | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| 2,4-Dimethylphenol                | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| 2,4-Dinitrophenol                 | ND          |                       | 1.0             | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| 2,4-Dinitrotoluene                | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| 2,6-Dinitrotoluene                | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| 2-Chloronaphthalene               | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| 2-Chlorophenol                    | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| 2-Methylnaphthalene               | ND          |                       | 0.10            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| 2-Methylphenol                    | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| 2-Nitroaniline                    | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| 2-Nitrophenol                     | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| 3&4-Methylphenol                  | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| 3,3'-Dichlorobenzidine            | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| 3-Nitroaniline                    | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| 4,6-Dinitro-2-methylphenol        | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| 4-Bromophenyl phenyl ether        | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| 4-Chloro-3-methylphenol           | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| 4-Chloroaniline                   | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| 4-Chlorophenyl phenyl ether       | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| 4-Nitroaniline                    | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| 4-Nitrophenol                     | ND          |                       | 1.0             | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| Acenaphthene                      | ND          |                       | 0.10            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| Acenaphthylene                    | ND          |                       | 0.10            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| <b>Acetophenone</b>               | <b>0.22</b> |                       | <b>0.20</b>     | <b>ug/L</b>                | 1                  | 27-Aug-2014 17:17 |
| Anthracene                        | ND          |                       | 0.10            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| Atrazine                          | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| Benz(a)anthracene                 | ND          |                       | 0.10            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| <b>Benzaldehyde</b>               | <b>1.8</b>  |                       | <b>0.20</b>     | <b>ug/L</b>                | 1                  | 27-Aug-2014 17:17 |
| Benzo(a)pyrene                    | ND          |                       | 0.10            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| Benzo(b)fluoranthene              | ND          |                       | 0.10            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| Benzo(g,h,i)perylene              | ND          |                       | 0.10            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| Benzo(k)fluoranthene              | ND          |                       | 0.10            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| Bis(2-chloroethoxy)methane        | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| Bis(2-chloroethyl)ether           | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| Bis(2-chloroisopropyl)ether       | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>0.66</b> |                       | <b>0.20</b>     | <b>ug/L</b>                | 1                  | 27-Aug-2014 17:17 |
| Butyl benzyl phthalate            | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |
| Caprolactam                       | ND          |                       | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: EB-08-21-14-A  
 Collection Date: 21-Aug-2014 19:05

**ANALYTICAL REPORT**

WorkOrder: HS14080845  
 Lab ID: HS14080845-09  
 Matrix: Groundwater

| ANALYSES                           | RESULT      | QUAL                   | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED         |
|------------------------------------|-------------|------------------------|-----------------|----------------------------|--------------------|--------------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |             | <b>Method: SW8270</b>  |                 | Prep: SW3510 / 26-Aug-2014 |                    | Analyst: LG              |
| Carbazole                          | ND          |                        | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17        |
| Chrysene                           | ND          |                        | 0.10            | ug/L                       | 1                  | 27-Aug-2014 17:17        |
| Dibenz(a,h)anthracene              | ND          |                        | 0.10            | ug/L                       | 1                  | 27-Aug-2014 17:17        |
| Dibenzofuran                       | ND          |                        | 0.10            | ug/L                       | 1                  | 27-Aug-2014 17:17        |
| Diethyl phthalate                  | ND          |                        | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17        |
| <b>Dimethyl phthalate</b>          | <b>0.26</b> |                        | <b>0.20</b>     | <b>ug/L</b>                | 1                  | 27-Aug-2014 17:17        |
| Di-n-butyl phthalate               | ND          |                        | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17        |
| Di-n-octyl phthalate               | ND          |                        | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17        |
| Fluoranthene                       | ND          |                        | 0.10            | ug/L                       | 1                  | 27-Aug-2014 17:17        |
| Fluorene                           | ND          |                        | 0.10            | ug/L                       | 1                  | 27-Aug-2014 17:17        |
| Hexachlorobenzene                  | ND          |                        | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17        |
| Hexachlorobutadiene                | ND          |                        | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17        |
| Hexachlorocyclopentadiene          | ND          |                        | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17        |
| Hexachloroethane                   | ND          |                        | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17        |
| Indeno(1,2,3-cd)pyrene             | ND          |                        | 0.10            | ug/L                       | 1                  | 27-Aug-2014 17:17        |
| Isophorone                         | ND          |                        | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17        |
| Naphthalene                        | ND          |                        | 0.10            | ug/L                       | 1                  | 27-Aug-2014 17:17        |
| Nitrobenzene                       | ND          |                        | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17        |
| N-Nitrosodi-n-propylamine          | ND          |                        | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17        |
| N-Nitrosodiphenylamine             | ND          |                        | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17        |
| Pentachlorophenol                  | ND          |                        | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17        |
| Phenanthrene                       | ND          |                        | 0.10            | ug/L                       | 1                  | 27-Aug-2014 17:17        |
| Phenol                             | ND          |                        | 0.20            | ug/L                       | 1                  | 27-Aug-2014 17:17        |
| Pyrene                             | ND          |                        | 0.10            | ug/L                       | 1                  | 27-Aug-2014 17:17        |
| <i>Surr: 2,4,6-Tribromophenol</i>  | <i>81.0</i> |                        | <i>34-129</i>   | <i>%REC</i>                | <i>1</i>           | <i>27-Aug-2014 17:17</i> |
| <i>Surr: 2-Fluorobiphenyl</i>      | <i>72.8</i> |                        | <i>40-125</i>   | <i>%REC</i>                | <i>1</i>           | <i>27-Aug-2014 17:17</i> |
| <i>Surr: 2-Fluorophenol</i>        | <i>59.9</i> |                        | <i>20-120</i>   | <i>%REC</i>                | <i>1</i>           | <i>27-Aug-2014 17:17</i> |
| <i>Surr: 4-Terphenyl-d14</i>       | <i>83.8</i> |                        | <i>40-135</i>   | <i>%REC</i>                | <i>1</i>           | <i>27-Aug-2014 17:17</i> |
| <i>Surr: Nitrobenzene-d5</i>       | <i>66.0</i> |                        | <i>41-120</i>   | <i>%REC</i>                | <i>1</i>           | <i>27-Aug-2014 17:17</i> |
| <i>Surr: Phenol-d6</i>             | <i>66.3</i> |                        | <i>20-120</i>   | <i>%REC</i>                | <i>1</i>           | <i>27-Aug-2014 17:17</i> |
| <b>ALKALINITY BY SM2320B</b>       |             | <b>Method: SM2320B</b> |                 | Analyst: MYC               |                    |                          |
| Alkalinity, Bicarbonate (As CaCO3) | ND          |                        | 5.00            | mg/L                       | 1                  | 02-Sep-2014 13:08        |
| Alkalinity, Carbonate (As CaCO3)   | ND          |                        | 5.00            | mg/L                       | 1                  | 02-Sep-2014 13:08        |
| Alkalinity, Hydroxide (As CaCO3)   | ND          |                        | 5.00            | mg/L                       | 1                  | 02-Sep-2014 13:08        |
| Alkalinity, Total (As CaCO3)       | ND          |                        | 5.00            | mg/L                       | 1                  | 02-Sep-2014 13:08        |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: EB-08-21-14-A  
 Collection Date: 21-Aug-2014 19:05

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-09  
 Matrix:Groundwater

| ANALYSES                                     | RESULT         | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|----------------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |                | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| <b>Aluminum</b>                              | <b>0.109</b>   |                          | <b>0.0100</b>   | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:30 |
| Arsenic                                      | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:30 |
| <b>Barium</b>                                | <b>0.0138</b>  |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:30 |
| Boron                                        | ND             |                          | 0.0200          | mg/L                       | 1                  | 05-Sep-2014 18:56 |
| Cadmium                                      | ND             |                          | 0.00200         | mg/L                       | 1                  | 04-Sep-2014 18:30 |
| <b>Calcium</b>                               | <b>2.06</b>    |                          | <b>0.500</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:30 |
| <b>Chromium</b>                              | <b>0.0227</b>  |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:30 |
| Cobalt                                       | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:30 |
| Copper                                       | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:30 |
| Iron                                         | ND             |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:30 |
| Lead                                         | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:30 |
| Magnesium                                    | ND             |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:30 |
| Manganese                                    | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:30 |
| Molybdenum                                   | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:30 |
| <b>Nickel</b>                                | <b>0.0107</b>  |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:30 |
| Potassium                                    | ND             |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:30 |
| Selenium                                     | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:30 |
| Silver                                       | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:30 |
| <b>Sodium</b>                                | <b>0.760</b>   |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:30 |
| Uranium                                      | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:30 |
| <b>Zinc</b>                                  | <b>0.00769</b> |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:30 |
| <b>MERCURY BY SW7470A</b>                    |                | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 25-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND             |                          | 0.000200        | mg/L                       | 1                  | 25-Aug-2014 15:24 |
| <b>PH BY SM4500H+ B</b>                      |                | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| <b>pH</b>                                    | <b>6.34</b>    | H                        | <b>0.100</b>    | <b>pH Units</b>            | 1                  | 02-Sep-2014 13:08 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |                | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | ND             |                          | 5.00            | umhos/cm                   | 1                  | 02-Sep-2014 13:08 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |                | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | ND             |                          | 10.0            | mg/L                       | 1                  | 28-Aug-2014 16:30 |
| <b>ANIONS BY E300.0</b>                      |                | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | ND             |                          | 0.500           | mg/L                       | 1                  | 07-Sep-2014 07:34 |
| Fluoride                                     | ND             |                          | 0.100           | mg/L                       | 1                  | 07-Sep-2014 07:34 |
| Sulfate                                      | ND             |                          | 0.500           | mg/L                       | 1                  | 07-Sep-2014 07:34 |
| <b>NITRATE/NITRITE BY E300.0</b>             |                | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | ND             |                          | 1.00            | mg/L                       | 5                  | 07-Sep-2014 20:35 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-7  
 Collection Date: 21-Aug-2014 08:05

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-10  
 Matrix:Groundwater

| ANALYSES                   | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| 1,1,2,2-Tetrachloroethane  | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| 1,1,2-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| 1,1-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| 1,1-Dichloroethene         | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| 1,2,4-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| 1,2-Dibromoethane          | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| 1,2-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| 1,2-Dichloropropane        | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| 1,3,5-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| 2-Butanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 29-Aug-2014 02:10 |
| 2-Hexanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 29-Aug-2014 02:10 |
| 4-Isopropyltoluene         | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| 4-Methyl-2-pentanone       | ND     |                      | 0.010           | mg/L        | 1                  | 29-Aug-2014 02:10 |
| Acetone                    | ND     |                      | 0.010           | mg/L        | 1                  | 29-Aug-2014 02:10 |
| Benzene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| Bromodichloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| Bromoform                  | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| Bromomethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| Carbon disulfide           | ND     |                      | 0.010           | mg/L        | 1                  | 29-Aug-2014 02:10 |
| Carbon tetrachloride       | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| Chlorobenzene              | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| Chloroethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| Chloroform                 | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| Chloromethane              | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| cis-1,2-Dichloroethene     | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| cis-1,3-Dichloropropene    | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| Dibromochloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| Ethylbenzene               | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| Isopropylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| m,p-Xylene                 | ND     |                      | 0.010           | mg/L        | 1                  | 29-Aug-2014 02:10 |
| Methyl tert-butyl ether    | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| Methylene chloride         | ND     |                      | 0.010           | mg/L        | 1                  | 29-Aug-2014 02:10 |
| Naphthalene                | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| n-Butylbenzene             | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| n-Propylbenzene            | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| o-Xylene                   | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| sec-Butylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| Styrene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| Tetrachloroethene          | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| Toluene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| trans-1,2-Dichloroethene   | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |

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Client: Navajo Refining Company  
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Sample ID: MW-7  
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**ANALYTICAL REPORT**

WorkOrder:HS14080845  
Lab ID:HS14080845-10  
Matrix:Groundwater

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 29-Aug-2014 02:10 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 29-Aug-2014 02:10 |
| Surr: 1,2-Dichloroethane-d4 | 107    |                      | 70-125          | %REC        | 1                  | 29-Aug-2014 02:10 |
| Surr: 4-Bromofluorobenzene  | 102    |                      | 72-125          | %REC        | 1                  | 29-Aug-2014 02:10 |
| Surr: Dibromofluoromethane  | 99.2   |                      | 71-125          | %REC        | 1                  | 29-Aug-2014 02:10 |
| Surr: Toluene-d8            | 104    |                      | 75-125          | %REC        | 1                  | 29-Aug-2014 02:10 |

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**ANALYTICAL REPORT**

WorkOrder:HS14080845  
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 Matrix:Groundwater

| ANALYSES                          | RESULT      | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------------|-------------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>    |             | <b>Method:SW8270</b> |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                     | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| 1-Methylnaphthalene               | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| 2,4,5-Trichlorophenol             | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| 2,4,6-Trichlorophenol             | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| 2,4-Dichlorophenol                | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| 2,4-Dimethylphenol                | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| 2,4-Dinitrophenol                 | ND          |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| <b>2,4-Dinitrotoluene</b>         | <b>0.64</b> |                      | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 27-Aug-2014 16:00 |
| <b>2,6-Dinitrotoluene</b>         | <b>1.1</b>  |                      | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 27-Aug-2014 16:00 |
| 2-Chloronaphthalene               | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| 2-Chlorophenol                    | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| 2-Methylnaphthalene               | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| 2-Methylphenol                    | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| 2-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| 2-Nitrophenol                     | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| 3&4-Methylphenol                  | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| 3,3'-Dichlorobenzidine            | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| 3-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| 4,6-Dinitro-2-methylphenol        | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| 4-Bromophenyl phenyl ether        | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| 4-Chloro-3-methylphenol           | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| 4-Chloroaniline                   | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| 4-Chlorophenyl phenyl ether       | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| 4-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| 4-Nitrophenol                     | ND          |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| <b>Acenaphthene</b>               | <b>0.26</b> |                      | <b>0.10</b>     | <b>ug/L</b>               | 1                  | 27-Aug-2014 16:00 |
| Acenaphthylene                    | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| Acetophenone                      | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| Anthracene                        | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| Atrazine                          | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| Benz(a)anthracene                 | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| Benzaldehyde                      | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| Benzo(a)pyrene                    | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| Benzo(b)fluoranthene              | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| Benzo(g,h,i)perylene              | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| Benzo(k)fluoranthene              | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| Bis(2-chloroethoxy)methane        | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| Bis(2-chloroethyl)ether           | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| Bis(2-chloroisopropyl)ether       | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>1.0</b>  |                      | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 27-Aug-2014 16:00 |
| Butyl benzyl phthalate            | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |
| Caprolactam                       | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00 |

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 Project: Lovington Lea Refining - SA  
 Sample ID: MW-7  
 Collection Date: 21-Aug-2014 08:05

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-10  
 Matrix:Groundwater

| ANALYSES                                  | RESULT      | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED         |
|-------------------------------------------|-------------|-----------------------|-----------------|---------------------------|--------------------|--------------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>            |             | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG              |
| Carbazole                                 | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00        |
| Chrysene                                  | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:00        |
| Dibenz(a,h)anthracene                     | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:00        |
| Dibenzofuran                              | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:00        |
| Diethyl phthalate                         | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00        |
| <b>Dimethyl phthalate</b>                 | <b>0.24</b> |                       | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 27-Aug-2014 16:00        |
| Di-n-butyl phthalate                      | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00        |
| Di-n-octyl phthalate                      | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00        |
| Fluoranthene                              | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:00        |
| Fluorene                                  | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:00        |
| Hexachlorobenzene                         | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00        |
| Hexachlorobutadiene                       | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00        |
| Hexachlorocyclopentadiene                 | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00        |
| Hexachloroethane                          | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00        |
| Indeno(1,2,3-cd)pyrene                    | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:00        |
| <b>Isophorone</b>                         | <b>2.1</b>  |                       | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 27-Aug-2014 16:00        |
| Naphthalene                               | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:00        |
| Nitrobenzene                              | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00        |
| <b>N-Nitrosodi-n-propylamine</b>          | <b>0.67</b> |                       | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 27-Aug-2014 16:00        |
| N-Nitrosodiphenylamine                    | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00        |
| Pentachlorophenol                         | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00        |
| Phenanthrene                              | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:00        |
| Phenol                                    | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:00        |
| Pyrene                                    | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:00        |
| <i>Surr: 2,4,6-Tribromophenol</i>         | <i>80.1</i> |                       | <i>34-129</i>   | <i>%REC</i>               | <i>1</i>           | <i>27-Aug-2014 16:00</i> |
| <i>Surr: 2-Fluorobiphenyl</i>             | <i>72.6</i> |                       | <i>40-125</i>   | <i>%REC</i>               | <i>1</i>           | <i>27-Aug-2014 16:00</i> |
| <i>Surr: 2-Fluorophenol</i>               | <i>66.2</i> |                       | <i>20-120</i>   | <i>%REC</i>               | <i>1</i>           | <i>27-Aug-2014 16:00</i> |
| <i>Surr: 4-Terphenyl-d14</i>              | <i>80.8</i> |                       | <i>40-135</i>   | <i>%REC</i>               | <i>1</i>           | <i>27-Aug-2014 16:00</i> |
| <i>Surr: Nitrobenzene-d5</i>              | <i>70.1</i> |                       | <i>41-120</i>   | <i>%REC</i>               | <i>1</i>           | <i>27-Aug-2014 16:00</i> |
| <i>Surr: Phenol-d6</i>                    | <i>68.3</i> |                       | <i>20-120</i>   | <i>%REC</i>               | <i>1</i>           | <i>27-Aug-2014 16:00</i> |
| <b>ALKALINITY BY SM2320B</b>              |             | <b>Method:SM2320B</b> |                 | Analyst: MYC              |                    |                          |
| <b>Alkalinity, Bicarbonate (As CaCO3)</b> | <b>214</b>  |                       | <b>5.00</b>     | <b>mg/L</b>               | 1                  | 02-Sep-2014 13:14        |
| Alkalinity, Carbonate (As CaCO3)          | ND          |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 13:14        |
| Alkalinity, Hydroxide (As CaCO3)          | ND          |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 13:14        |
| <b>Alkalinity, Total (As CaCO3)</b>       | <b>214</b>  |                       | <b>5.00</b>     | <b>mg/L</b>               | 1                  | 02-Sep-2014 13:14        |

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Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-7  
 Collection Date: 21-Aug-2014 08:05

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-10  
 Matrix:Groundwater

| ANALYSES                                     | RESULT         | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|----------------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |                | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | ND             |                          | 0.0100          | mg/L                       | 1                  | 04-Sep-2014 18:33 |
| Arsenic                                      | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:33 |
| <b>Barium</b>                                | <b>0.207</b>   |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:33 |
| <b>Boron</b>                                 | <b>0.110</b>   |                          | <b>0.0200</b>   | <b>mg/L</b>                | 1                  | 05-Sep-2014 18:58 |
| Cadmium                                      | ND             |                          | 0.00200         | mg/L                       | 1                  | 04-Sep-2014 18:33 |
| <b>Calcium</b>                               | <b>70.4</b>    |                          | <b>0.500</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:33 |
| Chromium                                     | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:33 |
| Cobalt                                       | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:33 |
| Copper                                       | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:33 |
| Iron                                         | ND             |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:33 |
| Lead                                         | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:33 |
| <b>Magnesium</b>                             | <b>7.31</b>    |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:33 |
| <b>Manganese</b>                             | <b>0.470</b>   |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:33 |
| Molybdenum                                   | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:33 |
| Nickel                                       | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:33 |
| <b>Potassium</b>                             | <b>2.06</b>    |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:33 |
| Selenium                                     | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:33 |
| Silver                                       | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:33 |
| <b>Sodium</b>                                | <b>40.7</b>    |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:33 |
| Uranium                                      | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:33 |
| <b>Zinc</b>                                  | <b>0.00566</b> |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:33 |
| <b>MERCURY BY SW7470A</b>                    |                | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 25-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND             |                          | 0.000200        | mg/L                       | 1                  | 25-Aug-2014 15:26 |
| <b>PH BY SM4500H+ B</b>                      |                | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| <b>pH</b>                                    | <b>7.63</b>    | <b>H</b>                 | <b>0.100</b>    | <b>pH Units</b>            | 1                  | 02-Sep-2014 13:14 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |                | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 594            |                          | 5.00            | umhos/cm                   | 1                  | 02-Sep-2014 13:14 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |                | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 380            |                          | 10.0            | mg/L                       | 1                  | 28-Aug-2014 16:30 |
| <b>ANIONS BY E300.0</b>                      |                | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 30.8           |                          | 0.500           | mg/L                       | 1                  | 07-Sep-2014 08:39 |
| Fluoride                                     | 0.642          |                          | 0.100           | mg/L                       | 1                  | 07-Sep-2014 08:39 |
| Sulfate                                      | 62.2           |                          | 0.500           | mg/L                       | 1                  | 07-Sep-2014 08:39 |
| <b>NITRATE/NITRITE BY E300.0</b>             |                | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 1.72           |                          | 1.00            | mg/L                       | 5                  | 07-Sep-2014 21:40 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: RW-1  
 Collection Date: 21-Aug-2014 09:25

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-11  
 Matrix:Groundwater

| ANALYSES                   | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| 1,1,2,2-Tetrachloroethane  | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| 1,1,2-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| 1,1-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| 1,1-Dichloroethene         | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| 1,2,4-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| 1,2-Dibromoethane          | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| 1,2-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| 1,2-Dichloropropane        | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| 1,3,5-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| 2-Butanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 29-Aug-2014 12:33 |
| 2-Hexanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 29-Aug-2014 12:33 |
| 4-Isopropyltoluene         | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| 4-Methyl-2-pentanone       | ND     |                      | 0.010           | mg/L        | 1                  | 29-Aug-2014 12:33 |
| Acetone                    | ND     |                      | 0.010           | mg/L        | 1                  | 29-Aug-2014 12:33 |
| Benzene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| Bromodichloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| Bromoform                  | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| Bromomethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| Carbon disulfide           | ND     |                      | 0.010           | mg/L        | 1                  | 29-Aug-2014 12:33 |
| Carbon tetrachloride       | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| Chlorobenzene              | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| Chloroethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| Chloroform                 | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| Chloromethane              | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| cis-1,2-Dichloroethene     | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| cis-1,3-Dichloropropene    | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| Dibromochloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| Ethylbenzene               | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| Isopropylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| m,p-Xylene                 | ND     |                      | 0.010           | mg/L        | 1                  | 29-Aug-2014 12:33 |
| Methyl tert-butyl ether    | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| Methylene chloride         | ND     |                      | 0.010           | mg/L        | 1                  | 29-Aug-2014 12:33 |
| Naphthalene                | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| n-Butylbenzene             | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| n-Propylbenzene            | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| o-Xylene                   | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| sec-Butylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| Styrene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| Tetrachloroethene          | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| Toluene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| trans-1,2-Dichloroethene   | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: RW-1  
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**ANALYTICAL REPORT**

WorkOrder:HS14080845  
Lab ID:HS14080845-11  
Matrix:Groundwater

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 29-Aug-2014 12:33 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 29-Aug-2014 12:33 |
| Surr: 1,2-Dichloroethane-d4 | 102    |                      | 70-125          | %REC        | 1                  | 29-Aug-2014 12:33 |
| Surr: 4-Bromofluorobenzene  | 99.7   |                      | 72-125          | %REC        | 1                  | 29-Aug-2014 12:33 |
| Surr: Dibromofluoromethane  | 99.9   |                      | 71-125          | %REC        | 1                  | 29-Aug-2014 12:33 |
| Surr: Toluene-d8            | 106    |                      | 75-125          | %REC        | 1                  | 29-Aug-2014 12:33 |

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**ANALYTICAL REPORT**

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| ANALYSES                          | RESULT      | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------------|-------------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>    |             | <b>Method:SW8270</b> |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                     | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| 1-Methylnaphthalene               | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| 2,4,5-Trichlorophenol             | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| 2,4,6-Trichlorophenol             | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| 2,4-Dichlorophenol                | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| 2,4-Dimethylphenol                | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| 2,4-Dinitrophenol                 | ND          |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| <b>2,4-Dinitrotoluene</b>         | <b>0.65</b> |                      | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 27-Aug-2014 16:20 |
| <b>2,6-Dinitrotoluene</b>         | <b>1.2</b>  |                      | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 27-Aug-2014 16:20 |
| 2-Chloronaphthalene               | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| 2-Chlorophenol                    | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| 2-Methylnaphthalene               | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| 2-Methylphenol                    | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| 2-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| 2-Nitrophenol                     | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| 3&4-Methylphenol                  | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| 3,3'-Dichlorobenzidine            | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| 3-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| 4,6-Dinitro-2-methylphenol        | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| 4-Bromophenyl phenyl ether        | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| 4-Chloro-3-methylphenol           | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| 4-Chloroaniline                   | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| 4-Chlorophenyl phenyl ether       | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| 4-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| 4-Nitrophenol                     | ND          |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| <b>Acenaphthene</b>               | <b>0.44</b> |                      | <b>0.10</b>     | <b>ug/L</b>               | 1                  | 27-Aug-2014 16:20 |
| Acenaphthylene                    | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Acetophenone                      | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Anthracene                        | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Atrazine                          | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Benz(a)anthracene                 | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Benzaldehyde                      | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Benzo(a)pyrene                    | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Benzo(b)fluoranthene              | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Benzo(g,h,i)perylene              | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Benzo(k)fluoranthene              | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Bis(2-chloroethoxy)methane        | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Bis(2-chloroethyl)ether           | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Bis(2-chloroisopropyl)ether       | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>3.3</b>  |                      | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 27-Aug-2014 16:20 |
| Butyl benzyl phthalate            | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Caprolactam                       | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |

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Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: RW-1  
 Collection Date: 21-Aug-2014 09:25

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-11  
 Matrix:Groundwater

| ANALYSES                                  | RESULT      | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-------------------------------------------|-------------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>            |             | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| Carbazole                                 | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Chrysene                                  | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Dibenz(a,h)anthracene                     | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Dibenzofuran                              | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Diethyl phthalate                         | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| <b>Dimethyl phthalate</b>                 | <b>0.23</b> |                       | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 27-Aug-2014 16:20 |
| Di-n-butyl phthalate                      | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Di-n-octyl phthalate                      | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Fluoranthene                              | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Fluorene                                  | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Hexachlorobenzene                         | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Hexachlorobutadiene                       | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Hexachlorocyclopentadiene                 | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Hexachloroethane                          | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Indeno(1,2,3-cd)pyrene                    | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Isophorone                                | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Naphthalene                               | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| <b>Nitrobenzene</b>                       | <b>0.23</b> |                       | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 27-Aug-2014 16:20 |
| <b>N-Nitrosodi-n-propylamine</b>          | <b>0.63</b> |                       | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 27-Aug-2014 16:20 |
| N-Nitrosodiphenylamine                    | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Pentachlorophenol                         | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Phenanthrene                              | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Phenol                                    | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| Pyrene                                    | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:20 |
| <i>Surr: 2,4,6-Tribromophenol</i>         | 77.6        |                       | 34-129          | %REC                      | 1                  | 27-Aug-2014 16:20 |
| <i>Surr: 2-Fluorobiphenyl</i>             | 66.3        |                       | 40-125          | %REC                      | 1                  | 27-Aug-2014 16:20 |
| <i>Surr: 2-Fluorophenol</i>               | 63.4        |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 16:20 |
| <i>Surr: 4-Terphenyl-d14</i>              | 75.3        |                       | 40-135          | %REC                      | 1                  | 27-Aug-2014 16:20 |
| <i>Surr: Nitrobenzene-d5</i>              | 64.0        |                       | 41-120          | %REC                      | 1                  | 27-Aug-2014 16:20 |
| <i>Surr: Phenol-d6</i>                    | 63.7        |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 16:20 |
| <b>ALKALINITY BY SM2320B</b>              |             | <b>Method:SM2320B</b> |                 | Analyst: MYC              |                    |                   |
| <b>Alkalinity, Bicarbonate (As CaCO3)</b> | <b>189</b>  |                       | <b>5.00</b>     | <b>mg/L</b>               | 1                  | 02-Sep-2014 13:20 |
| Alkalinity, Carbonate (As CaCO3)          | ND          |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 13:20 |
| Alkalinity, Hydroxide (As CaCO3)          | ND          |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 13:20 |
| <b>Alkalinity, Total (As CaCO3)</b>       | <b>189</b>  |                       | <b>5.00</b>     | <b>mg/L</b>               | 1                  | 02-Sep-2014 13:20 |

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Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: RW-1  
 Collection Date: 21-Aug-2014 09:25

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-11  
 Matrix:Groundwater

| ANALYSES                                     | RESULT  | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |         | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 0.0156  |                          | 0.0100          | mg/L                       | 1                  | 04-Sep-2014 18:36 |
| Arsenic                                      | 0.00919 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:36 |
| Barium                                       | 0.145   |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:36 |
| Boron                                        | 0.102   |                          | 0.0200          | mg/L                       | 1                  | 05-Sep-2014 19:01 |
| Cadmium                                      | ND      |                          | 0.00200         | mg/L                       | 1                  | 04-Sep-2014 18:36 |
| Calcium                                      | 60.3    |                          | 0.500           | mg/L                       | 1                  | 04-Sep-2014 18:36 |
| Chromium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:36 |
| Cobalt                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:36 |
| Copper                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:36 |
| Iron                                         | ND      |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:36 |
| Lead                                         | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:36 |
| Magnesium                                    | 7.13    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:36 |
| Manganese                                    | 0.00804 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:36 |
| Molybdenum                                   | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:36 |
| Nickel                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:36 |
| Potassium                                    | 2.34    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:36 |
| Selenium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:36 |
| Silver                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:36 |
| Sodium                                       | 45.5    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:36 |
| Uranium                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:36 |
| Zinc                                         | 0.00581 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:36 |
| <b>MERCURY BY SW7470A</b>                    |         | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 25-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND      |                          | 0.000200        | mg/L                       | 1                  | 25-Aug-2014 15:27 |
| <b>PH BY SM4500H+ B</b>                      |         | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 7.95    | H                        | 0.100           | pH Units                   | 1                  | 02-Sep-2014 13:20 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |         | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 564     |                          | 5.00            | umhos/cm                   | 1                  | 02-Sep-2014 13:20 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |         | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 368     |                          | 10.0            | mg/L                       | 1                  | 28-Aug-2014 16:30 |
| <b>ANIONS BY E300.0</b>                      |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 25.6    |                          | 0.500           | mg/L                       | 1                  | 07-Sep-2014 09:01 |
| Fluoride                                     | 1.21    |                          | 0.100           | mg/L                       | 1                  | 07-Sep-2014 09:01 |
| Sulfate                                      | 76.0    |                          | 0.500           | mg/L                       | 1                  | 07-Sep-2014 09:01 |
| <b>NITRATE/NITRITE BY E300.0</b>             |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 1.29    |                          | 1.00            | mg/L                       | 5                  | 07-Sep-2014 22:02 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-1  
 Collection Date: 21-Aug-2014 10:30

**ANALYTICAL REPORT**

WorkOrder: HS14080845  
 Lab ID: HS14080845-12  
 Matrix: Groundwater

| ANALYSES                   | RESULT                | QUAL | REPORT<br>LIMIT | UNITS | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|-----------------------|------|-----------------|-------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> | <b>Method: SW8260</b> |      |                 |       |                    | Analyst: PC       |
| 1,1,1-Trichloroethane      | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| 1,1,2,2-Tetrachloroethane  | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| 1,1,2-Trichloroethane      | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| 1,1-Dichloroethane         | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| 1,1-Dichloroethene         | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| 1,2,4-Trimethylbenzene     | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| 1,2-Dibromoethane          | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| 1,2-Dichloroethane         | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| 1,2-Dichloropropane        | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| 1,3,5-Trimethylbenzene     | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| 2-Butanone                 | ND                    |      | 0.010           | mg/L  | 1                  | 29-Aug-2014 13:01 |
| 2-Hexanone                 | ND                    |      | 0.010           | mg/L  | 1                  | 29-Aug-2014 13:01 |
| 4-Isopropyltoluene         | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| 4-Methyl-2-pentanone       | ND                    |      | 0.010           | mg/L  | 1                  | 29-Aug-2014 13:01 |
| Acetone                    | ND                    |      | 0.010           | mg/L  | 1                  | 29-Aug-2014 13:01 |
| Benzene                    | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| Bromodichloromethane       | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| Bromoform                  | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| Bromomethane               | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| Carbon disulfide           | ND                    |      | 0.010           | mg/L  | 1                  | 29-Aug-2014 13:01 |
| Carbon tetrachloride       | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| Chlorobenzene              | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| Chloroethane               | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| Chloroform                 | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| Chloromethane              | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| cis-1,2-Dichloroethene     | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| cis-1,3-Dichloropropene    | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| Dibromochloromethane       | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| Ethylbenzene               | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| Isopropylbenzene           | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| m,p-Xylene                 | ND                    |      | 0.010           | mg/L  | 1                  | 29-Aug-2014 13:01 |
| Methyl tert-butyl ether    | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| Methylene chloride         | ND                    |      | 0.010           | mg/L  | 1                  | 29-Aug-2014 13:01 |
| Naphthalene                | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| n-Butylbenzene             | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| n-Propylbenzene            | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| o-Xylene                   | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| sec-Butylbenzene           | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| Styrene                    | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| Tetrachloroethene          | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| Toluene                    | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |
| trans-1,2-Dichloroethene   | ND                    |      | 0.0050          | mg/L  | 1                  | 29-Aug-2014 13:01 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-1  
Collection Date: 21-Aug-2014 10:30

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
Lab ID:HS14080845-12  
Matrix:Groundwater

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:01 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:01 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 29-Aug-2014 13:01 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 29-Aug-2014 13:01 |
| Surr: 1,2-Dichloroethane-d4 | 104    |                      | 70-125          | %REC        | 1                  | 29-Aug-2014 13:01 |
| Surr: 4-Bromofluorobenzene  | 103    |                      | 72-125          | %REC        | 1                  | 29-Aug-2014 13:01 |
| Surr: Dibromofluoromethane  | 102    |                      | 71-125          | %REC        | 1                  | 29-Aug-2014 13:01 |
| Surr: Toluene-d8            | 105    |                      | 75-125          | %REC        | 1                  | 29-Aug-2014 13:01 |

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Client: Navajo Refining Company  
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**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-12  
 Matrix:Groundwater

| ANALYSES                          | RESULT     | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------------|------------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>    |            | <b>Method:SW8270</b> |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                     | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| 1-Methylnaphthalene               | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| 2,4,5-Trichlorophenol             | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| 2,4,6-Trichlorophenol             | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| 2,4-Dichlorophenol                | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| 2,4-Dimethylphenol                | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| 2,4-Dinitrophenol                 | ND         |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| 2,4-Dinitrotoluene                | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| 2,6-Dinitrotoluene                | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| 2-Chloronaphthalene               | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| 2-Chlorophenol                    | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| 2-Methylnaphthalene               | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| 2-Methylphenol                    | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| 2-Nitroaniline                    | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| 2-Nitrophenol                     | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| 3&4-Methylphenol                  | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| 3,3'-Dichlorobenzidine            | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| 3-Nitroaniline                    | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| 4,6-Dinitro-2-methylphenol        | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| 4-Bromophenyl phenyl ether        | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| 4-Chloro-3-methylphenol           | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| 4-Chloroaniline                   | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| 4-Chlorophenyl phenyl ether       | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| 4-Nitroaniline                    | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| 4-Nitrophenol                     | ND         |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Acenaphthene                      | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Acenaphthylene                    | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Acetophenone                      | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Anthracene                        | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Atrazine                          | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Benz(a)anthracene                 | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Benzaldehyde                      | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Benzo(a)pyrene                    | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Benzo(b)fluoranthene              | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Benzo(g,h,i)perylene              | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Benzo(k)fluoranthene              | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Bis(2-chloroethoxy)methane        | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Bis(2-chloroethyl)ether           | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Bis(2-chloroisopropyl)ether       | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>2.2</b> |                      | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 27-Aug-2014 16:39 |
| Butyl benzyl phthalate            | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Caprolactam                       | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-1  
 Collection Date: 21-Aug-2014 10:30

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-12  
 Matrix:Groundwater

| ANALYSES                           | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Chrysene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Dibenz(a,h)anthracene              | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Dibenzofuran                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Diethyl phthalate                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Dimethyl phthalate                 | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Di-n-butyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Di-n-octyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Fluoranthene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Fluorene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Hexachlorobenzene                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Hexachlorobutadiene                | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Hexachlorocyclopentadiene          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Hexachloroethane                   | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Indeno(1,2,3-cd)pyrene             | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Isophorone                         | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Naphthalene                        | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Nitrobenzene                       | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| N-Nitrosodi-n-propylamine          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| N-Nitrosodiphenylamine             | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Pentachlorophenol                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Phenanthrene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Phenol                             | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Pyrene                             | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 16:39 |
| Surr: 2,4,6-Tribromophenol         | 76.1   |                       | 34-129          | %REC                      | 1                  | 27-Aug-2014 16:39 |
| Surr: 2-Fluorobiphenyl             | 63.6   |                       | 40-125          | %REC                      | 1                  | 27-Aug-2014 16:39 |
| Surr: 2-Fluorophenol               | 59.3   |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 16:39 |
| Surr: 4-Terphenyl-d14              | 77.6   |                       | 40-135          | %REC                      | 1                  | 27-Aug-2014 16:39 |
| Surr: Nitrobenzene-d5              | 63.1   |                       | 41-120          | %REC                      | 1                  | 27-Aug-2014 16:39 |
| Surr: Phenol-d6                    | 60.4   |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 16:39 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method:SM2320B</b> |                 | Analyst: MYC              |                    |                   |
| Alkalinity, Bicarbonate (As CaCO3) | 216    |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 13:34 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 13:34 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 13:34 |
| Alkalinity, Total (As CaCO3)       | 216    |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 13:34 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-1  
 Collection Date: 21-Aug-2014 10:30

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-12  
 Matrix:Groundwater

| ANALYSES                                     | RESULT | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|--------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |        | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 0.0135 |                          | 0.0100          | mg/L                       | 1                  | 04-Sep-2014 18:38 |
| Arsenic                                      | 0.0102 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:38 |
| Barium                                       | 0.138  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:38 |
| Boron                                        | 0.109  |                          | 0.0200          | mg/L                       | 1                  | 05-Sep-2014 19:04 |
| Cadmium                                      | ND     |                          | 0.00200         | mg/L                       | 1                  | 04-Sep-2014 18:38 |
| Calcium                                      | 71.4   |                          | 0.500           | mg/L                       | 1                  | 04-Sep-2014 18:38 |
| Chromium                                     | ND     |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:38 |
| Cobalt                                       | ND     |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:38 |
| Copper                                       | ND     |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:38 |
| Iron                                         | ND     |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:38 |
| Lead                                         | ND     |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:38 |
| Magnesium                                    | 7.54   |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:38 |
| Manganese                                    | 0.0172 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:38 |
| Molybdenum                                   | ND     |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:38 |
| Nickel                                       | ND     |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:38 |
| Potassium                                    | 1.70   |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:38 |
| Selenium                                     | ND     |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:38 |
| Silver                                       | ND     |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:38 |
| Sodium                                       | 37.3   |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:38 |
| Uranium                                      | ND     |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:38 |
| Zinc                                         | 0.0242 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:38 |
| <b>MERCURY BY SW7470A</b>                    |        | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 25-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND     |                          | 0.000200        | mg/L                       | 1                  | 25-Aug-2014 15:29 |
| <b>PH BY SM4500H+ B</b>                      |        | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 7.74   | H                        | 0.100           | pH Units                   | 1                  | 02-Sep-2014 13:34 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |        | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 588    |                          | 5.00            | umhos/cm                   | 1                  | 02-Sep-2014 13:34 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |        | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 395    |                          | 10.0            | mg/L                       | 1                  | 28-Aug-2014 18:00 |
| <b>ANIONS BY E300.0</b>                      |        | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 26.6   |                          | 0.500           | mg/L                       | 1                  | 07-Sep-2014 09:23 |
| Fluoride                                     | 1.10   |                          | 0.100           | mg/L                       | 1                  | 07-Sep-2014 09:23 |
| Sulfate                                      | 68.0   |                          | 0.500           | mg/L                       | 1                  | 07-Sep-2014 09:23 |
| <b>NITRATE/NITRITE BY E300.0</b>             |        | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 1.23   |                          | 1.00            | mg/L                       | 5                  | 07-Sep-2014 22:24 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-6  
 Collection Date: 21-Aug-2014 11:55

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-13  
 Matrix:Groundwater

| ANALYSES                   | RESULT               | QUAL | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|----------------------|------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> | <b>Method:SW8260</b> |      |                 |             |                    | Analyst: PC       |
| 1,1,1-Trichloroethane      | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| 1,1,2,2-Tetrachloroethane  | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| 1,1,2-Trichloroethane      | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| 1,1-Dichloroethane         | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| 1,1-Dichloroethene         | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| 1,2,4-Trimethylbenzene     | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| 1,2-Dibromoethane          | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| 1,2-Dichloroethane         | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| 1,2-Dichloropropane        | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| 1,3,5-Trimethylbenzene     | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| 2-Butanone                 | ND                   |      | 0.010           | mg/L        | 1                  | 02-Sep-2014 19:11 |
| 2-Hexanone                 | ND                   |      | 0.010           | mg/L        | 1                  | 02-Sep-2014 19:11 |
| 4-Isopropyltoluene         | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| 4-Methyl-2-pentanone       | ND                   |      | 0.010           | mg/L        | 1                  | 02-Sep-2014 19:11 |
| Acetone                    | ND                   |      | 0.010           | mg/L        | 1                  | 02-Sep-2014 19:11 |
| Benzene                    | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| Bromodichloromethane       | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| Bromoform                  | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| Bromomethane               | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| Carbon disulfide           | ND                   |      | 0.010           | mg/L        | 1                  | 02-Sep-2014 19:11 |
| Carbon tetrachloride       | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| Chlorobenzene              | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| Chloroethane               | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| Chloroform                 | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| Chloromethane              | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| cis-1,2-Dichloroethene     | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| cis-1,3-Dichloropropene    | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| Dibromochloromethane       | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| Ethylbenzene               | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| Isopropylbenzene           | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| m,p-Xylene                 | ND                   |      | 0.010           | mg/L        | 1                  | 02-Sep-2014 19:11 |
| Methyl tert-butyl ether    | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| Methylene chloride         | ND                   |      | 0.010           | mg/L        | 1                  | 02-Sep-2014 19:11 |
| Naphthalene                | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| n-Butylbenzene             | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| n-Propylbenzene            | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| o-Xylene                   | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| <b>sec-Butylbenzene</b>    | <b>0.0061</b>        |      | <b>0.0050</b>   | <b>mg/L</b> | 1                  | 02-Sep-2014 19:11 |
| Styrene                    | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| Tetrachloroethene          | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| Toluene                    | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| trans-1,2-Dichloroethene   | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-6  
Collection Date: 21-Aug-2014 11:55

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
Lab ID:HS14080845-13  
Matrix:Groundwater

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 02-Sep-2014 19:11 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 02-Sep-2014 19:11 |
| Surr: 1,2-Dichloroethane-d4 | 112    |                      | 70-125          | %REC        | 1                  | 02-Sep-2014 19:11 |
| Surr: 4-Bromofluorobenzene  | 101    |                      | 72-125          | %REC        | 1                  | 02-Sep-2014 19:11 |
| Surr: Dibromofluoromethane  | 114    |                      | 71-125          | %REC        | 1                  | 02-Sep-2014 19:11 |
| Surr: Toluene-d8            | 100    |                      | 75-125          | %REC        | 1                  | 02-Sep-2014 19:11 |

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Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-6  
 Collection Date: 21-Aug-2014 11:55

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-13  
 Matrix:Groundwater

| ANALYSES                          | RESULT      | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------------|-------------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>    |             | <b>Method:SW8270</b> |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| <b>1,1'-Biphenyl</b>              | <b>0.53</b> |                      | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 28-Aug-2014 16:50 |
| <b>1-Methylnaphthalene</b>        | <b>2.0</b>  |                      | <b>0.10</b>     | <b>ug/L</b>               | 1                  | 28-Aug-2014 16:50 |
| 2,4,5-Trichlorophenol             | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| 2,4,6-Trichlorophenol             | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| 2,4-Dichlorophenol                | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| 2,4-Dimethylphenol                | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| 2,4-Dinitrophenol                 | ND          |                      | 1.0             | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| 2,4-Dinitrotoluene                | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| 2,6-Dinitrotoluene                | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| 2-Chloronaphthalene               | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| 2-Chlorophenol                    | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| 2-Methylnaphthalene               | ND          |                      | 0.10            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| 2-Methylphenol                    | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| 2-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| 2-Nitrophenol                     | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| 3&4-Methylphenol                  | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| 3,3'-Dichlorobenzidine            | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| 3-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| 4,6-Dinitro-2-methylphenol        | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| 4-Bromophenyl phenyl ether        | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| 4-Chloro-3-methylphenol           | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| 4-Chloroaniline                   | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| 4-Chlorophenyl phenyl ether       | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| 4-Nitroaniline                    | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| 4-Nitrophenol                     | ND          |                      | 1.0             | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| Acenaphthene                      | ND          |                      | 0.10            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| Acenaphthylene                    | ND          |                      | 0.10            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| Acetophenone                      | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| Anthracene                        | ND          |                      | 0.10            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| Atrazine                          | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| Benz(a)anthracene                 | ND          |                      | 0.10            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| Benzaldehyde                      | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| Benzo(a)pyrene                    | ND          |                      | 0.10            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| Benzo(b)fluoranthene              | ND          |                      | 0.10            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| Benzo(g,h,i)perylene              | ND          |                      | 0.10            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| Benzo(k)fluoranthene              | ND          |                      | 0.10            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| Bis(2-chloroethoxy)methane        | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| Bis(2-chloroethyl)ether           | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| Bis(2-chloroisopropyl)ether       | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>1.4</b>  |                      | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 28-Aug-2014 16:50 |
| Butyl benzyl phthalate            | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |
| Caprolactam                       | ND          |                      | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-6  
 Collection Date: 21-Aug-2014 11:55

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-13  
 Matrix:Groundwater

| ANALYSES                                  | RESULT      | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED         |
|-------------------------------------------|-------------|-----------------------|-----------------|---------------------------|--------------------|--------------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>            |             | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG              |
| Carbazole                                 | ND          |                       | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50        |
| Chrysene                                  | ND          |                       | 0.10            | ug/L                      | 1                  | 28-Aug-2014 16:50        |
| Dibenz(a,h)anthracene                     | ND          |                       | 0.10            | ug/L                      | 1                  | 28-Aug-2014 16:50        |
| <b>Dibenzofuran</b>                       | <b>1.5</b>  |                       | <b>0.10</b>     | <b>ug/L</b>               | 1                  | 28-Aug-2014 16:50        |
| Diethyl phthalate                         | ND          |                       | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50        |
| Dimethyl phthalate                        | ND          |                       | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50        |
| Di-n-butyl phthalate                      | ND          |                       | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50        |
| Di-n-octyl phthalate                      | ND          |                       | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50        |
| Fluoranthene                              | ND          |                       | 0.10            | ug/L                      | 1                  | 28-Aug-2014 16:50        |
| <b>Fluorene</b>                           | <b>0.53</b> |                       | <b>0.10</b>     | <b>ug/L</b>               | 1                  | 28-Aug-2014 16:50        |
| Hexachlorobenzene                         | ND          |                       | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50        |
| Hexachlorobutadiene                       | ND          |                       | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50        |
| Hexachlorocyclopentadiene                 | ND          |                       | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50        |
| Hexachloroethane                          | ND          |                       | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50        |
| Indeno(1,2,3-cd)pyrene                    | ND          |                       | 0.10            | ug/L                      | 1                  | 28-Aug-2014 16:50        |
| Isophorone                                | ND          |                       | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50        |
| <b>Naphthalene</b>                        | <b>0.92</b> |                       | <b>0.10</b>     | <b>ug/L</b>               | 1                  | 28-Aug-2014 16:50        |
| Nitrobenzene                              | ND          |                       | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50        |
| N-Nitrosodi-n-propylamine                 | ND          |                       | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50        |
| N-Nitrosodiphenylamine                    | ND          |                       | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50        |
| Pentachlorophenol                         | ND          |                       | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50        |
| <b>Phenanthrene</b>                       | <b>0.59</b> |                       | <b>0.10</b>     | <b>ug/L</b>               | 1                  | 28-Aug-2014 16:50        |
| Phenol                                    | ND          |                       | 0.20            | ug/L                      | 1                  | 28-Aug-2014 16:50        |
| Pyrene                                    | ND          |                       | 0.10            | ug/L                      | 1                  | 28-Aug-2014 16:50        |
| <i>Surr: 2,4,6-Tribromophenol</i>         | <i>91.4</i> |                       | <i>34-129</i>   | <i>%REC</i>               | <i>1</i>           | <i>28-Aug-2014 16:50</i> |
| <i>Surr: 2-Fluorobiphenyl</i>             | <i>72.6</i> |                       | <i>40-125</i>   | <i>%REC</i>               | <i>1</i>           | <i>28-Aug-2014 16:50</i> |
| <i>Surr: 2-Fluorophenol</i>               | <i>65.4</i> |                       | <i>20-120</i>   | <i>%REC</i>               | <i>1</i>           | <i>28-Aug-2014 16:50</i> |
| <i>Surr: 4-Terphenyl-d14</i>              | <i>78.9</i> |                       | <i>40-135</i>   | <i>%REC</i>               | <i>1</i>           | <i>28-Aug-2014 16:50</i> |
| <i>Surr: Nitrobenzene-d5</i>              | <i>59.7</i> |                       | <i>41-120</i>   | <i>%REC</i>               | <i>1</i>           | <i>28-Aug-2014 16:50</i> |
| <i>Surr: Phenol-d6</i>                    | <i>72.3</i> |                       | <i>20-120</i>   | <i>%REC</i>               | <i>1</i>           | <i>28-Aug-2014 16:50</i> |
| <b>ALKALINITY BY SM2320B</b>              |             | <b>Method:SM2320B</b> |                 | Analyst: MYC              |                    |                          |
| <b>Alkalinity, Bicarbonate (As CaCO3)</b> | <b>508</b>  |                       | <b>5.00</b>     | <b>mg/L</b>               | 1                  | 02-Sep-2014 13:40        |
| Alkalinity, Carbonate (As CaCO3)          | ND          |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 13:40        |
| Alkalinity, Hydroxide (As CaCO3)          | ND          |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 13:40        |
| <b>Alkalinity, Total (As CaCO3)</b>       | <b>508</b>  |                       | <b>5.00</b>     | <b>mg/L</b>               | 1                  | 02-Sep-2014 13:40        |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-6  
 Collection Date: 21-Aug-2014 11:55

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-13  
 Matrix:Groundwater

| ANALYSES                                     | RESULT  | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |         | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 0.0330  |                          | 0.0100          | mg/L                       | 1                  | 04-Sep-2014 18:41 |
| Arsenic                                      | 0.0185  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:41 |
| Barium                                       | 0.363   |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:41 |
| Boron                                        | 0.167   |                          | 0.0200          | mg/L                       | 1                  | 05-Sep-2014 19:06 |
| Cadmium                                      | ND      |                          | 0.00200         | mg/L                       | 1                  | 04-Sep-2014 18:41 |
| Calcium                                      | 152     |                          | 0.500           | mg/L                       | 1                  | 04-Sep-2014 18:41 |
| Chromium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:41 |
| Cobalt                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:41 |
| Copper                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:41 |
| Iron                                         | 0.268   |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:41 |
| Lead                                         | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:41 |
| Magnesium                                    | 21.9    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:41 |
| Manganese                                    | 3.06    |                          | 0.0500          | mg/L                       | 10                 | 05-Sep-2014 19:40 |
| Molybdenum                                   | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:41 |
| Nickel                                       | 0.00651 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:41 |
| Potassium                                    | 3.39    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:41 |
| Selenium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:41 |
| Silver                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:41 |
| Sodium                                       | 76.3    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:41 |
| Uranium                                      | 0.00744 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:41 |
| Zinc                                         | 0.0151  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:41 |
| <b>MERCURY BY SW7470A</b>                    |         | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 25-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND      |                          | 0.000200        | mg/L                       | 1                  | 25-Aug-2014 15:31 |
| <b>PH BY SM4500H+ B</b>                      |         | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 7.48    | H                        | 0.100           | pH Units                   | 1                  | 02-Sep-2014 13:40 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |         | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 1,300   |                          | 5.00            | umhos/cm                   | 1                  | 02-Sep-2014 13:40 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |         | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 832     |                          | 10.0            | mg/L                       | 1                  | 28-Aug-2014 18:00 |
| <b>ANIONS BY E300.0</b>                      |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 132     |                          | 2.50            | mg/L                       | 5                  | 07-Sep-2014 10:49 |
| Fluoride                                     | 0.230   |                          | 0.100           | mg/L                       | 1                  | 07-Sep-2014 10:28 |
| Sulfate                                      | 34.4    |                          | 0.500           | mg/L                       | 1                  | 07-Sep-2014 10:28 |
| <b>NITRATE/NITRITE BY E300.0</b>             |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | ND      |                          | 1.00            | mg/L                       | 5                  | 07-Sep-2014 22:45 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-15  
 Collection Date: 21-Aug-2014 13:35

**ANALYTICAL REPORT**

WorkOrder: HS14080845  
 Lab ID: HS14080845-14  
 Matrix: Groundwater

| ANALYSES                   | RESULT                | QUAL | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|-----------------------|------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> | <b>Method: SW8260</b> |      |                 |             |                    | Analyst: PC       |
| 1,1,1-Trichloroethane      | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| 1,1,2,2-Tetrachloroethane  | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| 1,1,2-Trichloroethane      | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| 1,1-Dichloroethane         | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| 1,1-Dichloroethene         | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| 1,2,4-Trimethylbenzene     | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| 1,2-Dibromoethane          | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| 1,2-Dichloroethane         | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| 1,2-Dichloropropane        | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| 1,3,5-Trimethylbenzene     | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| 2-Butanone                 | ND                    |      | 0.010           | mg/L        | 1                  | 02-Sep-2014 19:39 |
| 2-Hexanone                 | ND                    |      | 0.010           | mg/L        | 1                  | 02-Sep-2014 19:39 |
| 4-Isopropyltoluene         | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| 4-Methyl-2-pentanone       | ND                    |      | 0.010           | mg/L        | 1                  | 02-Sep-2014 19:39 |
| Acetone                    | ND                    |      | 0.010           | mg/L        | 1                  | 02-Sep-2014 19:39 |
| Benzene                    | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| Bromodichloromethane       | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| Bromoform                  | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| Bromomethane               | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| Carbon disulfide           | ND                    |      | 0.010           | mg/L        | 1                  | 02-Sep-2014 19:39 |
| Carbon tetrachloride       | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| Chlorobenzene              | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| Chloroethane               | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| <b>Chloroform</b>          | <b>0.011</b>          |      | <b>0.0050</b>   | <b>mg/L</b> | 1                  | 02-Sep-2014 19:39 |
| Chloromethane              | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| cis-1,2-Dichloroethene     | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| cis-1,3-Dichloropropene    | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| Dibromochloromethane       | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| Ethylbenzene               | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| Isopropylbenzene           | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| m,p-Xylene                 | ND                    |      | 0.010           | mg/L        | 1                  | 02-Sep-2014 19:39 |
| Methyl tert-butyl ether    | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| Methylene chloride         | ND                    |      | 0.010           | mg/L        | 1                  | 02-Sep-2014 19:39 |
| Naphthalene                | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| n-Butylbenzene             | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| n-Propylbenzene            | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| o-Xylene                   | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| sec-Butylbenzene           | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| Styrene                    | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| Tetrachloroethene          | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| Toluene                    | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| trans-1,2-Dichloroethene   | ND                    |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-15  
Collection Date: 21-Aug-2014 13:35

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
Lab ID:HS14080845-14  
Matrix:Groundwater

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 02-Sep-2014 19:39 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 02-Sep-2014 19:39 |
| Surr: 1,2-Dichloroethane-d4 | 113    |                      | 70-125          | %REC        | 1                  | 02-Sep-2014 19:39 |
| Surr: 4-Bromofluorobenzene  | 98.0   |                      | 72-125          | %REC        | 1                  | 02-Sep-2014 19:39 |
| Surr: Dibromofluoromethane  | 114    |                      | 71-125          | %REC        | 1                  | 02-Sep-2014 19:39 |
| Surr: Toluene-d8            | 99.4   |                      | 75-125          | %REC        | 1                  | 02-Sep-2014 19:39 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-15  
 Collection Date: 21-Aug-2014 13:35

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-14  
 Matrix:Groundwater

| ANALYSES                       | RESULT      | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|--------------------------------|-------------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b> |             | <b>Method:SW8270</b> |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                  | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| 1-Methylnaphthalene            | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| 2,4,5-Trichlorophenol          | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| 2,4,6-Trichlorophenol          | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| 2,4-Dichlorophenol             | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| 2,4-Dimethylphenol             | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| 2,4-Dinitrophenol              | ND          |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| 2,4-Dinitrotoluene             | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| 2,6-Dinitrotoluene             | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| 2-Chloronaphthalene            | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| 2-Chlorophenol                 | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| 2-Methylnaphthalene            | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| 2-Methylphenol                 | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| 2-Nitroaniline                 | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| 2-Nitrophenol                  | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| 3&4-Methylphenol               | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| 3,3'-Dichlorobenzidine         | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| 3-Nitroaniline                 | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| 4,6-Dinitro-2-methylphenol     | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| 4-Bromophenyl phenyl ether     | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| 4-Chloro-3-methylphenol        | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| 4-Chloroaniline                | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| 4-Chlorophenyl phenyl ether    | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| 4-Nitroaniline                 | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| 4-Nitrophenol                  | ND          |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Acenaphthene                   | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Acenaphthylene                 | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Acetophenone                   | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Anthracene                     | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| <b>Atrazine</b>                | <b>0.27</b> |                      | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 27-Aug-2014 17:56 |
| Benz(a)anthracene              | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Benzaldehyde                   | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Benzo(a)pyrene                 | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Benzo(b)fluoranthene           | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Benzo(g,h,i)perylene           | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Benzo(k)fluoranthene           | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Bis(2-chloroethoxy)methane     | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Bis(2-chloroethyl)ether        | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Bis(2-chloroisopropyl)ether    | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Bis(2-ethylhexyl)phthalate     | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Butyl benzyl phthalate         | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Caprolactam                    | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-15  
 Collection Date: 21-Aug-2014 13:35

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-14  
 Matrix:Groundwater

| ANALYSES                           | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Chrysene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Dibenz(a,h)anthracene              | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Dibenzofuran                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Diethyl phthalate                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Dimethyl phthalate                 | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Di-n-butyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Di-n-octyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Fluoranthene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Fluorene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Hexachlorobenzene                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Hexachlorobutadiene                | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Hexachlorocyclopentadiene          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Hexachloroethane                   | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Indeno(1,2,3-cd)pyrene             | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Isophorone                         | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Naphthalene                        | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Nitrobenzene                       | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| N-Nitrosodi-n-propylamine          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| N-Nitrosodiphenylamine             | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Pentachlorophenol                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Phenanthrene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Phenol                             | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Pyrene                             | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 17:56 |
| Surr: 2,4,6-Tribromophenol         | 83.0   |                       | 34-129          | %REC                      | 1                  | 27-Aug-2014 17:56 |
| Surr: 2-Fluorobiphenyl             | 71.6   |                       | 40-125          | %REC                      | 1                  | 27-Aug-2014 17:56 |
| Surr: 2-Fluorophenol               | 60.9   |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 17:56 |
| Surr: 4-Terphenyl-d14              | 82.6   |                       | 40-135          | %REC                      | 1                  | 27-Aug-2014 17:56 |
| Surr: Nitrobenzene-d5              | 66.8   |                       | 41-120          | %REC                      | 1                  | 27-Aug-2014 17:56 |
| Surr: Phenol-d6                    | 66.3   |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 17:56 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method:SM2320B</b> |                 | Analyst: MYC              |                    |                   |
| Alkalinity, Bicarbonate (As CaCO3) | 196    |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 13:46 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 13:46 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 13:46 |
| Alkalinity, Total (As CaCO3)       | 196    |                       | 5.00            | mg/L                      | 1                  | 02-Sep-2014 13:46 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-15  
 Collection Date: 21-Aug-2014 13:35

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-14  
 Matrix:Groundwater

| ANALYSES                                     | RESULT  | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |         | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 0.0102  |                          | 0.0100          | mg/L                       | 1                  | 04-Sep-2014 18:43 |
| Arsenic                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:43 |
| Barium                                       | 0.146   |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:43 |
| Boron                                        | 0.117   |                          | 0.0200          | mg/L                       | 1                  | 05-Sep-2014 19:09 |
| Cadmium                                      | ND      |                          | 0.00200         | mg/L                       | 1                  | 04-Sep-2014 18:43 |
| Calcium                                      | 92.4    |                          | 0.500           | mg/L                       | 1                  | 04-Sep-2014 18:43 |
| Chromium                                     | 0.00513 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:43 |
| Cobalt                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:43 |
| Copper                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:43 |
| Iron                                         | ND      |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:43 |
| Lead                                         | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:43 |
| Magnesium                                    | 13.1    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:43 |
| Manganese                                    | 0.00509 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:43 |
| Molybdenum                                   | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:43 |
| Nickel                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:43 |
| Potassium                                    | 2.89    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:43 |
| Selenium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:43 |
| Silver                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:43 |
| Sodium                                       | 91.0    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:43 |
| Uranium                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:43 |
| Zinc                                         | 0.0149  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:43 |
| <b>MERCURY BY SW7470A</b>                    |         | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 28-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND      |                          | 0.000200        | mg/L                       | 1                  | 28-Aug-2014 16:08 |
| <b>PH BY SM4500H+ B</b>                      |         | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 7.92    | H                        | 0.100           | pH Units                   | 1                  | 02-Sep-2014 13:46 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |         | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 1,080   |                          | 5.00            | umhos/cm                   | 1                  | 02-Sep-2014 13:46 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |         | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 690     |                          | 10.0            | mg/L                       | 1                  | 28-Aug-2014 18:00 |
| <b>ANIONS BY E300.0</b>                      |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 148     |                          | 2.50            | mg/L                       | 5                  | 07-Sep-2014 11:33 |
| Fluoride                                     | 1.02    |                          | 0.100           | mg/L                       | 1                  | 07-Sep-2014 11:11 |
| Sulfate                                      | 97.5    |                          | 2.50            | mg/L                       | 5                  | 07-Sep-2014 11:33 |
| <b>NITRATE/NITRITE BY E300.0</b>             |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 8.52    |                          | 1.00            | mg/L                       | 5                  | 08-Sep-2014 15:49 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: DUP-3  
 Collection Date: 21-Aug-2014 00:00

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-15  
 Matrix:Groundwater

| ANALYSES                   | RESULT               | QUAL | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|----------------------|------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> | <b>Method:SW8260</b> |      |                 |             |                    | Analyst: PC       |
| 1,1,1-Trichloroethane      | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| 1,1,2,2-Tetrachloroethane  | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| 1,1,2-Trichloroethane      | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| 1,1-Dichloroethane         | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| 1,1-Dichloroethene         | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| 1,2,4-Trimethylbenzene     | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| 1,2-Dibromoethane          | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| 1,2-Dichloroethane         | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| 1,2-Dichloropropane        | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| 1,3,5-Trimethylbenzene     | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| 2-Butanone                 | ND                   |      | 0.010           | mg/L        | 1                  | 02-Sep-2014 20:07 |
| 2-Hexanone                 | ND                   |      | 0.010           | mg/L        | 1                  | 02-Sep-2014 20:07 |
| 4-Isopropyltoluene         | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| 4-Methyl-2-pentanone       | ND                   |      | 0.010           | mg/L        | 1                  | 02-Sep-2014 20:07 |
| Acetone                    | ND                   |      | 0.010           | mg/L        | 1                  | 02-Sep-2014 20:07 |
| Benzene                    | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| Bromodichloromethane       | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| Bromoform                  | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| Bromomethane               | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| Carbon disulfide           | ND                   |      | 0.010           | mg/L        | 1                  | 02-Sep-2014 20:07 |
| Carbon tetrachloride       | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| Chlorobenzene              | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| Chloroethane               | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| <b>Chloroform</b>          | <b>0.011</b>         |      | <b>0.0050</b>   | <b>mg/L</b> | 1                  | 02-Sep-2014 20:07 |
| Chloromethane              | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| cis-1,2-Dichloroethene     | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| cis-1,3-Dichloropropene    | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| Dibromochloromethane       | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| Ethylbenzene               | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| Isopropylbenzene           | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| m,p-Xylene                 | ND                   |      | 0.010           | mg/L        | 1                  | 02-Sep-2014 20:07 |
| Methyl tert-butyl ether    | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| Methylene chloride         | ND                   |      | 0.010           | mg/L        | 1                  | 02-Sep-2014 20:07 |
| Naphthalene                | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| n-Butylbenzene             | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| n-Propylbenzene            | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| o-Xylene                   | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| sec-Butylbenzene           | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| Styrene                    | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| Tetrachloroethene          | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| Toluene                    | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| trans-1,2-Dichloroethene   | ND                   |      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: DUP-3  
Collection Date: 21-Aug-2014 00:00

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
Lab ID:HS14080845-15  
Matrix:Groundwater

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 02-Sep-2014 20:07 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 02-Sep-2014 20:07 |
| Surr: 1,2-Dichloroethane-d4 | 113    |                      | 70-125          | %REC        | 1                  | 02-Sep-2014 20:07 |
| Surr: 4-Bromofluorobenzene  | 102    |                      | 72-125          | %REC        | 1                  | 02-Sep-2014 20:07 |
| Surr: Dibromofluoromethane  | 113    |                      | 71-125          | %REC        | 1                  | 02-Sep-2014 20:07 |
| Surr: Toluene-d8            | 101    |                      | 75-125          | %REC        | 1                  | 02-Sep-2014 20:07 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: DUP-3  
 Collection Date: 21-Aug-2014 00:00

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-15  
 Matrix:Groundwater

| ANALYSES                       | RESULT      | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|--------------------------------|-------------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b> |             | <b>Method:SW8270</b> |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                  | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| 1-Methylnaphthalene            | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| 2,4,5-Trichlorophenol          | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| 2,4,6-Trichlorophenol          | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| 2,4-Dichlorophenol             | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| 2,4-Dimethylphenol             | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| 2,4-Dinitrophenol              | ND          |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| 2,4-Dinitrotoluene             | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| 2,6-Dinitrotoluene             | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| 2-Chloronaphthalene            | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| 2-Chlorophenol                 | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| 2-Methylnaphthalene            | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| 2-Methylphenol                 | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| 2-Nitroaniline                 | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| 2-Nitrophenol                  | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| 3&4-Methylphenol               | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| 3,3'-Dichlorobenzidine         | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| 3-Nitroaniline                 | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| 4,6-Dinitro-2-methylphenol     | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| 4-Bromophenyl phenyl ether     | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| 4-Chloro-3-methylphenol        | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| 4-Chloroaniline                | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| 4-Chlorophenyl phenyl ether    | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| 4-Nitroaniline                 | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| 4-Nitrophenol                  | ND          |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Acenaphthene                   | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Acenaphthylene                 | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Acetophenone                   | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Anthracene                     | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| <b>Atrazine</b>                | <b>0.25</b> |                      | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 27-Aug-2014 18:15 |
| Benz(a)anthracene              | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Benzaldehyde                   | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Benzo(a)pyrene                 | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Benzo(b)fluoranthene           | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Benzo(g,h,i)perylene           | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Benzo(k)fluoranthene           | ND          |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Bis(2-chloroethoxy)methane     | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Bis(2-chloroethyl)ether        | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Bis(2-chloroisopropyl)ether    | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Bis(2-ethylhexyl)phthalate     | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Butyl benzyl phthalate         | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Caprolactam                    | ND          |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: DUP-3  
 Collection Date: 21-Aug-2014 00:00

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-15  
 Matrix:Groundwater

| ANALYSES                           | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Chrysene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Dibenz(a,h)anthracene              | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Dibenzofuran                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Diethyl phthalate                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Dimethyl phthalate                 | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Di-n-butyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Di-n-octyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Fluoranthene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Fluorene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Hexachlorobenzene                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Hexachlorobutadiene                | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Hexachlorocyclopentadiene          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Hexachloroethane                   | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Indeno(1,2,3-cd)pyrene             | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Isophorone                         | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Naphthalene                        | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Nitrobenzene                       | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| N-Nitrosodi-n-propylamine          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| N-Nitrosodiphenylamine             | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Pentachlorophenol                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Phenanthrene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Phenol                             | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Pyrene                             | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:15 |
| Surr: 2,4,6-Tribromophenol         | 75.2   |                       | 34-129          | %REC                      | 1                  | 27-Aug-2014 18:15 |
| Surr: 2-Fluorobiphenyl             | 68.2   |                       | 40-125          | %REC                      | 1                  | 27-Aug-2014 18:15 |
| Surr: 2-Fluorophenol               | 60.2   |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 18:15 |
| Surr: 4-Terphenyl-d14              | 76.7   |                       | 40-135          | %REC                      | 1                  | 27-Aug-2014 18:15 |
| Surr: Nitrobenzene-d5              | 63.5   |                       | 41-120          | %REC                      | 1                  | 27-Aug-2014 18:15 |
| Surr: Phenol-d6                    | 61.3   |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 18:15 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method:SM2320B</b> |                 | Analyst: MYC              |                    |                   |
| Alkalinity, Bicarbonate (As CaCO3) | 196    |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 11:08 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 11:08 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 11:08 |
| Alkalinity, Total (As CaCO3)       | 196    |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 11:08 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: DUP-3  
 Collection Date: 21-Aug-2014 00:00

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-15  
 Matrix:Groundwater

| ANALYSES                                     | RESULT        | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |               | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| <b>Aluminum</b>                              | <b>0.0136</b> |                          | <b>0.0100</b>   | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:46 |
| Arsenic                                      | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:46 |
| <b>Barium</b>                                | <b>0.153</b>  |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:46 |
| <b>Boron</b>                                 | <b>0.119</b>  |                          | <b>0.0200</b>   | <b>mg/L</b>                | 1                  | 05-Sep-2014 19:12 |
| Cadmium                                      | ND            |                          | 0.00200         | mg/L                       | 1                  | 04-Sep-2014 18:46 |
| <b>Calcium</b>                               | <b>93.3</b>   |                          | <b>0.500</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:46 |
| Chromium                                     | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:46 |
| Cobalt                                       | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:46 |
| Copper                                       | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:46 |
| Iron                                         | ND            |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:46 |
| Lead                                         | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:46 |
| <b>Magnesium</b>                             | <b>13.3</b>   |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:46 |
| Manganese                                    | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:46 |
| Molybdenum                                   | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:46 |
| Nickel                                       | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:46 |
| <b>Potassium</b>                             | <b>2.93</b>   |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:46 |
| Selenium                                     | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:46 |
| Silver                                       | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:46 |
| <b>Sodium</b>                                | <b>90.0</b>   |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:46 |
| Uranium                                      | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:46 |
| <b>Zinc</b>                                  | <b>0.0213</b> |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:46 |
| <b>MERCURY BY SW7470A</b>                    |               | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 28-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND            |                          | 0.000200        | mg/L                       | 1                  | 28-Aug-2014 16:10 |
| <b>PH BY SM4500H+ B</b>                      |               | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| <b>pH</b>                                    | <b>7.86</b>   | <b>H</b>                 | <b>0.100</b>    | <b>pH Units</b>            | 1                  | 03-Sep-2014 11:08 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |               | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 1,070         |                          | 5.00            | umhos/cm                   | 1                  | 03-Sep-2014 11:08 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |               | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 706           |                          | 10.0            | mg/L                       | 1                  | 28-Aug-2014 18:00 |
| <b>ANIONS BY E300.0</b>                      |               | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 150           |                          | 2.50            | mg/L                       | 5                  | 07-Sep-2014 12:16 |
| Fluoride                                     | 1.01          |                          | 0.100           | mg/L                       | 1                  | 07-Sep-2014 11:54 |
| Sulfate                                      | 95.6          |                          | 2.50            | mg/L                       | 5                  | 07-Sep-2014 12:16 |
| <b>NITRATE/NITRITE BY E300.0</b>             |               | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 8.53          |                          | 1.00            | mg/L                       | 5                  | 08-Sep-2014 16:10 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-2  
 Collection Date: 21-Aug-2014 16:05

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-16  
 Matrix:Groundwater

| ANALYSES                   | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| 1,1,2,2-Tetrachloroethane  | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| 1,1,2-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| 1,1-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| 1,1-Dichloroethene         | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| 1,2,4-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| 1,2-Dibromoethane          | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| 1,2-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| 1,2-Dichloropropane        | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| 1,3,5-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| 2-Butanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 02-Sep-2014 20:35 |
| 2-Hexanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 02-Sep-2014 20:35 |
| 4-Isopropyltoluene         | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| 4-Methyl-2-pentanone       | ND     |                      | 0.010           | mg/L        | 1                  | 02-Sep-2014 20:35 |
| Acetone                    | ND     |                      | 0.010           | mg/L        | 1                  | 02-Sep-2014 20:35 |
| Benzene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| Bromodichloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| Bromoform                  | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| Bromomethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| Carbon disulfide           | ND     |                      | 0.010           | mg/L        | 1                  | 02-Sep-2014 20:35 |
| Carbon tetrachloride       | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| Chlorobenzene              | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| Chloroethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| Chloroform                 | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| Chloromethane              | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| cis-1,2-Dichloroethene     | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| cis-1,3-Dichloropropene    | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| Dibromochloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| Ethylbenzene               | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| Isopropylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| m,p-Xylene                 | ND     |                      | 0.010           | mg/L        | 1                  | 02-Sep-2014 20:35 |
| Methyl tert-butyl ether    | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| Methylene chloride         | ND     |                      | 0.010           | mg/L        | 1                  | 02-Sep-2014 20:35 |
| Naphthalene                | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| n-Butylbenzene             | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| n-Propylbenzene            | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| o-Xylene                   | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| sec-Butylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| Styrene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| Tetrachloroethene          | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| Toluene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| trans-1,2-Dichloroethene   | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-2  
Collection Date: 21-Aug-2014 16:05

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
Lab ID:HS14080845-16  
Matrix:Groundwater

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 02-Sep-2014 20:35 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 02-Sep-2014 20:35 |
| Surr: 1,2-Dichloroethane-d4 | 111    |                      | 70-125          | %REC        | 1                  | 02-Sep-2014 20:35 |
| Surr: 4-Bromofluorobenzene  | 96.6   |                      | 72-125          | %REC        | 1                  | 02-Sep-2014 20:35 |
| Surr: Dibromofluoromethane  | 108    |                      | 71-125          | %REC        | 1                  | 02-Sep-2014 20:35 |
| Surr: Toluene-d8            | 104    |                      | 75-125          | %REC        | 1                  | 02-Sep-2014 20:35 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-2  
 Collection Date: 21-Aug-2014 16:05

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-16  
 Matrix:Groundwater

| ANALYSES                          | RESULT     | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------------|------------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>    |            | <b>Method:SW8270</b> |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                     | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| 1-Methylnaphthalene               | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| 2,4,5-Trichlorophenol             | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| 2,4,6-Trichlorophenol             | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| 2,4-Dichlorophenol                | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| 2,4-Dimethylphenol                | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| 2,4-Dinitrophenol                 | ND         |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| 2,4-Dinitrotoluene                | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| 2,6-Dinitrotoluene                | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| 2-Chloronaphthalene               | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| 2-Chlorophenol                    | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| 2-Methylnaphthalene               | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| 2-Methylphenol                    | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| 2-Nitroaniline                    | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| 2-Nitrophenol                     | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| 3&4-Methylphenol                  | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| 3,3'-Dichlorobenzidine            | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| 3-Nitroaniline                    | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| 4,6-Dinitro-2-methylphenol        | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| 4-Bromophenyl phenyl ether        | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| 4-Chloro-3-methylphenol           | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| 4-Chloroaniline                   | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| 4-Chlorophenyl phenyl ether       | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| 4-Nitroaniline                    | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| 4-Nitrophenol                     | ND         |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Acenaphthene                      | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Acenaphthylene                    | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Acetophenone                      | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Anthracene                        | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Atrazine                          | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Benz(a)anthracene                 | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Benzaldehyde                      | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Benzo(a)pyrene                    | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Benzo(b)fluoranthene              | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Benzo(g,h,i)perylene              | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Benzo(k)fluoranthene              | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Bis(2-chloroethoxy)methane        | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Bis(2-chloroethyl)ether           | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Bis(2-chloroisopropyl)ether       | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>4.0</b> |                      | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 27-Aug-2014 18:34 |
| Butyl benzyl phthalate            | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Caprolactam                       | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-2  
 Collection Date: 21-Aug-2014 16:05

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-16  
 Matrix:Groundwater

| ANALYSES                           | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Chrysene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Dibenz(a,h)anthracene              | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Dibenzofuran                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Diethyl phthalate                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Dimethyl phthalate                 | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Di-n-butyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Di-n-octyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Fluoranthene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Fluorene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Hexachlorobenzene                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Hexachlorobutadiene                | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Hexachlorocyclopentadiene          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Hexachloroethane                   | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Indeno(1,2,3-cd)pyrene             | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Isophorone                         | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Naphthalene                        | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Nitrobenzene                       | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| N-Nitrosodi-n-propylamine          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| N-Nitrosodiphenylamine             | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Pentachlorophenol                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Phenanthrene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Phenol                             | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Pyrene                             | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:34 |
| Surr: 2,4,6-Tribromophenol         | 70.7   |                       | 34-129          | %REC                      | 1                  | 27-Aug-2014 18:34 |
| Surr: 2-Fluorobiphenyl             | 61.1   |                       | 40-125          | %REC                      | 1                  | 27-Aug-2014 18:34 |
| Surr: 2-Fluorophenol               | 49.1   |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 18:34 |
| Surr: 4-Terphenyl-d14              | 72.8   |                       | 40-135          | %REC                      | 1                  | 27-Aug-2014 18:34 |
| Surr: Nitrobenzene-d5              | 56.8   |                       | 41-120          | %REC                      | 1                  | 27-Aug-2014 18:34 |
| Surr: Phenol-d6                    | 55.0   |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 18:34 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method:SM2320B</b> |                 | Analyst: MYC              |                    |                   |
| Alkalinity, Bicarbonate (As CaCO3) | 232    |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 11:14 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 11:14 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 11:14 |
| Alkalinity, Total (As CaCO3)       | 232    |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 11:14 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-2  
 Collection Date: 21-Aug-2014 16:05

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-16  
 Matrix:Groundwater

| ANALYSES                                     | RESULT        | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |               | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| <b>Aluminum</b>                              | <b>0.0143</b> |                          | <b>0.0100</b>   | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:54 |
| Arsenic                                      | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:54 |
| <b>Barium</b>                                | <b>0.112</b>  |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:54 |
| <b>Boron</b>                                 | <b>0.147</b>  |                          | <b>0.0200</b>   | <b>mg/L</b>                | 1                  | 05-Sep-2014 19:19 |
| Cadmium                                      | ND            |                          | 0.00200         | mg/L                       | 1                  | 04-Sep-2014 18:54 |
| <b>Calcium</b>                               | <b>100</b>    |                          | <b>0.500</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:54 |
| Chromium                                     | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:54 |
| Cobalt                                       | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:54 |
| Copper                                       | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:54 |
| Iron                                         | ND            |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:54 |
| Lead                                         | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:54 |
| <b>Magnesium</b>                             | <b>13.1</b>   |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:54 |
| Manganese                                    | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:54 |
| Molybdenum                                   | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:54 |
| Nickel                                       | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:54 |
| <b>Potassium</b>                             | <b>2.25</b>   |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:54 |
| Selenium                                     | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:54 |
| Silver                                       | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:54 |
| <b>Sodium</b>                                | <b>72.0</b>   |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:54 |
| Uranium                                      | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:54 |
| <b>Zinc</b>                                  | <b>0.0214</b> |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 18:54 |
| <b>MERCURY BY SW7470A</b>                    |               | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 28-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND            |                          | 0.000200        | mg/L                       | 1                  | 28-Aug-2014 16:12 |
| <b>PH BY SM4500H+ B</b>                      |               | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| <b>pH</b>                                    | <b>7.83</b>   | <b>H</b>                 | <b>0.100</b>    | <b>pH Units</b>            | 1                  | 03-Sep-2014 11:14 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |               | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 989           |                          | 5.00            | umhos/cm                   | 1                  | 03-Sep-2014 11:14 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |               | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 588           |                          | 10.0            | mg/L                       | 1                  | 28-Aug-2014 18:00 |
| <b>ANIONS BY E300.0</b>                      |               | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 122           |                          | 1.00            | mg/L                       | 2                  | 07-Sep-2014 12:38 |
| Fluoride                                     | 0.812         |                          | 0.200           | mg/L                       | 2                  | 07-Sep-2014 12:38 |
| Sulfate                                      | 82.3          |                          | 1.00            | mg/L                       | 2                  | 07-Sep-2014 12:38 |
| <b>NITRATE/NITRITE BY E300.0</b>             |               | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 6.17          |                          | 1.00            | mg/L                       | 5                  | 08-Sep-2014 16:32 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-27  
 Collection Date: 21-Aug-2014 17:25

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-17  
 Matrix:Groundwater

| ANALYSES                   | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| 1,1,2,2-Tetrachloroethane  | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| 1,1,2-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| 1,1-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| 1,1-Dichloroethene         | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| 1,2,4-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| 1,2-Dibromoethane          | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| 1,2-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| 1,2-Dichloropropane        | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| 1,3,5-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| 2-Butanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 02-Sep-2014 21:03 |
| 2-Hexanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 02-Sep-2014 21:03 |
| 4-Isopropyltoluene         | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| 4-Methyl-2-pentanone       | ND     |                      | 0.010           | mg/L        | 1                  | 02-Sep-2014 21:03 |
| Acetone                    | ND     |                      | 0.010           | mg/L        | 1                  | 02-Sep-2014 21:03 |
| Benzene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| Bromodichloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| Bromoform                  | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| Bromomethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| Carbon disulfide           | ND     |                      | 0.010           | mg/L        | 1                  | 02-Sep-2014 21:03 |
| Carbon tetrachloride       | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| Chlorobenzene              | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| Chloroethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| Chloroform                 | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| Chloromethane              | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| cis-1,2-Dichloroethene     | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| cis-1,3-Dichloropropene    | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| Dibromochloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| Ethylbenzene               | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| Isopropylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| m,p-Xylene                 | ND     |                      | 0.010           | mg/L        | 1                  | 02-Sep-2014 21:03 |
| Methyl tert-butyl ether    | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| Methylene chloride         | ND     |                      | 0.010           | mg/L        | 1                  | 02-Sep-2014 21:03 |
| Naphthalene                | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| n-Butylbenzene             | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| n-Propylbenzene            | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| o-Xylene                   | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| sec-Butylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| Styrene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| Tetrachloroethene          | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| Toluene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| trans-1,2-Dichloroethene   | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-27  
Collection Date: 21-Aug-2014 17:25

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
Lab ID:HS14080845-17  
Matrix:Groundwater

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 02-Sep-2014 21:03 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 02-Sep-2014 21:03 |
| Surr: 1,2-Dichloroethane-d4 | 113    |                      | 70-125          | %REC        | 1                  | 02-Sep-2014 21:03 |
| Surr: 4-Bromofluorobenzene  | 95.4   |                      | 72-125          | %REC        | 1                  | 02-Sep-2014 21:03 |
| Surr: Dibromofluoromethane  | 116    |                      | 71-125          | %REC        | 1                  | 02-Sep-2014 21:03 |
| Surr: Toluene-d8            | 102    |                      | 75-125          | %REC        | 1                  | 02-Sep-2014 21:03 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-27  
 Collection Date: 21-Aug-2014 17:25

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-17  
 Matrix:Groundwater

| ANALYSES                       | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|--------------------------------|--------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b> |        | <b>Method:SW8270</b> |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                  | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| 1-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| 2,4,5-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| 2,4,6-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| 2,4-Dichlorophenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| 2,4-Dimethylphenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| 2,4-Dinitrophenol              | ND     |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| 2,4-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| 2,6-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| 2-Chloronaphthalene            | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| 2-Chlorophenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| 2-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| 2-Methylphenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| 2-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| 2-Nitrophenol                  | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| 3&4-Methylphenol               | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| 3,3'-Dichlorobenzidine         | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| 3-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| 4,6-Dinitro-2-methylphenol     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| 4-Bromophenyl phenyl ether     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| 4-Chloro-3-methylphenol        | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| 4-Chloroaniline                | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| 4-Chlorophenyl phenyl ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| 4-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| 4-Nitrophenol                  | ND     |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Acenaphthene                   | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Acenaphthylene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Acetophenone                   | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Anthracene                     | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Atrazine                       | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Benz(a)anthracene              | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Benzaldehyde                   | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Benzo(a)pyrene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Benzo(b)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Benzo(g,h,i)perylene           | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Benzo(k)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Bis(2-chloroethoxy)methane     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Bis(2-chloroethyl)ether        | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Bis(2-chloroisopropyl)ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Bis(2-ethylhexyl)phthalate     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Butyl benzyl phthalate         | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Caprolactam                    | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-27  
 Collection Date: 21-Aug-2014 17:25

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-17  
 Matrix:Groundwater

| ANALYSES                                  | RESULT      | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-------------------------------------------|-------------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>            |             | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| Carbazole                                 | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Chrysene                                  | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Dibenz(a,h)anthracene                     | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Dibenzofuran                              | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Diethyl phthalate                         | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Dimethyl phthalate                        | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Di-n-butyl phthalate                      | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| <b>Di-n-octyl phthalate</b>               | <b>0.37</b> |                       | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 27-Aug-2014 18:54 |
| Fluoranthene                              | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Fluorene                                  | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Hexachlorobenzene                         | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Hexachlorobutadiene                       | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Hexachlorocyclopentadiene                 | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Hexachloroethane                          | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Indeno(1,2,3-cd)pyrene                    | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Isophorone                                | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Naphthalene                               | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Nitrobenzene                              | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| N-Nitrosodi-n-propylamine                 | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| N-Nitrosodiphenylamine                    | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Pentachlorophenol                         | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Phenanthrene                              | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Phenol                                    | ND          |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| Pyrene                                    | ND          |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 18:54 |
| <i>Surr: 2,4,6-Tribromophenol</i>         | 78.3        |                       | 34-129          | %REC                      | 1                  | 27-Aug-2014 18:54 |
| <i>Surr: 2-Fluorobiphenyl</i>             | 62.2        |                       | 40-125          | %REC                      | 1                  | 27-Aug-2014 18:54 |
| <i>Surr: 2-Fluorophenol</i>               | 53.8        |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 18:54 |
| <i>Surr: 4-Terphenyl-d14</i>              | 76.7        |                       | 40-135          | %REC                      | 1                  | 27-Aug-2014 18:54 |
| <i>Surr: Nitrobenzene-d5</i>              | 61.3        |                       | 41-120          | %REC                      | 1                  | 27-Aug-2014 18:54 |
| <i>Surr: Phenol-d6</i>                    | 58.7        |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 18:54 |
| <b>ALKALINITY BY SM2320B</b>              |             | <b>Method:SM2320B</b> |                 | Analyst: MYC              |                    |                   |
| <b>Alkalinity, Bicarbonate (As CaCO3)</b> | <b>383</b>  |                       | <b>5.00</b>     | <b>mg/L</b>               | 1                  | 03-Sep-2014 11:20 |
| Alkalinity, Carbonate (As CaCO3)          | ND          |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 11:20 |
| Alkalinity, Hydroxide (As CaCO3)          | ND          |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 11:20 |
| <b>Alkalinity, Total (As CaCO3)</b>       | <b>383</b>  |                       | <b>5.00</b>     | <b>mg/L</b>               | 1                  | 03-Sep-2014 11:20 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-27  
 Collection Date: 21-Aug-2014 17:25

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-17  
 Matrix:Groundwater

| ANALYSES                                     | RESULT  | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |         | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 0.210   |                          | 0.0100          | mg/L                       | 1                  | 04-Sep-2014 18:56 |
| Arsenic                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:56 |
| Barium                                       | 0.126   |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:56 |
| Boron                                        | 0.160   |                          | 0.0200          | mg/L                       | 1                  | 05-Sep-2014 19:22 |
| Cadmium                                      | ND      |                          | 0.00200         | mg/L                       | 1                  | 04-Sep-2014 18:56 |
| Calcium                                      | 162     |                          | 0.500           | mg/L                       | 1                  | 04-Sep-2014 18:56 |
| Chromium                                     | 0.0447  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:56 |
| Cobalt                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:56 |
| Copper                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:56 |
| Iron                                         | 0.278   |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:56 |
| Lead                                         | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:56 |
| Magnesium                                    | 22.6    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:56 |
| Manganese                                    | 0.0636  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:56 |
| Molybdenum                                   | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:56 |
| Nickel                                       | 0.0592  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:56 |
| Potassium                                    | 3.23    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:56 |
| Selenium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:56 |
| Silver                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:56 |
| Sodium                                       | 119     |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:56 |
| Uranium                                      | 0.00648 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:56 |
| Zinc                                         | 0.0182  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:56 |
| <b>MERCURY BY SW7470A</b>                    |         | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 25-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND      |                          | 0.000200        | mg/L                       | 1                  | 25-Aug-2014 15:32 |
| <b>PH BY SM4500H+ B</b>                      |         | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 7.53    | H                        | 0.100           | pH Units                   | 1                  | 03-Sep-2014 11:20 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |         | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 1,640   |                          | 5.00            | umhos/cm                   | 1                  | 03-Sep-2014 11:20 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |         | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 1,100   |                          | 10.0            | mg/L                       | 1                  | 28-Aug-2014 18:00 |
| <b>ANIONS BY E300.0</b>                      |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 256     |                          | 2.50            | mg/L                       | 5                  | 07-Sep-2014 13:21 |
| Fluoride                                     | 0.540   |                          | 0.100           | mg/L                       | 1                  | 07-Sep-2014 13:00 |
| Sulfate                                      | 85.1    |                          | 0.500           | mg/L                       | 1                  | 07-Sep-2014 13:00 |
| <b>NITRATE/NITRITE BY E300.0</b>             |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 4.99    |                          | 1.00            | mg/L                       | 5                  | 07-Sep-2014 23:07 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-8  
 Collection Date: 21-Aug-2014 18:45

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-18  
 Matrix:Groundwater

| ANALYSES                   | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| 1,1,2,2-Tetrachloroethane  | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| 1,1,2-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| 1,1-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| 1,1-Dichloroethene         | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| 1,2,4-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| 1,2-Dibromoethane          | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| 1,2-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| 1,2-Dichloropropane        | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| 1,3,5-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| 2-Butanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 02-Sep-2014 21:30 |
| 2-Hexanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 02-Sep-2014 21:30 |
| 4-Isopropyltoluene         | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| 4-Methyl-2-pentanone       | ND     |                      | 0.010           | mg/L        | 1                  | 02-Sep-2014 21:30 |
| Acetone                    | ND     |                      | 0.010           | mg/L        | 1                  | 02-Sep-2014 21:30 |
| Benzene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| Bromodichloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| Bromoform                  | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| Bromomethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| Carbon disulfide           | ND     |                      | 0.010           | mg/L        | 1                  | 02-Sep-2014 21:30 |
| Carbon tetrachloride       | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| Chlorobenzene              | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| Chloroethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| Chloroform                 | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| Chloromethane              | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| cis-1,2-Dichloroethene     | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| cis-1,3-Dichloropropene    | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| Dibromochloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| Ethylbenzene               | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| Isopropylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| m,p-Xylene                 | ND     |                      | 0.010           | mg/L        | 1                  | 02-Sep-2014 21:30 |
| Methyl tert-butyl ether    | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| Methylene chloride         | ND     |                      | 0.010           | mg/L        | 1                  | 02-Sep-2014 21:30 |
| Naphthalene                | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| n-Butylbenzene             | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| n-Propylbenzene            | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| o-Xylene                   | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| sec-Butylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| Styrene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| Tetrachloroethene          | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| Toluene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| trans-1,2-Dichloroethene   | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-8  
Collection Date: 21-Aug-2014 18:45

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
Lab ID:HS14080845-18  
Matrix:Groundwater

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 02-Sep-2014 21:30 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 02-Sep-2014 21:30 |
| Surr: 1,2-Dichloroethane-d4 | 112    |                      | 70-125          | %REC        | 1                  | 02-Sep-2014 21:30 |
| Surr: 4-Bromofluorobenzene  | 97.5   |                      | 72-125          | %REC        | 1                  | 02-Sep-2014 21:30 |
| Surr: Dibromofluoromethane  | 114    |                      | 71-125          | %REC        | 1                  | 02-Sep-2014 21:30 |
| Surr: Toluene-d8            | 102    |                      | 75-125          | %REC        | 1                  | 02-Sep-2014 21:30 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-8  
 Collection Date: 21-Aug-2014 18:45

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-18  
 Matrix:Groundwater

| ANALYSES                          | RESULT     | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------------|------------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>    |            | <b>Method:SW8270</b> |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                     | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| 1-Methylnaphthalene               | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| 2,4,5-Trichlorophenol             | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| 2,4,6-Trichlorophenol             | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| 2,4-Dichlorophenol                | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| 2,4-Dimethylphenol                | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| 2,4-Dinitrophenol                 | ND         |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| 2,4-Dinitrotoluene                | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| 2,6-Dinitrotoluene                | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| 2-Chloronaphthalene               | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| 2-Chlorophenol                    | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| 2-Methylnaphthalene               | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| 2-Methylphenol                    | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| 2-Nitroaniline                    | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| 2-Nitrophenol                     | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| 3&4-Methylphenol                  | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| 3,3'-Dichlorobenzidine            | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| 3-Nitroaniline                    | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| 4,6-Dinitro-2-methylphenol        | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| 4-Bromophenyl phenyl ether        | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| 4-Chloro-3-methylphenol           | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| 4-Chloroaniline                   | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| 4-Chlorophenyl phenyl ether       | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| 4-Nitroaniline                    | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| 4-Nitrophenol                     | ND         |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Acenaphthene                      | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Acenaphthylene                    | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Acetophenone                      | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Anthracene                        | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Atrazine                          | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Benz(a)anthracene                 | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Benzaldehyde                      | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Benzo(a)pyrene                    | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Benzo(b)fluoranthene              | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Benzo(g,h,i)perylene              | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Benzo(k)fluoranthene              | ND         |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Bis(2-chloroethoxy)methane        | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Bis(2-chloroethyl)ether           | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Bis(2-chloroisopropyl)ether       | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>9.9</b> |                      | <b>0.20</b>     | <b>ug/L</b>               | 1                  | 27-Aug-2014 21:47 |
| Butyl benzyl phthalate            | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Caprolactam                       | ND         |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-8  
 Collection Date: 21-Aug-2014 18:45

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-18  
 Matrix:Groundwater

| ANALYSES                           | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Chrysene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Dibenz(a,h)anthracene              | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Dibenzofuran                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Diethyl phthalate                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Dimethyl phthalate                 | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Di-n-butyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Di-n-octyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Fluoranthene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Fluorene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Hexachlorobenzene                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Hexachlorobutadiene                | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Hexachlorocyclopentadiene          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Hexachloroethane                   | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Indeno(1,2,3-cd)pyrene             | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Isophorone                         | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Naphthalene                        | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Nitrobenzene                       | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| N-Nitrosodi-n-propylamine          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| N-Nitrosodiphenylamine             | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Pentachlorophenol                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Phenanthrene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Phenol                             | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Pyrene                             | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 21:47 |
| Surr: 2,4,6-Tribromophenol         | 80.2   |                       | 34-129          | %REC                      | 1                  | 27-Aug-2014 21:47 |
| Surr: 2-Fluorobiphenyl             | 71.5   |                       | 40-125          | %REC                      | 1                  | 27-Aug-2014 21:47 |
| Surr: 2-Fluorophenol               | 66.6   |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 21:47 |
| Surr: 4-Terphenyl-d14              | 75.8   |                       | 40-135          | %REC                      | 1                  | 27-Aug-2014 21:47 |
| Surr: Nitrobenzene-d5              | 66.6   |                       | 41-120          | %REC                      | 1                  | 27-Aug-2014 21:47 |
| Surr: Phenol-d6                    | 68.0   |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 21:47 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method:SM2320B</b> |                 |                           |                    | Analyst: MYC      |
| Alkalinity, Bicarbonate (As CaCO3) | 476    |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 11:34 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 11:34 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 11:34 |
| Alkalinity, Total (As CaCO3)       | 476    |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 11:34 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-8  
 Collection Date: 21-Aug-2014 18:45

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-18  
 Matrix:Groundwater

| ANALYSES                                     | RESULT  | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |         | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 0.314   |                          | 0.0100          | mg/L                       | 1                  | 04-Sep-2014 18:59 |
| Arsenic                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:59 |
| Barium                                       | 0.212   |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:59 |
| Boron                                        | 0.230   |                          | 0.0200          | mg/L                       | 1                  | 05-Sep-2014 19:25 |
| Cadmium                                      | ND      |                          | 0.00200         | mg/L                       | 1                  | 04-Sep-2014 18:59 |
| Calcium                                      | 168     |                          | 50.0            | mg/L                       | 100                | 05-Sep-2014 19:43 |
| Chromium                                     | 0.0404  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:59 |
| Cobalt                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:59 |
| Copper                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:59 |
| Iron                                         | 0.274   |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:59 |
| Lead                                         | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:59 |
| Magnesium                                    | 23.6    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:59 |
| Manganese                                    | 0.0128  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:59 |
| Molybdenum                                   | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:59 |
| Nickel                                       | 0.0258  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:59 |
| Potassium                                    | 5.18    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 18:59 |
| Selenium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:59 |
| Silver                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:59 |
| Sodium                                       | 171     |                          | 20.0            | mg/L                       | 100                | 05-Sep-2014 19:43 |
| Uranium                                      | 0.00639 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:59 |
| Zinc                                         | 0.0181  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 18:59 |
| <b>MERCURY BY SW7470A</b>                    |         | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 25-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND      |                          | 0.000200        | mg/L                       | 1                  | 25-Aug-2014 15:38 |
| <b>PH BY SM4500H+ B</b>                      |         | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 7.38    | H                        | 0.100           | pH Units                   | 1                  | 03-Sep-2014 11:34 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |         | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 2,130   |                          | 5.00            | umhos/cm                   | 1                  | 03-Sep-2014 11:34 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |         | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 1,310   |                          | 10.0            | mg/L                       | 1                  | 28-Aug-2014 18:00 |
| <b>ANIONS BY E300.0</b>                      |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 360     |                          | 2.50            | mg/L                       | 5                  | 07-Sep-2014 14:48 |
| Fluoride                                     | 0.268   |                          | 0.100           | mg/L                       | 1                  | 07-Sep-2014 13:43 |
| Sulfate                                      | 76.6    |                          | 0.500           | mg/L                       | 1                  | 07-Sep-2014 13:43 |
| <b>NITRATE/NITRITE BY E300.0</b>             |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 4.42    |                          | 1.00            | mg/L                       | 5                  | 07-Sep-2014 23:29 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: WW-SOUTH  
 Collection Date: 22-Aug-2014 09:00

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-19  
 Matrix:Groundwater

| ANALYSES                   | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| 1,1,2,2-Tetrachloroethane  | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| 1,1,2-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| 1,1-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| 1,1-Dichloroethene         | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| 1,2,4-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| 1,2-Dibromoethane          | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| 1,2-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| 1,2-Dichloropropane        | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| 1,3,5-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| 2-Butanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 03-Sep-2014 13:14 |
| 2-Hexanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 03-Sep-2014 13:14 |
| 4-Isopropyltoluene         | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| 4-Methyl-2-pentanone       | ND     |                      | 0.010           | mg/L        | 1                  | 03-Sep-2014 13:14 |
| Acetone                    | ND     |                      | 0.010           | mg/L        | 1                  | 03-Sep-2014 13:14 |
| Benzene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| Bromodichloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| Bromoform                  | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| Bromomethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| Carbon disulfide           | ND     |                      | 0.010           | mg/L        | 1                  | 03-Sep-2014 13:14 |
| Carbon tetrachloride       | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| Chlorobenzene              | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| Chloroethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| Chloroform                 | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| Chloromethane              | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| cis-1,2-Dichloroethene     | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| cis-1,3-Dichloropropene    | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| Dibromochloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| Ethylbenzene               | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| Isopropylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| m,p-Xylene                 | ND     |                      | 0.010           | mg/L        | 1                  | 03-Sep-2014 13:14 |
| Methyl tert-butyl ether    | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| Methylene chloride         | ND     |                      | 0.010           | mg/L        | 1                  | 03-Sep-2014 13:14 |
| Naphthalene                | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| n-Butylbenzene             | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| n-Propylbenzene            | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| o-Xylene                   | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| sec-Butylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| Styrene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| Tetrachloroethene          | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| Toluene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| trans-1,2-Dichloroethene   | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: WW-SOUTH  
Collection Date: 22-Aug-2014 09:00

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
Lab ID:HS14080845-19  
Matrix:Groundwater

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 03-Sep-2014 13:14 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 03-Sep-2014 13:14 |
| Surr: 1,2-Dichloroethane-d4 | 101    |                      | 70-125          | %REC        | 1                  | 03-Sep-2014 13:14 |
| Surr: 4-Bromofluorobenzene  | 96.3   |                      | 72-125          | %REC        | 1                  | 03-Sep-2014 13:14 |
| Surr: Dibromofluoromethane  | 100.0  |                      | 71-125          | %REC        | 1                  | 03-Sep-2014 13:14 |
| Surr: Toluene-d8            | 95.2   |                      | 75-125          | %REC        | 1                  | 03-Sep-2014 13:14 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: WW-SOUTH  
 Collection Date: 22-Aug-2014 09:00

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-19  
 Matrix:Groundwater

| ANALYSES                       | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|--------------------------------|--------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b> |        | <b>Method:SW8270</b> |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                  | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| 1-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| 2,4,5-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| 2,4,6-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| 2,4-Dichlorophenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| 2,4-Dimethylphenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| 2,4-Dinitrophenol              | ND     |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| 2,4-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| 2,6-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| 2-Chloronaphthalene            | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| 2-Chlorophenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| 2-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| 2-Methylphenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| 2-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| 2-Nitrophenol                  | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| 3&4-Methylphenol               | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| 3,3'-Dichlorobenzidine         | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| 3-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| 4,6-Dinitro-2-methylphenol     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| 4-Bromophenyl phenyl ether     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| 4-Chloro-3-methylphenol        | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| 4-Chloroaniline                | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| 4-Chlorophenyl phenyl ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| 4-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| 4-Nitrophenol                  | ND     |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Acenaphthene                   | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Acenaphthylene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Acetophenone                   | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Anthracene                     | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Atrazine                       | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Benz(a)anthracene              | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Benzaldehyde                   | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Benzo(a)pyrene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Benzo(b)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Benzo(g,h,i)perylene           | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Benzo(k)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Bis(2-chloroethoxy)methane     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Bis(2-chloroethyl)ether        | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Bis(2-chloroisopropyl)ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Bis(2-ethylhexyl)phthalate     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Butyl benzyl phthalate         | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Caprolactam                    | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: WW-SOUTH  
 Collection Date: 22-Aug-2014 09:00

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-19  
 Matrix:Groundwater

| ANALYSES                           | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Chrysene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Dibenz(a,h)anthracene              | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Dibenzofuran                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Diethyl phthalate                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Dimethyl phthalate                 | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Di-n-butyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Di-n-octyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Fluoranthene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Fluorene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Hexachlorobenzene                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Hexachlorobutadiene                | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Hexachlorocyclopentadiene          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Hexachloroethane                   | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Indeno(1,2,3-cd)pyrene             | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Isophorone                         | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Naphthalene                        | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Nitrobenzene                       | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| N-Nitrosodi-n-propylamine          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| N-Nitrosodiphenylamine             | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Pentachlorophenol                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Phenanthrene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Phenol                             | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Pyrene                             | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:32 |
| Surr: 2,4,6-Tribromophenol         | 76.1   |                       | 34-129          | %REC                      | 1                  | 27-Aug-2014 19:32 |
| Surr: 2-Fluorobiphenyl             | 70.8   |                       | 40-125          | %REC                      | 1                  | 27-Aug-2014 19:32 |
| Surr: 2-Fluorophenol               | 62.7   |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 19:32 |
| Surr: 4-Terphenyl-d14              | 79.6   |                       | 40-135          | %REC                      | 1                  | 27-Aug-2014 19:32 |
| Surr: Nitrobenzene-d5              | 66.8   |                       | 41-120          | %REC                      | 1                  | 27-Aug-2014 19:32 |
| Surr: Phenol-d6                    | 65.2   |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 19:32 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method:SM2320B</b> |                 |                           |                    | Analyst: MYC      |
| Alkalinity, Bicarbonate (As CaCO3) | 195    |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 11:40 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 11:40 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 11:40 |
| Alkalinity, Total (As CaCO3)       | 195    |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 11:40 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: WW-SOUTH  
 Collection Date: 22-Aug-2014 09:00

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-19  
 Matrix:Groundwater

| ANALYSES                                     | RESULT         | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|----------------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |                | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 26-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | ND             |                          | 0.0100          | mg/L                       | 1                  | 04-Sep-2014 19:02 |
| Arsenic                                      | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 19:02 |
| <b>Barium</b>                                | <b>0.136</b>   |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 19:02 |
| <b>Boron</b>                                 | <b>0.144</b>   |                          | <b>0.0200</b>   | <b>mg/L</b>                | 1                  | 05-Sep-2014 19:27 |
| Cadmium                                      | ND             |                          | 0.00200         | mg/L                       | 1                  | 04-Sep-2014 19:02 |
| <b>Calcium</b>                               | <b>171</b>     |                          | <b>0.500</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 19:02 |
| Chromium                                     | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 19:02 |
| Cobalt                                       | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 19:02 |
| Copper                                       | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 19:02 |
| Iron                                         | ND             |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 19:02 |
| Lead                                         | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 19:02 |
| <b>Magnesium</b>                             | <b>23.5</b>    |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 19:02 |
| <b>Manganese</b>                             | <b>0.00670</b> |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 19:02 |
| Molybdenum                                   | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 19:02 |
| Nickel                                       | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 19:02 |
| <b>Potassium</b>                             | <b>3.30</b>    |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 19:02 |
| Selenium                                     | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 19:02 |
| Silver                                       | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 19:02 |
| <b>Sodium</b>                                | <b>147</b>     |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 19:02 |
| Uranium                                      | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 19:02 |
| <b>Zinc</b>                                  | <b>0.0159</b>  |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 19:02 |
| <b>MERCURY BY SW7470A</b>                    |                | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 25-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND             |                          | 0.000200        | mg/L                       | 1                  | 25-Aug-2014 15:39 |
| <b>PH BY SM4500H+ B</b>                      |                | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| <b>pH</b>                                    | <b>7.77</b>    | <b>H</b>                 | <b>0.100</b>    | <b>pH Units</b>            | 1                  | 03-Sep-2014 11:40 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |                | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 1,930          |                          | 5.00            | umhos/cm                   | 1                  | 03-Sep-2014 11:40 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |                | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 1,480          |                          | 10.0            | mg/L                       | 1                  | 29-Aug-2014 15:30 |
| <b>ANIONS BY E300.0</b>                      |                | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 435            |                          | 5.00            | mg/L                       | 10                 | 07-Sep-2014 15:31 |
| Fluoride                                     | 0.720          |                          | 0.100           | mg/L                       | 1                  | 07-Sep-2014 15:10 |
| Sulfate                                      | 100            |                          | 5.00            | mg/L                       | 10                 | 07-Sep-2014 15:31 |
| <b>NITRATE/NITRITE BY E300.0</b>             |                | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 3.00           |                          | 1.00            | mg/L                       | 5                  | 07-Sep-2014 23:50 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: DUP-4  
 Collection Date: 22-Aug-2014 00:00

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-20  
 Matrix:Groundwater

| ANALYSES                   | RESULT               | QUAL | REPORT<br>LIMIT | UNITS | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|----------------------|------|-----------------|-------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> | <b>Method:SW8260</b> |      |                 |       |                    | Analyst: PC       |
| 1,1,1-Trichloroethane      | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| 1,1,2,2-Tetrachloroethane  | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| 1,1,2-Trichloroethane      | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| 1,1-Dichloroethane         | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| 1,1-Dichloroethene         | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| 1,2,4-Trimethylbenzene     | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| 1,2-Dibromoethane          | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| 1,2-Dichloroethane         | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| 1,2-Dichloropropane        | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| 1,3,5-Trimethylbenzene     | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| 2-Butanone                 | ND                   |      | 0.010           | mg/L  | 1                  | 03-Sep-2014 12:46 |
| 2-Hexanone                 | ND                   |      | 0.010           | mg/L  | 1                  | 03-Sep-2014 12:46 |
| 4-Isopropyltoluene         | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| 4-Methyl-2-pentanone       | ND                   |      | 0.010           | mg/L  | 1                  | 03-Sep-2014 12:46 |
| Acetone                    | ND                   |      | 0.010           | mg/L  | 1                  | 03-Sep-2014 12:46 |
| Benzene                    | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| Bromodichloromethane       | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| Bromoform                  | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| Bromomethane               | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| Carbon disulfide           | ND                   |      | 0.010           | mg/L  | 1                  | 03-Sep-2014 12:46 |
| Carbon tetrachloride       | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| Chlorobenzene              | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| Chloroethane               | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| Chloroform                 | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| Chloromethane              | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| cis-1,2-Dichloroethene     | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| cis-1,3-Dichloropropene    | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| Dibromochloromethane       | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| Ethylbenzene               | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| Isopropylbenzene           | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| m,p-Xylene                 | ND                   |      | 0.010           | mg/L  | 1                  | 03-Sep-2014 12:46 |
| Methyl tert-butyl ether    | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| Methylene chloride         | ND                   |      | 0.010           | mg/L  | 1                  | 03-Sep-2014 12:46 |
| Naphthalene                | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| n-Butylbenzene             | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| n-Propylbenzene            | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| o-Xylene                   | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| sec-Butylbenzene           | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| Styrene                    | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| Tetrachloroethene          | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| Toluene                    | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |
| trans-1,2-Dichloroethene   | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 12:46 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: DUP-4  
Collection Date: 22-Aug-2014 00:00

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
Lab ID:HS14080845-20  
Matrix:Groundwater

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:46 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:46 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 03-Sep-2014 12:46 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 03-Sep-2014 12:46 |
| Surr: 1,2-Dichloroethane-d4 | 99.8   |                      | 70-125          | %REC        | 1                  | 03-Sep-2014 12:46 |
| Surr: 4-Bromofluorobenzene  | 87.9   |                      | 72-125          | %REC        | 1                  | 03-Sep-2014 12:46 |
| Surr: Dibromofluoromethane  | 99.8   |                      | 71-125          | %REC        | 1                  | 03-Sep-2014 12:46 |
| Surr: Toluene-d8            | 98.9   |                      | 75-125          | %REC        | 1                  | 03-Sep-2014 12:46 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: DUP-4  
 Collection Date: 22-Aug-2014 00:00

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-20  
 Matrix:Groundwater

| ANALYSES                       | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|--------------------------------|--------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b> |        | <b>Method:SW8270</b> |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                  | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| 1-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| 2,4,5-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| 2,4,6-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| 2,4-Dichlorophenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| 2,4-Dimethylphenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| 2,4-Dinitrophenol              | ND     |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| 2,4-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| 2,6-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| 2-Chloronaphthalene            | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| 2-Chlorophenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| 2-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| 2-Methylphenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| 2-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| 2-Nitrophenol                  | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| 3&4-Methylphenol               | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| 3,3'-Dichlorobenzidine         | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| 3-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| 4,6-Dinitro-2-methylphenol     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| 4-Bromophenyl phenyl ether     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| 4-Chloro-3-methylphenol        | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| 4-Chloroaniline                | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| 4-Chlorophenyl phenyl ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| 4-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| 4-Nitrophenol                  | ND     |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Acenaphthene                   | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Acenaphthylene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Acetophenone                   | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Anthracene                     | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Atrazine                       | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Benz(a)anthracene              | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Benzaldehyde                   | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Benzo(a)pyrene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Benzo(b)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Benzo(g,h,i)perylene           | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Benzo(k)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Bis(2-chloroethoxy)methane     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Bis(2-chloroethyl)ether        | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Bis(2-chloroisopropyl)ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Bis(2-ethylhexyl)phthalate     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Butyl benzyl phthalate         | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Caprolactam                    | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: DUP-4  
 Collection Date: 22-Aug-2014 00:00

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-20  
 Matrix:Groundwater

| ANALYSES                           | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Chrysene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Dibenz(a,h)anthracene              | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Dibenzofuran                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Diethyl phthalate                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Dimethyl phthalate                 | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Di-n-butyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Di-n-octyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Fluoranthene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Fluorene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Hexachlorobenzene                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Hexachlorobutadiene                | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Hexachlorocyclopentadiene          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Hexachloroethane                   | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Indeno(1,2,3-cd)pyrene             | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Isophorone                         | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Naphthalene                        | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Nitrobenzene                       | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| N-Nitrosodi-n-propylamine          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| N-Nitrosodiphenylamine             | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Pentachlorophenol                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Phenanthrene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Phenol                             | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Pyrene                             | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 19:51 |
| Surr: 2,4,6-Tribromophenol         | 63.4   |                       | 34-129          | %REC                      | 1                  | 27-Aug-2014 19:51 |
| Surr: 2-Fluorobiphenyl             | 56.0   |                       | 40-125          | %REC                      | 1                  | 27-Aug-2014 19:51 |
| Surr: 2-Fluorophenol               | 53.4   |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 19:51 |
| Surr: 4-Terphenyl-d14              | 66.6   |                       | 40-135          | %REC                      | 1                  | 27-Aug-2014 19:51 |
| Surr: Nitrobenzene-d5              | 54.8   |                       | 41-120          | %REC                      | 1                  | 27-Aug-2014 19:51 |
| Surr: Phenol-d6                    | 54.5   |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 19:51 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method:SM2320B</b> |                 | Analyst: MYC              |                    |                   |
| Alkalinity, Bicarbonate (As CaCO3) | 195    |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 11:46 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 11:46 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 11:46 |
| Alkalinity, Total (As CaCO3)       | 195    |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 11:46 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: DUP-4  
 Collection Date: 22-Aug-2014 00:00

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-20  
 Matrix:Groundwater

| ANALYSES                                     | RESULT        | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |               | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 27-Aug-2014 |                    | Analyst: RPM      |
| <b>Aluminum</b>                              | <b>0.0689</b> |                          | <b>0.0100</b>   | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:05 |
| Arsenic                                      | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:05 |
| <b>Barium</b>                                | <b>0.145</b>  |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:05 |
| Boron                                        | ND            |                          | 0.0200          | mg/L                       | 1                  | 04-Sep-2014 22:05 |
| Cadmium                                      | ND            |                          | 0.00200         | mg/L                       | 1                  | 04-Sep-2014 22:05 |
| <b>Calcium</b>                               | <b>175</b>    |                          | <b>0.500</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:05 |
| Chromium                                     | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:05 |
| Cobalt                                       | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:05 |
| Copper                                       | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:05 |
| Iron                                         | ND            |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 22:05 |
| Lead                                         | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:05 |
| <b>Magnesium</b>                             | <b>21.7</b>   |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:05 |
| <b>Manganese</b>                             | <b>0.0103</b> |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:05 |
| Molybdenum                                   | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:05 |
| Nickel                                       | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:05 |
| <b>Potassium</b>                             | <b>3.29</b>   |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:05 |
| Selenium                                     | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:05 |
| Silver                                       | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:05 |
| <b>Sodium</b>                                | <b>142</b>    |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:05 |
| Uranium                                      | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:05 |
| <b>Zinc</b>                                  | <b>0.0214</b> |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:05 |
| <b>MERCURY BY SW7470A</b>                    |               | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 25-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND            |                          | 0.000200        | mg/L                       | 1                  | 25-Aug-2014 15:41 |
| <b>PH BY SM4500H+ B</b>                      |               | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| <b>pH</b>                                    | <b>7.76</b>   | <b>H</b>                 | <b>0.100</b>    | <b>pH Units</b>            | 1                  | 03-Sep-2014 11:46 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |               | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 1,930         |                          | 5.00            | umhos/cm                   | 1                  | 03-Sep-2014 11:46 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |               | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 1,480         |                          | 10.0            | mg/L                       | 1                  | 29-Aug-2014 15:30 |
| <b>ANIONS BY E300.0</b>                      |               | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 437           |                          | 2.50            | mg/L                       | 5                  | 08-Sep-2014 14:08 |
| Fluoride                                     | 0.724         |                          | 0.100           | mg/L                       | 1                  | 07-Sep-2014 15:53 |
| Sulfate                                      | 107           |                          | 1.00            | mg/L                       | 2                  | 08-Sep-2014 13:16 |
| <b>NITRATE/NITRITE BY E300.0</b>             |               | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 3.00          |                          | 1.00            | mg/L                       | 5                  | 08-Sep-2014 00:12 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: WW-EAST  
 Collection Date: 22-Aug-2014 10:20

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-21  
 Matrix:Groundwater

| ANALYSES                   | RESULT               | QUAL | REPORT<br>LIMIT | UNITS | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|----------------------|------|-----------------|-------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> | <b>Method:SW8260</b> |      |                 |       |                    | Analyst: PC       |
| 1,1,1-Trichloroethane      | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| 1,1,2,2-Tetrachloroethane  | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| 1,1,2-Trichloroethane      | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| 1,1-Dichloroethane         | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| 1,1-Dichloroethene         | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| 1,2,4-Trimethylbenzene     | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| 1,2-Dibromoethane          | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| 1,2-Dichloroethane         | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| 1,2-Dichloropropane        | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| 1,3,5-Trimethylbenzene     | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| 2-Butanone                 | ND                   |      | 0.010           | mg/L  | 1                  | 28-Aug-2014 19:48 |
| 2-Hexanone                 | ND                   |      | 0.010           | mg/L  | 1                  | 28-Aug-2014 19:48 |
| 4-Isopropyltoluene         | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| 4-Methyl-2-pentanone       | ND                   |      | 0.010           | mg/L  | 1                  | 28-Aug-2014 19:48 |
| Acetone                    | ND                   |      | 0.010           | mg/L  | 1                  | 28-Aug-2014 19:48 |
| Benzene                    | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| Bromodichloromethane       | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| Bromoform                  | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| Bromomethane               | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| Carbon disulfide           | ND                   |      | 0.010           | mg/L  | 1                  | 28-Aug-2014 19:48 |
| Carbon tetrachloride       | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| Chlorobenzene              | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| Chloroethane               | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| Chloroform                 | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| Chloromethane              | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| cis-1,2-Dichloroethene     | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| cis-1,3-Dichloropropene    | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| Dibromochloromethane       | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| Ethylbenzene               | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| Isopropylbenzene           | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| m,p-Xylene                 | ND                   |      | 0.010           | mg/L  | 1                  | 28-Aug-2014 19:48 |
| Methyl tert-butyl ether    | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| Methylene chloride         | ND                   |      | 0.010           | mg/L  | 1                  | 28-Aug-2014 19:48 |
| Naphthalene                | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| n-Butylbenzene             | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| n-Propylbenzene            | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| o-Xylene                   | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| sec-Butylbenzene           | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| Styrene                    | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| Tetrachloroethene          | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| Toluene                    | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |
| trans-1,2-Dichloroethene   | ND                   |      | 0.0050          | mg/L  | 1                  | 28-Aug-2014 19:48 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: WW-EAST  
Collection Date: 22-Aug-2014 10:20

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
Lab ID:HS14080845-21  
Matrix:Groundwater

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 19:48 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 28-Aug-2014 19:48 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 28-Aug-2014 19:48 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 28-Aug-2014 19:48 |
| Surr: 1,2-Dichloroethane-d4 | 101    |                      | 70-125          | %REC        | 1                  | 28-Aug-2014 19:48 |
| Surr: 4-Bromofluorobenzene  | 97.9   |                      | 72-125          | %REC        | 1                  | 28-Aug-2014 19:48 |
| Surr: Dibromofluoromethane  | 103    |                      | 71-125          | %REC        | 1                  | 28-Aug-2014 19:48 |
| Surr: Toluene-d8            | 105    |                      | 75-125          | %REC        | 1                  | 28-Aug-2014 19:48 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: WW-EAST  
 Collection Date: 22-Aug-2014 10:20

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-21  
 Matrix:Groundwater

| ANALYSES                       | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|--------------------------------|--------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b> |        | <b>Method:SW8270</b> |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                  | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| 1-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| 2,4,5-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| 2,4,6-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| 2,4-Dichlorophenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| 2,4-Dimethylphenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| 2,4-Dinitrophenol              | ND     |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| 2,4-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| 2,6-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| 2-Chloronaphthalene            | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| 2-Chlorophenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| 2-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| 2-Methylphenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| 2-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| 2-Nitrophenol                  | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| 3&4-Methylphenol               | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| 3,3'-Dichlorobenzidine         | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| 3-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| 4,6-Dinitro-2-methylphenol     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| 4-Bromophenyl phenyl ether     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| 4-Chloro-3-methylphenol        | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| 4-Chloroaniline                | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| 4-Chlorophenyl phenyl ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| 4-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| 4-Nitrophenol                  | ND     |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Acenaphthene                   | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Acenaphthylene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Acetophenone                   | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Anthracene                     | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Atrazine                       | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Benz(a)anthracene              | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Benzaldehyde                   | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Benzo(a)pyrene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Benzo(b)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Benzo(g,h,i)perylene           | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Benzo(k)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Bis(2-chloroethoxy)methane     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Bis(2-chloroethyl)ether        | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Bis(2-chloroisopropyl)ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Bis(2-ethylhexyl)phthalate     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Butyl benzyl phthalate         | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Caprolactam                    | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: WW-EAST  
 Collection Date: 22-Aug-2014 10:20

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-21  
 Matrix:Groundwater

| ANALYSES                           | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Chrysene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Dibenz(a,h)anthracene              | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Dibenzofuran                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Diethyl phthalate                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Dimethyl phthalate                 | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Di-n-butyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Di-n-octyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Fluoranthene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Fluorene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Hexachlorobenzene                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Hexachlorobutadiene                | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Hexachlorocyclopentadiene          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Hexachloroethane                   | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Indeno(1,2,3-cd)pyrene             | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Isophorone                         | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Naphthalene                        | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Nitrobenzene                       | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| N-Nitrosodi-n-propylamine          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| N-Nitrosodiphenylamine             | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Pentachlorophenol                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Phenanthrene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Phenol                             | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Pyrene                             | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 14:18 |
| Surr: 2,4,6-Tribromophenol         | 66.9   |                       | 34-129          | %REC                      | 1                  | 27-Aug-2014 14:18 |
| Surr: 2-Fluorobiphenyl             | 59.3   |                       | 40-125          | %REC                      | 1                  | 27-Aug-2014 14:18 |
| Surr: 2-Fluorophenol               | 54.7   |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 14:18 |
| Surr: 4-Terphenyl-d14              | 74.8   |                       | 40-135          | %REC                      | 1                  | 27-Aug-2014 14:18 |
| Surr: Nitrobenzene-d5              | 57.6   |                       | 41-120          | %REC                      | 1                  | 27-Aug-2014 14:18 |
| Surr: Phenol-d6                    | 56.6   |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 14:18 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method:SM2320B</b> |                 |                           |                    | Analyst: MYC      |
| Alkalinity, Bicarbonate (As CaCO3) | 178    |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 11:56 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 11:56 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 11:56 |
| Alkalinity, Total (As CaCO3)       | 178    |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 11:56 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: WW-EAST  
 Collection Date: 22-Aug-2014 10:20

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-21  
 Matrix:Groundwater

| ANALYSES                                     | RESULT         | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|----------------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |                | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 27-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | ND             |                          | 0.0100          | mg/L                       | 1                  | 04-Sep-2014 22:07 |
| Arsenic                                      | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:07 |
| <b>Barium</b>                                | <b>0.103</b>   |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:07 |
| Boron                                        | ND             |                          | 0.0200          | mg/L                       | 1                  | 04-Sep-2014 22:07 |
| Cadmium                                      | ND             |                          | 0.00200         | mg/L                       | 1                  | 04-Sep-2014 22:07 |
| <b>Calcium</b>                               | <b>99.8</b>    |                          | <b>0.500</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:07 |
| <b>Chromium</b>                              | <b>0.0119</b>  |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:07 |
| Cobalt                                       | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:07 |
| Copper                                       | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:07 |
| Iron                                         | ND             |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 22:07 |
| Lead                                         | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:07 |
| <b>Magnesium</b>                             | <b>13.5</b>    |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:07 |
| <b>Manganese</b>                             | <b>0.00812</b> |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:07 |
| Molybdenum                                   | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:07 |
| Nickel                                       | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:07 |
| <b>Potassium</b>                             | <b>1.94</b>    |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:07 |
| Selenium                                     | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:07 |
| Silver                                       | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:07 |
| <b>Sodium</b>                                | <b>44.7</b>    |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:07 |
| Uranium                                      | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:07 |
| <b>Zinc</b>                                  | <b>0.0156</b>  |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:07 |
| <b>MERCURY BY SW7470A</b>                    |                | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 25-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND             |                          | 0.000200        | mg/L                       | 1                  | 25-Aug-2014 15:00 |
| <b>PH BY SM4500H+ B</b>                      |                | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| <b>pH</b>                                    | <b>7.88</b>    | <b>H</b>                 | <b>0.100</b>    | <b>pH Units</b>            | 1                  | 03-Sep-2014 11:56 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |                | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 879            |                          | 5.00            | umhos/cm                   | 1                  | 03-Sep-2014 11:56 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |                | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 614            |                          | 10.0            | mg/L                       | 1                  | 29-Aug-2014 15:30 |
| <b>ANIONS BY E300.0</b>                      |                | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 124            |                          | 1.00            | mg/L                       | 2                  | 06-Sep-2014 22:32 |
| Fluoride                                     | 0.914          |                          | 0.200           | mg/L                       | 2                  | 06-Sep-2014 22:32 |
| Sulfate                                      | 78.5           |                          | 1.00            | mg/L                       | 2                  | 06-Sep-2014 22:32 |
| <b>NITRATE/NITRITE BY E300.0</b>             |                | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 2.71           |                          | 1.00            | mg/L                       | 5                  | 08-Sep-2014 00:34 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: WW-NORTH  
 Collection Date: 22-Aug-2014 11:20

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-22  
 Matrix:Groundwater

| ANALYSES                   | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| 1,1,2,2-Tetrachloroethane  | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| 1,1,2-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| 1,1-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| 1,1-Dichloroethene         | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| 1,2,4-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| 1,2-Dibromoethane          | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| 1,2-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| 1,2-Dichloropropane        | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| 1,3,5-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| 2-Butanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 03-Sep-2014 13:42 |
| 2-Hexanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 03-Sep-2014 13:42 |
| 4-Isopropyltoluene         | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| 4-Methyl-2-pentanone       | ND     |                      | 0.010           | mg/L        | 1                  | 03-Sep-2014 13:42 |
| Acetone                    | ND     |                      | 0.010           | mg/L        | 1                  | 03-Sep-2014 13:42 |
| Benzene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| Bromodichloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| Bromoform                  | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| Bromomethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| Carbon disulfide           | ND     |                      | 0.010           | mg/L        | 1                  | 03-Sep-2014 13:42 |
| Carbon tetrachloride       | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| Chlorobenzene              | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| Chloroethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| Chloroform                 | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| Chloromethane              | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| cis-1,2-Dichloroethene     | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| cis-1,3-Dichloropropene    | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| Dibromochloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| Ethylbenzene               | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| Isopropylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| m,p-Xylene                 | ND     |                      | 0.010           | mg/L        | 1                  | 03-Sep-2014 13:42 |
| Methyl tert-butyl ether    | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| Methylene chloride         | ND     |                      | 0.010           | mg/L        | 1                  | 03-Sep-2014 13:42 |
| Naphthalene                | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| n-Butylbenzene             | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| n-Propylbenzene            | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| o-Xylene                   | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| sec-Butylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| Styrene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| Tetrachloroethene          | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| Toluene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| trans-1,2-Dichloroethene   | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: WW-NORTH  
Collection Date: 22-Aug-2014 11:20

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
Lab ID:HS14080845-22  
Matrix:Groundwater

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 03-Sep-2014 13:42 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 03-Sep-2014 13:42 |
| Surr: 1,2-Dichloroethane-d4 | 96.0   |                      | 70-125          | %REC        | 1                  | 03-Sep-2014 13:42 |
| Surr: 4-Bromofluorobenzene  | 98.9   |                      | 72-125          | %REC        | 1                  | 03-Sep-2014 13:42 |
| Surr: Dibromofluoromethane  | 101    |                      | 71-125          | %REC        | 1                  | 03-Sep-2014 13:42 |
| Surr: Toluene-d8            | 102    |                      | 75-125          | %REC        | 1                  | 03-Sep-2014 13:42 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: WW-NORTH  
 Collection Date: 22-Aug-2014 11:20

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-22  
 Matrix:Groundwater

| ANALYSES                       | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|--------------------------------|--------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b> |        | <b>Method:SW8270</b> |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                  | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| 1-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| 2,4,5-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| 2,4,6-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| 2,4-Dichlorophenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| 2,4-Dimethylphenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| 2,4-Dinitrophenol              | ND     |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| 2,4-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| 2,6-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| 2-Chloronaphthalene            | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| 2-Chlorophenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| 2-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| 2-Methylphenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| 2-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| 2-Nitrophenol                  | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| 3&4-Methylphenol               | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| 3,3'-Dichlorobenzidine         | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| 3-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| 4,6-Dinitro-2-methylphenol     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| 4-Bromophenyl phenyl ether     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| 4-Chloro-3-methylphenol        | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| 4-Chloroaniline                | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| 4-Chlorophenyl phenyl ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| 4-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| 4-Nitrophenol                  | ND     |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Acenaphthene                   | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Acenaphthylene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Acetophenone                   | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Anthracene                     | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Atrazine                       | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Benz(a)anthracene              | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Benzaldehyde                   | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Benzo(a)pyrene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Benzo(b)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Benzo(g,h,i)perylene           | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Benzo(k)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Bis(2-chloroethoxy)methane     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Bis(2-chloroethyl)ether        | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Bis(2-chloroisopropyl)ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Bis(2-ethylhexyl)phthalate     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Butyl benzyl phthalate         | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Caprolactam                    | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: WW-NORTH  
 Collection Date: 22-Aug-2014 11:20

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-22  
 Matrix:Groundwater

| ANALYSES                           | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Chrysene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Dibenz(a,h)anthracene              | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Dibenzofuran                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Diethyl phthalate                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Dimethyl phthalate                 | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Di-n-butyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Di-n-octyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Fluoranthene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Fluorene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Hexachlorobenzene                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Hexachlorobutadiene                | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Hexachlorocyclopentadiene          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Hexachloroethane                   | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Indeno(1,2,3-cd)pyrene             | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Isophorone                         | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Naphthalene                        | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Nitrobenzene                       | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| N-Nitrosodi-n-propylamine          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| N-Nitrosodiphenylamine             | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Pentachlorophenol                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Phenanthrene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Phenol                             | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Pyrene                             | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:25 |
| Surr: 2,4,6-Tribromophenol         | 65.2   |                       | 34-129          | %REC                      | 1                  | 27-Aug-2014 22:25 |
| Surr: 2-Fluorobiphenyl             | 61.9   |                       | 40-125          | %REC                      | 1                  | 27-Aug-2014 22:25 |
| Surr: 2-Fluorophenol               | 55.0   |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 22:25 |
| Surr: 4-Terphenyl-d14              | 73.6   |                       | 40-135          | %REC                      | 1                  | 27-Aug-2014 22:25 |
| Surr: Nitrobenzene-d5              | 60.7   |                       | 41-120          | %REC                      | 1                  | 27-Aug-2014 22:25 |
| Surr: Phenol-d6                    | 61.6   |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 22:25 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method:SM2320B</b> |                 |                           |                    | Analyst: MYC      |
| Alkalinity, Bicarbonate (As CaCO3) | 189    |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 12:07 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 12:07 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 12:07 |
| Alkalinity, Total (As CaCO3)       | 189    |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 12:07 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: WW-NORTH  
 Collection Date: 22-Aug-2014 11:20

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-22  
 Matrix:Groundwater

| ANALYSES                                     | RESULT  | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |         | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 27-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 0.0170  |                          | 0.0100          | mg/L                       | 1                  | 04-Sep-2014 22:23 |
| Arsenic                                      | 0.00530 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:23 |
| Barium                                       | 0.106   |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:23 |
| Boron                                        | ND      |                          | 0.0200          | mg/L                       | 1                  | 04-Sep-2014 22:23 |
| Cadmium                                      | ND      |                          | 0.00200         | mg/L                       | 1                  | 04-Sep-2014 22:23 |
| Calcium                                      | 88.5    |                          | 0.500           | mg/L                       | 1                  | 04-Sep-2014 22:23 |
| Chromium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:23 |
| Cobalt                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:23 |
| Copper                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:23 |
| Iron                                         | ND      |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 22:23 |
| Lead                                         | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:23 |
| Magnesium                                    | 10.1    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 22:23 |
| Manganese                                    | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:23 |
| Molybdenum                                   | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:23 |
| Nickel                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:23 |
| Potassium                                    | 2.14    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 22:23 |
| Selenium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:23 |
| Silver                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:23 |
| Sodium                                       | 59.1    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 22:23 |
| Uranium                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:23 |
| Zinc                                         | 0.0119  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:23 |
| <b>MERCURY BY SW7470A</b>                    |         | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 25-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND      |                          | 0.000200        | mg/L                       | 1                  | 25-Aug-2014 15:43 |
| <b>PH BY SM4500H+ B</b>                      |         | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 7.89    | H                        | 0.100           | pH Units                   | 1                  | 03-Sep-2014 12:07 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |         | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 869     |                          | 5.00            | umhos/cm                   | 1                  | 03-Sep-2014 12:07 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |         | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 532     |                          | 10.0            | mg/L                       | 1                  | 29-Aug-2014 15:30 |
| <b>ANIONS BY E300.0</b>                      |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 57.3    |                          | 1.00            | mg/L                       | 2                  | 06-Sep-2014 23:37 |
| Fluoride                                     | 0.462   |                          | 0.200           | mg/L                       | 2                  | 06-Sep-2014 23:37 |
| Sulfate                                      | 37.6    |                          | 1.00            | mg/L                       | 2                  | 06-Sep-2014 23:37 |
| <b>NITRATE/NITRITE BY E300.0</b>             |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 2.73    |                          | 1.00            | mg/L                       | 5                  | 08-Sep-2014 02:22 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-30  
 Collection Date: 22-Aug-2014 08:15

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-23  
 Matrix:Groundwater

| ANALYSES                   | RESULT               | QUAL | REPORT<br>LIMIT | UNITS | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|----------------------|------|-----------------|-------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> | <b>Method:SW8260</b> |      |                 |       |                    | Analyst: PC       |
| 1,1,1-Trichloroethane      | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| 1,1,2,2-Tetrachloroethane  | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| 1,1,2-Trichloroethane      | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| 1,1-Dichloroethane         | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| 1,1-Dichloroethene         | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| 1,2,4-Trimethylbenzene     | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| 1,2-Dibromoethane          | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| 1,2-Dichloroethane         | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| 1,2-Dichloropropane        | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| 1,3,5-Trimethylbenzene     | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| 2-Butanone                 | ND                   |      | 0.010           | mg/L  | 1                  | 03-Sep-2014 14:11 |
| 2-Hexanone                 | ND                   |      | 0.010           | mg/L  | 1                  | 03-Sep-2014 14:11 |
| 4-Isopropyltoluene         | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| 4-Methyl-2-pentanone       | ND                   |      | 0.010           | mg/L  | 1                  | 03-Sep-2014 14:11 |
| Acetone                    | ND                   |      | 0.010           | mg/L  | 1                  | 03-Sep-2014 14:11 |
| Benzene                    | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| Bromodichloromethane       | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| Bromoform                  | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| Bromomethane               | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| Carbon disulfide           | ND                   |      | 0.010           | mg/L  | 1                  | 03-Sep-2014 14:11 |
| Carbon tetrachloride       | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| Chlorobenzene              | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| Chloroethane               | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| Chloroform                 | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| Chloromethane              | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| cis-1,2-Dichloroethene     | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| cis-1,3-Dichloropropene    | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| Dibromochloromethane       | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| Ethylbenzene               | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| Isopropylbenzene           | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| m,p-Xylene                 | ND                   |      | 0.010           | mg/L  | 1                  | 03-Sep-2014 14:11 |
| Methyl tert-butyl ether    | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| Methylene chloride         | ND                   |      | 0.010           | mg/L  | 1                  | 03-Sep-2014 14:11 |
| Naphthalene                | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| n-Butylbenzene             | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| n-Propylbenzene            | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| o-Xylene                   | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| sec-Butylbenzene           | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| Styrene                    | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| Tetrachloroethene          | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| Toluene                    | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |
| trans-1,2-Dichloroethene   | ND                   |      | 0.0050          | mg/L  | 1                  | 03-Sep-2014 14:11 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-30  
Collection Date: 22-Aug-2014 08:15

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
Lab ID:HS14080845-23  
Matrix:Groundwater

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:11 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:11 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 03-Sep-2014 14:11 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 03-Sep-2014 14:11 |
| Surr: 1,2-Dichloroethane-d4 | 99.2   |                      | 70-125          | %REC        | 1                  | 03-Sep-2014 14:11 |
| Surr: 4-Bromofluorobenzene  | 97.7   |                      | 72-125          | %REC        | 1                  | 03-Sep-2014 14:11 |
| Surr: Dibromofluoromethane  | 102    |                      | 71-125          | %REC        | 1                  | 03-Sep-2014 14:11 |
| Surr: Toluene-d8            | 95.5   |                      | 75-125          | %REC        | 1                  | 03-Sep-2014 14:11 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-30  
 Collection Date: 22-Aug-2014 08:15

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-23  
 Matrix:Groundwater

| ANALYSES                       | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|--------------------------------|--------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b> |        | <b>Method:SW8270</b> |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                  | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| 1-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| 2,4,5-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| 2,4,6-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| 2,4-Dichlorophenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| 2,4-Dimethylphenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| 2,4-Dinitrophenol              | ND     |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| 2,4-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| 2,6-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| 2-Chloronaphthalene            | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| 2-Chlorophenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| 2-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| 2-Methylphenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| 2-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| 2-Nitrophenol                  | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| 3&4-Methylphenol               | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| 3,3'-Dichlorobenzidine         | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| 3-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| 4,6-Dinitro-2-methylphenol     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| 4-Bromophenyl phenyl ether     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| 4-Chloro-3-methylphenol        | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| 4-Chloroaniline                | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| 4-Chlorophenyl phenyl ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| 4-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| 4-Nitrophenol                  | ND     |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Acenaphthene                   | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Acenaphthylene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Acetophenone                   | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Anthracene                     | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Atrazine                       | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Benz(a)anthracene              | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Benzaldehyde                   | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Benzo(a)pyrene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Benzo(b)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Benzo(g,h,i)perylene           | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Benzo(k)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Bis(2-chloroethoxy)methane     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Bis(2-chloroethyl)ether        | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Bis(2-chloroisopropyl)ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Bis(2-ethylhexyl)phthalate     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Butyl benzyl phthalate         | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Caprolactam                    | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-30  
 Collection Date: 22-Aug-2014 08:15

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-23  
 Matrix:Groundwater

| ANALYSES                           | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Chrysene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Dibenz(a,h)anthracene              | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Dibenzofuran                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Diethyl phthalate                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Dimethyl phthalate                 | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Di-n-butyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Di-n-octyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Fluoranthene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Fluorene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Hexachlorobenzene                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Hexachlorobutadiene                | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Hexachlorocyclopentadiene          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Hexachloroethane                   | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Indeno(1,2,3-cd)pyrene             | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Isophorone                         | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Naphthalene                        | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Nitrobenzene                       | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| N-Nitrosodi-n-propylamine          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| N-Nitrosodiphenylamine             | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Pentachlorophenol                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Phenanthrene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Phenol                             | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Pyrene                             | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 22:44 |
| Surr: 2,4,6-Tribromophenol         | 67.6   |                       | 34-129          | %REC                      | 1                  | 27-Aug-2014 22:44 |
| Surr: 2-Fluorobiphenyl             | 59.4   |                       | 40-125          | %REC                      | 1                  | 27-Aug-2014 22:44 |
| Surr: 2-Fluorophenol               | 52.4   |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 22:44 |
| Surr: 4-Terphenyl-d14              | 70.5   |                       | 40-135          | %REC                      | 1                  | 27-Aug-2014 22:44 |
| Surr: Nitrobenzene-d5              | 56.0   |                       | 41-120          | %REC                      | 1                  | 27-Aug-2014 22:44 |
| Surr: Phenol-d6                    | 54.7   |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 22:44 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method:SM2320B</b> |                 | Analyst: MYC              |                    |                   |
| Alkalinity, Bicarbonate (As CaCO3) | 190    |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 12:13 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 12:13 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 12:13 |
| Alkalinity, Total (As CaCO3)       | 190    |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 12:13 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-30  
 Collection Date: 22-Aug-2014 08:15

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-23  
 Matrix:Groundwater

| ANALYSES                                     | RESULT  | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |         | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 27-Aug-2014 |                    | Analyst: RPM      |
| Aluminum                                     | 0.132   |                          | 0.0100          | mg/L                       | 1                  | 04-Sep-2014 22:26 |
| Arsenic                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:26 |
| Barium                                       | 0.0736  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:26 |
| Boron                                        | ND      |                          | 0.0200          | mg/L                       | 1                  | 04-Sep-2014 22:26 |
| Cadmium                                      | ND      |                          | 0.00200         | mg/L                       | 1                  | 04-Sep-2014 22:26 |
| Calcium                                      | 81.3    |                          | 0.500           | mg/L                       | 1                  | 04-Sep-2014 22:26 |
| Chromium                                     | 0.0137  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:26 |
| Cobalt                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:26 |
| Copper                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:26 |
| Iron                                         | ND      |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 22:26 |
| Lead                                         | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:26 |
| Magnesium                                    | 10.9    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 22:26 |
| Manganese                                    | 0.148   |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:26 |
| Molybdenum                                   | 0.00597 |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:26 |
| Nickel                                       | 0.0485  |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:26 |
| Potassium                                    | 1.95    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 22:26 |
| Selenium                                     | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:26 |
| Silver                                       | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:26 |
| Sodium                                       | 33.6    |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 22:26 |
| Uranium                                      | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:26 |
| Zinc                                         | ND      |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:26 |
| <b>MERCURY BY SW7470A</b>                    |         | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 25-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND      |                          | 0.000200        | mg/L                       | 1                  | 25-Aug-2014 15:44 |
| <b>PH BY SM4500H+ B</b>                      |         | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| pH                                           | 7.92    | H                        | 0.100           | pH Units                   | 1                  | 03-Sep-2014 12:13 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |         | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 695     |                          | 5.00            | umhos/cm                   | 1                  | 03-Sep-2014 12:13 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |         | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 444     |                          | 10.0            | mg/L                       | 1                  | 29-Aug-2014 15:30 |
| <b>ANIONS BY E300.0</b>                      |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 61.1    |                          | 0.500           | mg/L                       | 1                  | 06-Sep-2014 23:58 |
| Fluoride                                     | 1.45    |                          | 0.100           | mg/L                       | 1                  | 06-Sep-2014 23:58 |
| Sulfate                                      | 84.5    |                          | 0.500           | mg/L                       | 1                  | 06-Sep-2014 23:58 |
| <b>NITRATE/NITRITE BY E300.0</b>             |         | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 2.75    |                          | 1.00            | mg/L                       | 5                  | 08-Sep-2014 02:44 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-17R  
 Collection Date: 22-Aug-2014 10:05

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-24  
 Matrix:Groundwater

| ANALYSES                   | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| 1,1,2,2-Tetrachloroethane  | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| 1,1,2-Trichloroethane      | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| 1,1-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| 1,1-Dichloroethene         | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| 1,2,4-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| 1,2-Dibromoethane          | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| 1,2-Dichloroethane         | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| 1,2-Dichloropropane        | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| 1,3,5-Trimethylbenzene     | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| 2-Butanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 03-Sep-2014 14:39 |
| 2-Hexanone                 | ND     |                      | 0.010           | mg/L        | 1                  | 03-Sep-2014 14:39 |
| 4-Isopropyltoluene         | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| 4-Methyl-2-pentanone       | ND     |                      | 0.010           | mg/L        | 1                  | 03-Sep-2014 14:39 |
| Acetone                    | ND     |                      | 0.010           | mg/L        | 1                  | 03-Sep-2014 14:39 |
| Benzene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| Bromodichloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| Bromoform                  | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| Bromomethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| Carbon disulfide           | ND     |                      | 0.010           | mg/L        | 1                  | 03-Sep-2014 14:39 |
| Carbon tetrachloride       | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| Chlorobenzene              | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| Chloroethane               | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| Chloroform                 | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| Chloromethane              | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| cis-1,2-Dichloroethene     | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| cis-1,3-Dichloropropene    | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| Dibromochloromethane       | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| Ethylbenzene               | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| Isopropylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| m,p-Xylene                 | ND     |                      | 0.010           | mg/L        | 1                  | 03-Sep-2014 14:39 |
| Methyl tert-butyl ether    | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| Methylene chloride         | ND     |                      | 0.010           | mg/L        | 1                  | 03-Sep-2014 14:39 |
| Naphthalene                | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| n-Butylbenzene             | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| n-Propylbenzene            | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| o-Xylene                   | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| sec-Butylbenzene           | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| Styrene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| Tetrachloroethene          | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| Toluene                    | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| trans-1,2-Dichloroethene   | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: MW-17R  
Collection Date: 22-Aug-2014 10:05

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
Lab ID:HS14080845-24  
Matrix:Groundwater

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 03-Sep-2014 14:39 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 03-Sep-2014 14:39 |
| Surr: 1,2-Dichloroethane-d4 | 100    |                      | 70-125          | %REC        | 1                  | 03-Sep-2014 14:39 |
| Surr: 4-Bromofluorobenzene  | 96.9   |                      | 72-125          | %REC        | 1                  | 03-Sep-2014 14:39 |
| Surr: Dibromofluoromethane  | 99.2   |                      | 71-125          | %REC        | 1                  | 03-Sep-2014 14:39 |
| Surr: Toluene-d8            | 103    |                      | 75-125          | %REC        | 1                  | 03-Sep-2014 14:39 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-17R  
 Collection Date: 22-Aug-2014 10:05

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-24  
 Matrix:Groundwater

| ANALYSES                       | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|--------------------------------|--------|----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b> |        | <b>Method:SW8270</b> |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                  | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| 1-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| 2,4,5-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| 2,4,6-Trichlorophenol          | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| 2,4-Dichlorophenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| 2,4-Dimethylphenol             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| 2,4-Dinitrophenol              | ND     |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| 2,4-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| 2,6-Dinitrotoluene             | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| 2-Chloronaphthalene            | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| 2-Chlorophenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| 2-Methylnaphthalene            | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| 2-Methylphenol                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| 2-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| 2-Nitrophenol                  | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| 3&4-Methylphenol               | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| 3,3'-Dichlorobenzidine         | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| 3-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| 4,6-Dinitro-2-methylphenol     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| 4-Bromophenyl phenyl ether     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| 4-Chloro-3-methylphenol        | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| 4-Chloroaniline                | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| 4-Chlorophenyl phenyl ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| 4-Nitroaniline                 | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| 4-Nitrophenol                  | ND     |                      | 1.0             | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Acenaphthene                   | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Acenaphthylene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Acetophenone                   | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Anthracene                     | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Atrazine                       | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Benz(a)anthracene              | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Benzaldehyde                   | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Benzo(a)pyrene                 | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Benzo(b)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Benzo(g,h,i)perylene           | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Benzo(k)fluoranthene           | ND     |                      | 0.10            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Bis(2-chloroethoxy)methane     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Bis(2-chloroethyl)ether        | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Bis(2-chloroisopropyl)ether    | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Bis(2-ethylhexyl)phthalate     | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Butyl benzyl phthalate         | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Caprolactam                    | ND     |                      | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-17R  
 Collection Date: 22-Aug-2014 10:05

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-24  
 Matrix:Groundwater

| ANALYSES                           | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS                     | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|-----------------------|-----------------|---------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method:SW8270</b>  |                 | Prep:SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Chrysene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Dibenz(a,h)anthracene              | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Dibenzofuran                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Diethyl phthalate                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Dimethyl phthalate                 | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Di-n-butyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Di-n-octyl phthalate               | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Fluoranthene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Fluorene                           | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Hexachlorobenzene                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Hexachlorobutadiene                | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Hexachlorocyclopentadiene          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Hexachloroethane                   | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Indeno(1,2,3-cd)pyrene             | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Isophorone                         | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Naphthalene                        | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Nitrobenzene                       | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| N-Nitrosodi-n-propylamine          | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| N-Nitrosodiphenylamine             | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Pentachlorophenol                  | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Phenanthrene                       | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Phenol                             | ND     |                       | 0.20            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Pyrene                             | ND     |                       | 0.10            | ug/L                      | 1                  | 27-Aug-2014 20:49 |
| Surr: 2,4,6-Tribromophenol         | 61.8   |                       | 34-129          | %REC                      | 1                  | 27-Aug-2014 20:49 |
| Surr: 2-Fluorobiphenyl             | 44.8   |                       | 40-125          | %REC                      | 1                  | 27-Aug-2014 20:49 |
| Surr: 2-Fluorophenol               | 40.5   |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 20:49 |
| Surr: 4-Terphenyl-d14              | 67.5   |                       | 40-135          | %REC                      | 1                  | 27-Aug-2014 20:49 |
| Surr: Nitrobenzene-d5              | 44.1   |                       | 41-120          | %REC                      | 1                  | 27-Aug-2014 20:49 |
| Surr: Phenol-d6                    | 45.0   |                       | 20-120          | %REC                      | 1                  | 27-Aug-2014 20:49 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method:SM2320B</b> |                 |                           |                    | Analyst: MYC      |
| Alkalinity, Bicarbonate (As CaCO3) | 247    |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 12:19 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 12:19 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 12:19 |
| Alkalinity, Total (As CaCO3)       | 247    |                       | 5.00            | mg/L                      | 1                  | 03-Sep-2014 12:19 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: MW-17R  
 Collection Date: 22-Aug-2014 10:05

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-24  
 Matrix:Groundwater

| ANALYSES                                     | RESULT        | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|---------------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |               | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 27-Aug-2014 |                    | Analyst: RPM      |
| <b>Aluminum</b>                              | <b>0.0459</b> |                          | <b>0.0100</b>   | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:33 |
| Arsenic                                      | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:33 |
| <b>Barium</b>                                | <b>0.153</b>  |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:33 |
| <b>Boron</b>                                 | <b>0.120</b>  |                          | <b>0.0200</b>   | <b>mg/L</b>                | 1                  | 05-Sep-2014 19:30 |
| Cadmium                                      | ND            |                          | 0.00200         | mg/L                       | 1                  | 04-Sep-2014 22:33 |
| <b>Calcium</b>                               | <b>135</b>    |                          | <b>0.500</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:33 |
| Chromium                                     | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:33 |
| Cobalt                                       | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:33 |
| Copper                                       | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:33 |
| Iron                                         | ND            |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 22:33 |
| Lead                                         | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:33 |
| <b>Magnesium</b>                             | <b>14.8</b>   |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:33 |
| <b>Manganese</b>                             | <b>0.0989</b> |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:33 |
| Molybdenum                                   | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:33 |
| <b>Nickel</b>                                | <b>0.0378</b> |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:33 |
| <b>Potassium</b>                             | <b>2.15</b>   |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:33 |
| Selenium                                     | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:33 |
| Silver                                       | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:33 |
| <b>Sodium</b>                                | <b>41.3</b>   |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:33 |
| Uranium                                      | ND            |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:33 |
| <b>Zinc</b>                                  | <b>0.0243</b> |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:33 |
| <b>MERCURY BY SW7470A</b>                    |               | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 28-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND            |                          | 0.000200        | mg/L                       | 1                  | 28-Aug-2014 16:14 |
| <b>PH BY SM4500H+ B</b>                      |               | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| <b>pH</b>                                    | <b>7.76</b>   | <b>H</b>                 | <b>0.100</b>    | <b>pH Units</b>            | 1                  | 03-Sep-2014 12:19 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |               | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | 1,140         |                          | 5.00            | umhos/cm                   | 1                  | 03-Sep-2014 12:19 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |               | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | 860           |                          | 10.0            | mg/L                       | 1                  | 29-Aug-2014 15:30 |
| <b>ANIONS BY E300.0</b>                      |               | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | 170           |                          | 5.00            | mg/L                       | 10                 | 08-Sep-2014 13:38 |
| Fluoride                                     | 0.602         |                          | 0.100           | mg/L                       | 1                  | 07-Sep-2014 00:20 |
| Sulfate                                      | 94.8          |                          | 0.500           | mg/L                       | 1                  | 07-Sep-2014 00:20 |
| <b>NITRATE/NITRITE BY E300.0</b>             |               | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | 2.70          |                          | 1.00            | mg/L                       | 5                  | 08-Sep-2014 03:06 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: EB-8-22-14-A  
 Collection Date: 22-Aug-2014 11:30

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-25  
 Matrix:Groundwater

| ANALYSES                   | RESULT               | QUAL | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|----------------------|------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> | <b>Method:SW8260</b> |      |                 |             |                    | Analyst: PC       |
| 1,1,1-Trichloroethane      | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| 1,1,2,2-Tetrachloroethane  | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| 1,1,2-Trichloroethane      | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| 1,1-Dichloroethane         | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| 1,1-Dichloroethene         | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| 1,2,4-Trimethylbenzene     | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| 1,2-Dibromoethane          | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| 1,2-Dichloroethane         | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| 1,2-Dichloropropane        | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| 1,3,5-Trimethylbenzene     | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| 2-Butanone                 | ND                   |      | 0.010           | mg/L        | 1                  | 03-Sep-2014 12:18 |
| 2-Hexanone                 | ND                   |      | 0.010           | mg/L        | 1                  | 03-Sep-2014 12:18 |
| 4-Isopropyltoluene         | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| 4-Methyl-2-pentanone       | ND                   |      | 0.010           | mg/L        | 1                  | 03-Sep-2014 12:18 |
| Acetone                    | ND                   |      | 0.010           | mg/L        | 1                  | 03-Sep-2014 12:18 |
| Benzene                    | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| Bromodichloromethane       | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| Bromoform                  | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| Bromomethane               | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| <b>Carbon disulfide</b>    | <b>0.024</b>         |      | <b>0.010</b>    | <b>mg/L</b> | 1                  | 03-Sep-2014 12:18 |
| Carbon tetrachloride       | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| Chlorobenzene              | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| Chloroethane               | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| Chloroform                 | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| Chloromethane              | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| cis-1,2-Dichloroethene     | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| cis-1,3-Dichloropropene    | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| Dibromochloromethane       | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| Ethylbenzene               | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| Isopropylbenzene           | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| m,p-Xylene                 | ND                   |      | 0.010           | mg/L        | 1                  | 03-Sep-2014 12:18 |
| Methyl tert-butyl ether    | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| Methylene chloride         | ND                   |      | 0.010           | mg/L        | 1                  | 03-Sep-2014 12:18 |
| Naphthalene                | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| n-Butylbenzene             | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| n-Propylbenzene            | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| o-Xylene                   | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| sec-Butylbenzene           | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| Styrene                    | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| Tetrachloroethene          | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| Toluene                    | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| trans-1,2-Dichloroethene   | ND                   |      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: EB-8-22-14-A  
Collection Date: 22-Aug-2014 11:30

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
Lab ID:HS14080845-25  
Matrix:Groundwater

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 03-Sep-2014 12:18 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 03-Sep-2014 12:18 |
| Surr: 1,2-Dichloroethane-d4 | 103    |                      | 70-125          | %REC        | 1                  | 03-Sep-2014 12:18 |
| Surr: 4-Bromofluorobenzene  | 99.5   |                      | 72-125          | %REC        | 1                  | 03-Sep-2014 12:18 |
| Surr: Dibromofluoromethane  | 100    |                      | 71-125          | %REC        | 1                  | 03-Sep-2014 12:18 |
| Surr: Toluene-d8            | 101    |                      | 75-125          | %REC        | 1                  | 03-Sep-2014 12:18 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: EB-8-22-14-A  
 Collection Date: 22-Aug-2014 11:30

**ANALYTICAL REPORT**

WorkOrder: HS14080845  
 Lab ID: HS14080845-25  
 Matrix: Groundwater

| ANALYSES                          | RESULT     | QUAL                  | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------------|------------|-----------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>    |            | <b>Method: SW8270</b> |                 | Prep: SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| 1,1'-Biphenyl                     | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| 1-Methylnaphthalene               | ND         |                       | 0.10            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| 2,4,5-Trichlorophenol             | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| 2,4,6-Trichlorophenol             | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| 2,4-Dichlorophenol                | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| 2,4-Dimethylphenol                | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| 2,4-Dinitrophenol                 | ND         |                       | 1.0             | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| 2,4-Dinitrotoluene                | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| 2,6-Dinitrotoluene                | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| 2-Chloronaphthalene               | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| 2-Chlorophenol                    | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| 2-Methylnaphthalene               | ND         |                       | 0.10            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| 2-Methylphenol                    | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| 2-Nitroaniline                    | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| 2-Nitrophenol                     | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| 3&4-Methylphenol                  | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| 3,3'-Dichlorobenzidine            | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| 3-Nitroaniline                    | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| 4,6-Dinitro-2-methylphenol        | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| 4-Bromophenyl phenyl ether        | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| 4-Chloro-3-methylphenol           | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| 4-Chloroaniline                   | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| 4-Chlorophenyl phenyl ether       | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| 4-Nitroaniline                    | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| 4-Nitrophenol                     | ND         |                       | 1.0             | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Acenaphthene                      | ND         |                       | 0.10            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Acenaphthylene                    | ND         |                       | 0.10            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Acetophenone                      | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Anthracene                        | ND         |                       | 0.10            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Atrazine                          | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Benz(a)anthracene                 | ND         |                       | 0.10            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| <b>Benzaldehyde</b>               | <b>2.0</b> |                       | <b>0.20</b>     | <b>ug/L</b>                | 1                  | 28-Aug-2014 17:09 |
| Benzo(a)pyrene                    | ND         |                       | 0.10            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Benzo(b)fluoranthene              | ND         |                       | 0.10            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Benzo(g,h,i)perylene              | ND         |                       | 0.10            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Benzo(k)fluoranthene              | ND         |                       | 0.10            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Bis(2-chloroethoxy)methane        | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Bis(2-chloroethyl)ether           | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Bis(2-chloroisopropyl)ether       | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| <b>Bis(2-ethylhexyl)phthalate</b> | <b>1.6</b> |                       | <b>0.20</b>     | <b>ug/L</b>                | 1                  | 28-Aug-2014 17:09 |
| Butyl benzyl phthalate            | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Caprolactam                       | ND         |                       | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: EB-8-22-14-A  
 Collection Date: 22-Aug-2014 11:30

**ANALYTICAL REPORT**

WorkOrder: HS14080845  
 Lab ID: HS14080845-25  
 Matrix: Groundwater

| ANALYSES                           | RESULT | QUAL                   | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|------------------------------------|--------|------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>LOW-LEVEL SEMIVOLATILES</b>     |        | <b>Method: SW8270</b>  |                 | Prep: SW3510 / 26-Aug-2014 |                    | Analyst: LG       |
| Carbazole                          | ND     |                        | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Chrysene                           | ND     |                        | 0.10            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Dibenz(a,h)anthracene              | ND     |                        | 0.10            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Dibenzofuran                       | ND     |                        | 0.10            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Diethyl phthalate                  | ND     |                        | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Dimethyl phthalate                 | ND     |                        | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Di-n-butyl phthalate               | ND     |                        | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Di-n-octyl phthalate               | ND     |                        | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Fluoranthene                       | ND     |                        | 0.10            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Fluorene                           | ND     |                        | 0.10            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Hexachlorobenzene                  | ND     |                        | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Hexachlorobutadiene                | ND     |                        | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Hexachlorocyclopentadiene          | ND     |                        | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Hexachloroethane                   | ND     |                        | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Indeno(1,2,3-cd)pyrene             | ND     |                        | 0.10            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Isophorone                         | ND     |                        | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Naphthalene                        | ND     |                        | 0.10            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Nitrobenzene                       | ND     |                        | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| N-Nitrosodi-n-propylamine          | ND     |                        | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| N-Nitrosodiphenylamine             | ND     |                        | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Pentachlorophenol                  | ND     |                        | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Phenanthrene                       | ND     |                        | 0.10            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Phenol                             | ND     |                        | 0.20            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Pyrene                             | ND     |                        | 0.10            | ug/L                       | 1                  | 28-Aug-2014 17:09 |
| Surr: 2,4,6-Tribromophenol         | 59.7   |                        | 34-129          | %REC                       | 1                  | 28-Aug-2014 17:09 |
| Surr: 2-Fluorobiphenyl             | 52.8   |                        | 40-125          | %REC                       | 1                  | 28-Aug-2014 17:09 |
| Surr: 2-Fluorophenol               | 48.2   |                        | 20-120          | %REC                       | 1                  | 28-Aug-2014 17:09 |
| Surr: 4-Terphenyl-d14              | 73.9   |                        | 40-135          | %REC                       | 1                  | 28-Aug-2014 17:09 |
| Surr: Nitrobenzene-d5              | 53.9   |                        | 41-120          | %REC                       | 1                  | 28-Aug-2014 17:09 |
| Surr: Phenol-d6                    | 58.2   |                        | 20-120          | %REC                       | 1                  | 28-Aug-2014 17:09 |
| <b>ALKALINITY BY SM2320B</b>       |        | <b>Method: SM2320B</b> |                 |                            |                    | Analyst: MYC      |
| Alkalinity, Bicarbonate (As CaCO3) | ND     |                        | 5.00            | mg/L                       | 1                  | 03-Sep-2014 12:32 |
| Alkalinity, Carbonate (As CaCO3)   | ND     |                        | 5.00            | mg/L                       | 1                  | 03-Sep-2014 12:32 |
| Alkalinity, Hydroxide (As CaCO3)   | ND     |                        | 5.00            | mg/L                       | 1                  | 03-Sep-2014 12:32 |
| Alkalinity, Total (As CaCO3)       | ND     |                        | 5.00            | mg/L                       | 1                  | 03-Sep-2014 12:32 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: EB-8-22-14-A  
 Collection Date: 22-Aug-2014 11:30

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
 Lab ID:HS14080845-25  
 Matrix:Groundwater

| ANALYSES                                     | RESULT         | QUAL                     | REPORT<br>LIMIT | UNITS                      | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------------------------|----------------|--------------------------|-----------------|----------------------------|--------------------|-------------------|
| <b>DISSOLVED METALS BY SW6020A</b>           |                | <b>Method:SW6020</b>     |                 | Prep:SW3010A / 27-Aug-2014 |                    | Analyst: RPM      |
| <b>Aluminum</b>                              | <b>0.0836</b>  |                          | <b>0.0100</b>   | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:36 |
| Arsenic                                      | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:36 |
| <b>Barium</b>                                | <b>0.0122</b>  |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:36 |
| Boron                                        | ND             |                          | 0.0200          | mg/L                       | 1                  | 05-Sep-2014 19:33 |
| Cadmium                                      | ND             |                          | 0.00200         | mg/L                       | 1                  | 04-Sep-2014 22:36 |
| <b>Calcium</b>                               | <b>1.70</b>    |                          | <b>0.500</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:36 |
| <b>Chromium</b>                              | <b>0.00723</b> |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:36 |
| Cobalt                                       | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:36 |
| Copper                                       | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:36 |
| Iron                                         | ND             |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 22:36 |
| Lead                                         | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:36 |
| <b>Magnesium</b>                             | <b>0.210</b>   |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:36 |
| Manganese                                    | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:36 |
| Molybdenum                                   | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:36 |
| Nickel                                       | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:36 |
| Potassium                                    | ND             |                          | 0.200           | mg/L                       | 1                  | 04-Sep-2014 22:36 |
| Selenium                                     | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:36 |
| Silver                                       | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:36 |
| <b>Sodium</b>                                | <b>0.829</b>   |                          | <b>0.200</b>    | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:36 |
| Uranium                                      | ND             |                          | 0.00500         | mg/L                       | 1                  | 04-Sep-2014 22:36 |
| <b>Zinc</b>                                  | <b>0.0112</b>  |                          | <b>0.00500</b>  | <b>mg/L</b>                | 1                  | 04-Sep-2014 22:36 |
| <b>MERCURY BY SW7470A</b>                    |                | <b>Method:SW7470</b>     |                 | Prep:SW7470 / 28-Aug-2014  |                    | Analyst: OFO      |
| Mercury                                      | ND             |                          | 0.000200        | mg/L                       | 1                  | 28-Aug-2014 16:15 |
| <b>PH BY SM4500H+ B</b>                      |                | <b>Method:SM4500H+ B</b> |                 |                            |                    | Analyst: MYC      |
| <b>pH</b>                                    | <b>5.87</b>    | <b>H</b>                 | <b>0.100</b>    | <b>pH Units</b>            | 1                  | 03-Sep-2014 12:32 |
| <b>SPECIFIC CONDUCTIVITY BY SM2510 B</b>     |                | <b>Method:M2510 B</b>    |                 |                            |                    | Analyst: MYC      |
| Specific Conductivity                        | ND             |                          | 5.00            | umhos/cm                   | 1                  | 03-Sep-2014 12:32 |
| <b>TOTAL DISSOLVED SOLIDS BY SM2540C</b>     |                | <b>Method:M2540C</b>     |                 |                            |                    | Analyst: KMU      |
| Total Dissolved Solids (Residue, Filterable) | ND             |                          | 10.0            | mg/L                       | 1                  | 29-Aug-2014 15:30 |
| <b>ANIONS BY E300.0</b>                      |                | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Chloride                                     | ND             |                          | 0.500           | mg/L                       | 1                  | 07-Sep-2014 00:42 |
| Fluoride                                     | ND             |                          | 0.100           | mg/L                       | 1                  | 07-Sep-2014 00:42 |
| Sulfate                                      | ND             |                          | 0.500           | mg/L                       | 1                  | 07-Sep-2014 00:42 |
| <b>NITRATE/NITRITE BY E300.0</b>             |                | <b>Method:E300</b>       |                 |                            |                    | Analyst: KKB      |
| Nitrate/Nitrite (as N)                       | ND             |                          | 1.00            | mg/L                       | 5                  | 08-Sep-2014 03:27 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 Project: Lovington Lea Refining - SA  
 Sample ID: TB-08-22-14-A  
 Collection Date: 22-Aug-2014 00:00

**ANALYTICAL REPORT**

WorkOrder: HS14080845  
 Lab ID: HS14080845-26  
 Matrix: Water

| ANALYSES                   | RESULT | QUAL                  | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|----------------------------|--------|-----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b> |        | <b>Method: SW8260</b> |                 | Analyst: PC |                    |                   |
| 1,1,1-Trichloroethane      | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| 1,1,2,2-Tetrachloroethane  | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| 1,1,2-Trichloroethane      | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| 1,1-Dichloroethane         | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| 1,1-Dichloroethene         | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| 1,2,4-Trimethylbenzene     | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| 1,2-Dibromoethane          | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| 1,2-Dichloroethane         | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| 1,2-Dichloropropane        | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| 1,3,5-Trimethylbenzene     | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| 2-Butanone                 | ND     |                       | 0.010           | mg/L        | 1                  | 29-Aug-2014 13:56 |
| 2-Hexanone                 | ND     |                       | 0.010           | mg/L        | 1                  | 29-Aug-2014 13:56 |
| 4-Isopropyltoluene         | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| 4-Methyl-2-pentanone       | ND     |                       | 0.010           | mg/L        | 1                  | 29-Aug-2014 13:56 |
| Acetone                    | ND     |                       | 0.010           | mg/L        | 1                  | 29-Aug-2014 13:56 |
| Benzene                    | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| Bromodichloromethane       | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| Bromoform                  | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| Bromomethane               | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| Carbon disulfide           | ND     |                       | 0.010           | mg/L        | 1                  | 29-Aug-2014 13:56 |
| Carbon tetrachloride       | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| Chlorobenzene              | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| Chloroethane               | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| Chloroform                 | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| Chloromethane              | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| cis-1,2-Dichloroethene     | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| cis-1,3-Dichloropropene    | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| Dibromochloromethane       | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| Ethylbenzene               | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| Isopropylbenzene           | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| m,p-Xylene                 | ND     |                       | 0.010           | mg/L        | 1                  | 29-Aug-2014 13:56 |
| Methyl tert-butyl ether    | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| Methylene chloride         | ND     |                       | 0.010           | mg/L        | 1                  | 29-Aug-2014 13:56 |
| Naphthalene                | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| n-Butylbenzene             | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| n-Propylbenzene            | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| o-Xylene                   | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| sec-Butylbenzene           | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| Styrene                    | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| Tetrachloroethene          | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| Toluene                    | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| trans-1,2-Dichloroethene   | ND     |                       | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
Project: Lovington Lea Refining - SA  
Sample ID: TB-08-22-14-A  
Collection Date: 22-Aug-2014 00:00

**ANALYTICAL REPORT**

WorkOrder:HS14080845  
Lab ID:HS14080845-26  
Matrix:Water

| ANALYSES                    | RESULT | QUAL                 | REPORT<br>LIMIT | UNITS       | DILUTION<br>FACTOR | DATE<br>ANALYZED  |
|-----------------------------|--------|----------------------|-----------------|-------------|--------------------|-------------------|
| <b>VOLATILES - SW8260C</b>  |        | <b>Method:SW8260</b> |                 | Analyst: PC |                    |                   |
| trans-1,3-Dichloropropene   | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| Trichloroethene             | ND     |                      | 0.0050          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| Vinyl chloride              | ND     |                      | 0.0020          | mg/L        | 1                  | 29-Aug-2014 13:56 |
| Xylenes, Total              | ND     |                      | 0.015           | mg/L        | 1                  | 29-Aug-2014 13:56 |
| Surr: 1,2-Dichloroethane-d4 | 98.8   |                      | 70-125          | %REC        | 1                  | 29-Aug-2014 13:56 |
| Surr: 4-Bromofluorobenzene  | 96.4   |                      | 72-125          | %REC        | 1                  | 29-Aug-2014 13:56 |
| Surr: Dibromofluoromethane  | 97.9   |                      | 71-125          | %REC        | 1                  | 29-Aug-2014 13:56 |
| Surr: Toluene-d8            | 105    |                      | 75-125          | %REC        | 1                  | 29-Aug-2014 13:56 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining - SA  
**WorkOrder:** HS14080845

**DATES REPORT**

| Sample ID             | Client Samp ID                             | Collection Date   | TCLP Date | Prep Date                  | Analysis Date     | DF |
|-----------------------|--------------------------------------------|-------------------|-----------|----------------------------|-------------------|----|
| <b>Batch ID</b> 85453 | <b>Test Name :</b> MERCURY BY SW7470A      |                   |           | <b>Matrix:</b> Groundwater |                   |    |
| HS14080845-01         | MW-29                                      | 20 Aug 2014 19:00 |           | 25 Aug 2014 10:59          | 25 Aug 2014 15:07 | 1  |
| HS14080845-02         | MW-4                                       | 20 Aug 2014 19:15 |           | 25 Aug 2014 10:59          | 25 Aug 2014 15:09 | 1  |
| HS14080845-03         | MW-23                                      | 21 Aug 2014 08:35 |           | 25 Aug 2014 10:59          | 25 Aug 2014 15:10 | 1  |
| HS14080845-04         | MW-24                                      | 21 Aug 2014 10:30 |           | 25 Aug 2014 10:59          | 25 Aug 2014 15:12 | 1  |
| HS14080845-05         | MW-3                                       | 21 Aug 2014 12:20 |           | 25 Aug 2014 10:59          | 25 Aug 2014 15:17 | 1  |
| HS14080845-06         | MW-26                                      | 21 Aug 2014 14:05 |           | 25 Aug 2014 10:59          | 25 Aug 2014 15:19 | 1  |
| HS14080845-07         | MW-9                                       | 21 Aug 2014 16:10 |           | 25 Aug 2014 10:59          | 25 Aug 2014 15:20 | 1  |
| HS14080845-08         | MW-10                                      | 21 Aug 2014 17:50 |           | 25 Aug 2014 10:59          | 25 Aug 2014 15:22 | 1  |
| HS14080845-09         | EB-08-21-14-A                              | 21 Aug 2014 19:05 |           | 25 Aug 2014 10:59          | 25 Aug 2014 15:24 | 1  |
| HS14080845-10         | MW-7                                       | 21 Aug 2014 08:05 |           | 25 Aug 2014 10:59          | 25 Aug 2014 15:26 | 1  |
| HS14080845-11         | RW-1                                       | 21 Aug 2014 09:25 |           | 25 Aug 2014 10:59          | 25 Aug 2014 15:27 | 1  |
| HS14080845-12         | MW-1                                       | 21 Aug 2014 10:30 |           | 25 Aug 2014 10:59          | 25 Aug 2014 15:29 | 1  |
| HS14080845-13         | MW-6                                       | 21 Aug 2014 11:55 |           | 25 Aug 2014 10:59          | 25 Aug 2014 15:31 | 1  |
| HS14080845-17         | MW-27                                      | 21 Aug 2014 17:25 |           | 25 Aug 2014 10:59          | 25 Aug 2014 15:32 | 1  |
| HS14080845-18         | MW-8                                       | 21 Aug 2014 18:45 |           | 25 Aug 2014 10:59          | 25 Aug 2014 15:38 | 1  |
| HS14080845-19         | WW-SOUTH                                   | 22 Aug 2014 09:00 |           | 25 Aug 2014 10:59          | 25 Aug 2014 15:39 | 1  |
| HS14080845-20         | DUP-4                                      | 22 Aug 2014 00:00 |           | 25 Aug 2014 10:59          | 25 Aug 2014 15:41 | 1  |
| HS14080845-21         | WW-EAST                                    | 22 Aug 2014 10:20 |           | 25 Aug 2014 10:59          | 25 Aug 2014 15:00 | 1  |
| HS14080845-22         | WW-NORTH                                   | 22 Aug 2014 11:20 |           | 25 Aug 2014 10:59          | 25 Aug 2014 15:43 | 1  |
| HS14080845-23         | MW-30                                      | 22 Aug 2014 08:15 |           | 25 Aug 2014 10:59          | 25 Aug 2014 15:44 | 1  |
| <b>Batch ID</b> 85458 | <b>Test Name :</b> LOW-LEVEL SEMIVOLATILES |                   |           | <b>Matrix:</b> Groundwater |                   |    |
| HS14080845-01         | MW-29                                      | 20 Aug 2014 19:00 |           | 25 Aug 2014 14:30          | 26 Aug 2014 17:14 | 1  |
| HS14080845-02         | MW-4                                       | 20 Aug 2014 19:15 |           | 25 Aug 2014 14:30          | 26 Aug 2014 17:33 | 1  |
| HS14080845-03         | MW-23                                      | 21 Aug 2014 08:35 |           | 25 Aug 2014 14:30          | 26 Aug 2014 17:52 | 1  |
| HS14080845-04         | MW-24                                      | 21 Aug 2014 10:30 |           | 25 Aug 2014 14:30          | 26 Aug 2014 18:12 | 1  |
| HS14080845-05         | MW-3                                       | 21 Aug 2014 12:20 |           | 25 Aug 2014 14:30          | 26 Aug 2014 18:31 | 1  |
| HS14080845-06         | MW-26                                      | 21 Aug 2014 14:05 |           | 25 Aug 2014 14:30          | 26 Aug 2014 18:50 | 1  |
| HS14080845-07         | MW-9                                       | 21 Aug 2014 16:10 |           | 25 Aug 2014 14:30          | 26 Aug 2014 19:10 | 1  |



**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining - SA  
**WorkOrder:** HS14080845

**DATES REPORT**

| Sample ID             | Client Samp ID                                 | Collection Date   | TCLP Date | Prep Date                  | Analysis Date     | DF  |
|-----------------------|------------------------------------------------|-------------------|-----------|----------------------------|-------------------|-----|
| <b>Batch ID</b> 85499 | <b>Test Name : DISSOLVED METALS BY SW6020A</b> |                   |           | <b>Matrix: Groundwater</b> |                   |     |
| HS14080845-01         | MW-29                                          | 20 Aug 2014 19:00 |           | 26 Aug 2014 10:30          | 05 Sep 2014 18:30 | 1   |
| HS14080845-01         | MW-29                                          | 20 Aug 2014 19:00 |           | 26 Aug 2014 10:30          | 04 Sep 2014 18:04 | 1   |
| HS14080845-02         | MW-4                                           | 20 Aug 2014 19:15 |           | 26 Aug 2014 10:30          | 05 Sep 2014 18:32 | 1   |
| HS14080845-02         | MW-4                                           | 20 Aug 2014 19:15 |           | 26 Aug 2014 10:30          | 04 Sep 2014 18:07 | 1   |
| HS14080845-03         | MW-23                                          | 21 Aug 2014 08:35 |           | 26 Aug 2014 10:30          | 05 Sep 2014 19:35 | 100 |
| HS14080845-03         | MW-23                                          | 21 Aug 2014 08:35 |           | 26 Aug 2014 10:30          | 05 Sep 2014 18:35 | 1   |
| HS14080845-03         | MW-23                                          | 21 Aug 2014 08:35 |           | 26 Aug 2014 10:30          | 04 Sep 2014 18:09 | 1   |
| HS14080845-04         | MW-24                                          | 21 Aug 2014 10:30 |           | 26 Aug 2014 10:30          | 05 Sep 2014 18:38 | 1   |
| HS14080845-04         | MW-24                                          | 21 Aug 2014 10:30 |           | 26 Aug 2014 10:30          | 04 Sep 2014 18:12 | 1   |
| HS14080845-05         | MW-3                                           | 21 Aug 2014 12:20 |           | 26 Aug 2014 10:30          | 05 Sep 2014 18:40 | 1   |
| HS14080845-05         | MW-3                                           | 21 Aug 2014 12:20 |           | 26 Aug 2014 10:30          | 04 Sep 2014 18:15 | 1   |
| HS14080845-06         | MW-26                                          | 21 Aug 2014 14:05 |           | 26 Aug 2014 10:30          | 05 Sep 2014 18:48 | 1   |
| HS14080845-06         | MW-26                                          | 21 Aug 2014 14:05 |           | 26 Aug 2014 10:30          | 04 Sep 2014 18:22 | 1   |
| HS14080845-07         | MW-9                                           | 21 Aug 2014 16:10 |           | 26 Aug 2014 10:30          | 08 Sep 2014 11:20 | 10  |
| HS14080845-07         | MW-9                                           | 21 Aug 2014 16:10 |           | 26 Aug 2014 10:30          | 05 Sep 2014 18:51 | 1   |
| HS14080845-07         | MW-9                                           | 21 Aug 2014 16:10 |           | 26 Aug 2014 10:30          | 04 Sep 2014 18:25 | 1   |
| HS14080845-08         | MW-10                                          | 21 Aug 2014 17:50 |           | 26 Aug 2014 10:30          | 05 Sep 2014 18:53 | 1   |
| HS14080845-08         | MW-10                                          | 21 Aug 2014 17:50 |           | 26 Aug 2014 10:30          | 04 Sep 2014 18:28 | 1   |
| HS14080845-09         | EB-08-21-14-A                                  | 21 Aug 2014 19:05 |           | 26 Aug 2014 10:30          | 05 Sep 2014 18:56 | 1   |
| HS14080845-09         | EB-08-21-14-A                                  | 21 Aug 2014 19:05 |           | 26 Aug 2014 10:30          | 04 Sep 2014 18:30 | 1   |
| HS14080845-10         | MW-7                                           | 21 Aug 2014 08:05 |           | 26 Aug 2014 10:30          | 05 Sep 2014 18:58 | 1   |
| HS14080845-10         | MW-7                                           | 21 Aug 2014 08:05 |           | 26 Aug 2014 10:30          | 04 Sep 2014 18:33 | 1   |
| HS14080845-11         | RW-1                                           | 21 Aug 2014 09:25 |           | 26 Aug 2014 10:30          | 05 Sep 2014 19:01 | 1   |
| HS14080845-11         | RW-1                                           | 21 Aug 2014 09:25 |           | 26 Aug 2014 10:30          | 04 Sep 2014 18:36 | 1   |
| HS14080845-12         | MW-1                                           | 21 Aug 2014 10:30 |           | 26 Aug 2014 10:30          | 05 Sep 2014 19:04 | 1   |
| HS14080845-12         | MW-1                                           | 21 Aug 2014 10:30 |           | 26 Aug 2014 10:30          | 04 Sep 2014 18:38 | 1   |
| HS14080845-13         | MW-6                                           | 21 Aug 2014 11:55 |           | 26 Aug 2014 10:30          | 05 Sep 2014 19:40 | 10  |
| HS14080845-13         | MW-6                                           | 21 Aug 2014 11:55 |           | 26 Aug 2014 10:30          | 05 Sep 2014 19:06 | 1   |
| HS14080845-13         | MW-6                                           | 21 Aug 2014 11:55 |           | 26 Aug 2014 10:30          | 04 Sep 2014 18:41 | 1   |
| HS14080845-14         | MW-15                                          | 21 Aug 2014 13:35 |           | 26 Aug 2014 10:30          | 05 Sep 2014 19:09 | 1   |
| HS14080845-14         | MW-15                                          | 21 Aug 2014 13:35 |           | 26 Aug 2014 10:30          | 04 Sep 2014 18:43 | 1   |
| HS14080845-15         | DUP-3                                          | 21 Aug 2014 00:00 |           | 26 Aug 2014 10:30          | 05 Sep 2014 19:12 | 1   |
| HS14080845-15         | DUP-3                                          | 21 Aug 2014 00:00 |           | 26 Aug 2014 10:30          | 04 Sep 2014 18:46 | 1   |
| HS14080845-16         | MW-2                                           | 21 Aug 2014 16:05 |           | 26 Aug 2014 10:30          | 05 Sep 2014 19:19 | 1   |
| HS14080845-16         | MW-2                                           | 21 Aug 2014 16:05 |           | 26 Aug 2014 10:30          | 04 Sep 2014 18:54 | 1   |
| HS14080845-17         | MW-27                                          | 21 Aug 2014 17:25 |           | 26 Aug 2014 10:30          | 05 Sep 2014 19:22 | 1   |
| HS14080845-17         | MW-27                                          | 21 Aug 2014 17:25 |           | 26 Aug 2014 10:30          | 04 Sep 2014 18:56 | 1   |
| HS14080845-18         | MW-8                                           | 21 Aug 2014 18:45 |           | 26 Aug 2014 10:30          | 05 Sep 2014 19:43 | 100 |
| HS14080845-18         | MW-8                                           | 21 Aug 2014 18:45 |           | 26 Aug 2014 10:30          | 05 Sep 2014 19:25 | 1   |
| HS14080845-18         | MW-8                                           | 21 Aug 2014 18:45 |           | 26 Aug 2014 10:30          | 04 Sep 2014 18:59 | 1   |

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|---------------|----------------|-------------------|-----------|-------------------|-------------------|----|
| HS14080845-19 | WW-SOUTH       | 22 Aug 2014 09:00 |           | 26 Aug 2014 10:30 | 05 Sep 2014 19:27 | 1  |
| HS14080845-19 | WW-SOUTH       | 22 Aug 2014 09:00 |           | 26 Aug 2014 10:30 | 04 Sep 2014 19:02 | 1  |

| Batch ID      | 85507         | Test Name : LOW-LEVEL SEMIVOLATILES |  | Matrix: Groundwater |                   |   |
|---------------|---------------|-------------------------------------|--|---------------------|-------------------|---|
| HS14080845-08 | MW-10         | 21 Aug 2014 17:50                   |  | 26 Aug 2014 14:12   | 27 Aug 2014 15:22 | 1 |
| HS14080845-09 | EB-08-21-14-A | 21 Aug 2014 19:05                   |  | 26 Aug 2014 14:12   | 27 Aug 2014 17:17 | 1 |
| HS14080845-10 | MW-7          | 21 Aug 2014 08:05                   |  | 26 Aug 2014 14:12   | 27 Aug 2014 16:00 | 1 |
| HS14080845-11 | RW-1          | 21 Aug 2014 09:25                   |  | 26 Aug 2014 14:12   | 27 Aug 2014 16:20 | 1 |
| HS14080845-12 | MW-1          | 21 Aug 2014 10:30                   |  | 26 Aug 2014 14:12   | 27 Aug 2014 16:39 | 1 |
| HS14080845-13 | MW-6          | 21 Aug 2014 11:55                   |  | 26 Aug 2014 14:12   | 28 Aug 2014 16:50 | 1 |
| HS14080845-14 | MW-15         | 21 Aug 2014 13:35                   |  | 26 Aug 2014 14:12   | 27 Aug 2014 17:56 | 1 |
| HS14080845-15 | DUP-3         | 21 Aug 2014 00:00                   |  | 26 Aug 2014 14:12   | 27 Aug 2014 18:15 | 1 |
| HS14080845-16 | MW-2          | 21 Aug 2014 16:05                   |  | 26 Aug 2014 14:12   | 27 Aug 2014 18:34 | 1 |
| HS14080845-17 | MW-27         | 21 Aug 2014 17:25                   |  | 26 Aug 2014 14:12   | 27 Aug 2014 18:54 | 1 |
| HS14080845-18 | MW-8          | 21 Aug 2014 18:45                   |  | 26 Aug 2014 14:12   | 27 Aug 2014 21:47 | 1 |
| HS14080845-19 | WW-SOUTH      | 22 Aug 2014 09:00                   |  | 26 Aug 2014 14:12   | 27 Aug 2014 19:32 | 1 |
| HS14080845-20 | DUP-4         | 22 Aug 2014 00:00                   |  | 26 Aug 2014 14:12   | 27 Aug 2014 19:51 | 1 |
| HS14080845-21 | WW-EAST       | 22 Aug 2014 10:20                   |  | 26 Aug 2014 14:12   | 27 Aug 2014 14:18 | 1 |
| HS14080845-22 | WW-NORTH      | 22 Aug 2014 11:20                   |  | 26 Aug 2014 14:12   | 27 Aug 2014 22:25 | 1 |
| HS14080845-23 | MW-30         | 22 Aug 2014 08:15                   |  | 26 Aug 2014 14:12   | 27 Aug 2014 22:44 | 1 |
| HS14080845-24 | MW-17R        | 22 Aug 2014 10:05                   |  | 26 Aug 2014 14:12   | 27 Aug 2014 20:49 | 1 |
| HS14080845-25 | EB-8-22-14-A  | 22 Aug 2014 11:30                   |  | 26 Aug 2014 14:12   | 28 Aug 2014 17:09 | 1 |

| Batch ID      | 85523        | Test Name : DISSOLVED METALS BY SW6020A |  | Matrix: Groundwater |                   |   |
|---------------|--------------|-----------------------------------------|--|---------------------|-------------------|---|
| HS14080845-20 | DUP-4        | 22 Aug 2014 00:00                       |  | 27 Aug 2014 09:36   | 04 Sep 2014 22:05 | 1 |
| HS14080845-21 | WW-EAST      | 22 Aug 2014 10:20                       |  | 27 Aug 2014 09:36   | 04 Sep 2014 22:07 | 1 |
| HS14080845-22 | WW-NORTH     | 22 Aug 2014 11:20                       |  | 27 Aug 2014 09:36   | 04 Sep 2014 22:23 | 1 |
| HS14080845-23 | MW-30        | 22 Aug 2014 08:15                       |  | 27 Aug 2014 09:36   | 04 Sep 2014 22:26 | 1 |
| HS14080845-24 | MW-17R       | 22 Aug 2014 10:05                       |  | 27 Aug 2014 09:36   | 05 Sep 2014 19:30 | 1 |
| HS14080845-24 | MW-17R       | 22 Aug 2014 10:05                       |  | 27 Aug 2014 09:36   | 04 Sep 2014 22:33 | 1 |
| HS14080845-25 | EB-8-22-14-A | 22 Aug 2014 11:30                       |  | 27 Aug 2014 09:36   | 05 Sep 2014 19:33 | 1 |
| HS14080845-25 | EB-8-22-14-A | 22 Aug 2014 11:30                       |  | 27 Aug 2014 09:36   | 04 Sep 2014 22:36 | 1 |

| Batch ID      | 85580        | Test Name : MERCURY BY SW7470A |  | Matrix: Groundwater |                   |   |
|---------------|--------------|--------------------------------|--|---------------------|-------------------|---|
| HS14080845-14 | MW-15        | 21 Aug 2014 13:35              |  | 28 Aug 2014 11:31   | 28 Aug 2014 16:08 | 1 |
| HS14080845-15 | DUP-3        | 21 Aug 2014 00:00              |  | 28 Aug 2014 11:31   | 28 Aug 2014 16:10 | 1 |
| HS14080845-16 | MW-2         | 21 Aug 2014 16:05              |  | 28 Aug 2014 11:31   | 28 Aug 2014 16:12 | 1 |
| HS14080845-24 | MW-17R       | 22 Aug 2014 10:05              |  | 28 Aug 2014 11:31   | 28 Aug 2014 16:14 | 1 |
| HS14080845-25 | EB-8-22-14-A | 22 Aug 2014 11:30              |  | 28 Aug 2014 11:31   | 28 Aug 2014 16:15 | 1 |

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|-------------------------------------------------------------------------------------------|----------------|-------------------|-----------|-----------|-------------------|----|
| <b>Batch ID R239983 Test Name : TOTAL DISSOLVED SOLIDS BY SM2540C Matrix: Groundwater</b> |                |                   |           |           |                   |    |
| HS14080845-01                                                                             | MW-29          | 20 Aug 2014 19:00 |           |           | 26 Aug 2014 18:00 | 1  |
| HS14080845-02                                                                             | MW-4           | 20 Aug 2014 19:15 |           |           | 26 Aug 2014 18:00 | 1  |
| HS14080845-03                                                                             | MW-23          | 21 Aug 2014 08:35 |           |           | 26 Aug 2014 18:00 | 1  |
| HS14080845-04                                                                             | MW-24          | 21 Aug 2014 10:30 |           |           | 26 Aug 2014 18:00 | 1  |
| HS14080845-05                                                                             | MW-3           | 21 Aug 2014 12:20 |           |           | 26 Aug 2014 18:00 | 1  |
| HS14080845-06                                                                             | MW-26          | 21 Aug 2014 14:05 |           |           | 26 Aug 2014 18:00 | 1  |
| <b>Batch ID R240062 Test Name : VOLATILES - SW8260C Matrix: Groundwater</b>               |                |                   |           |           |                   |    |
| HS14080845-01                                                                             | MW-29          | 20 Aug 2014 19:00 |           |           | 28 Aug 2014 22:07 | 1  |
| HS14080845-02                                                                             | MW-4           | 20 Aug 2014 19:15 |           |           | 28 Aug 2014 22:34 | 1  |
| HS14080845-03                                                                             | MW-23          | 21 Aug 2014 08:35 |           |           | 28 Aug 2014 23:02 | 1  |
| HS14080845-04                                                                             | MW-24          | 21 Aug 2014 10:30 |           |           | 28 Aug 2014 23:29 | 1  |
| HS14080845-05                                                                             | MW-3           | 21 Aug 2014 12:20 |           |           | 28 Aug 2014 23:55 | 1  |
| HS14080845-06                                                                             | MW-26          | 21 Aug 2014 14:05 |           |           | 29 Aug 2014 00:22 | 1  |
| HS14080845-07                                                                             | MW-9           | 21 Aug 2014 16:10 |           |           | 29 Aug 2014 00:49 | 1  |
| HS14080845-08                                                                             | MW-10          | 21 Aug 2014 17:50 |           |           | 29 Aug 2014 01:16 | 1  |
| HS14080845-09                                                                             | EB-08-21-14-A  | 21 Aug 2014 19:05 |           |           | 29 Aug 2014 01:43 | 1  |
| HS14080845-10                                                                             | MW-7           | 21 Aug 2014 08:05 |           |           | 29 Aug 2014 02:10 | 1  |
| HS14080845-21                                                                             | WW-EAST        | 22 Aug 2014 10:20 |           |           | 28 Aug 2014 19:48 | 1  |
| <b>Batch ID R240113 Test Name : VOLATILES - SW8260C Matrix: Water</b>                     |                |                   |           |           |                   |    |
| HS14080845-26                                                                             | TB-08-22-14-A  | 22 Aug 2014 00:00 |           |           | 29 Aug 2014 13:56 | 1  |
| <b>Batch ID R240113 Test Name : VOLATILES - SW8260C Matrix: Groundwater</b>               |                |                   |           |           |                   |    |
| HS14080845-11                                                                             | RW-1           | 21 Aug 2014 09:25 |           |           | 29 Aug 2014 12:33 | 1  |
| HS14080845-12                                                                             | MW-1           | 21 Aug 2014 10:30 |           |           | 29 Aug 2014 13:01 | 1  |
| <b>Batch ID R240114 Test Name : TOTAL DISSOLVED SOLIDS BY SM2540C Matrix: Groundwater</b> |                |                   |           |           |                   |    |
| HS14080845-07                                                                             | MW-9           | 21 Aug 2014 16:10 |           |           | 28 Aug 2014 16:30 | 1  |
| HS14080845-08                                                                             | MW-10          | 21 Aug 2014 17:50 |           |           | 28 Aug 2014 16:30 | 1  |
| HS14080845-09                                                                             | EB-08-21-14-A  | 21 Aug 2014 19:05 |           |           | 28 Aug 2014 16:30 | 1  |
| HS14080845-10                                                                             | MW-7           | 21 Aug 2014 08:05 |           |           | 28 Aug 2014 16:30 | 1  |
| HS14080845-11                                                                             | RW-1           | 21 Aug 2014 09:25 |           |           | 28 Aug 2014 16:30 | 1  |

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| <b>Batch ID R240131 Test Name : TOTAL DISSOLVED SOLIDS BY SM2540C Matrix: Groundwater</b> |                |                   |           |           |                   |    |
| HS14080845-12                                                                             | MW-1           | 21 Aug 2014 10:30 |           |           | 28 Aug 2014 18:00 | 1  |
| HS14080845-13                                                                             | MW-6           | 21 Aug 2014 11:55 |           |           | 28 Aug 2014 18:00 | 1  |
| HS14080845-14                                                                             | MW-15          | 21 Aug 2014 13:35 |           |           | 28 Aug 2014 18:00 | 1  |
| HS14080845-15                                                                             | DUP-3          | 21 Aug 2014 00:00 |           |           | 28 Aug 2014 18:00 | 1  |
| HS14080845-16                                                                             | MW-2           | 21 Aug 2014 16:05 |           |           | 28 Aug 2014 18:00 | 1  |
| HS14080845-17                                                                             | MW-27          | 21 Aug 2014 17:25 |           |           | 28 Aug 2014 18:00 | 1  |
| HS14080845-18                                                                             | MW-8           | 21 Aug 2014 18:45 |           |           | 28 Aug 2014 18:00 | 1  |
| <b>Batch ID R240150 Test Name : TOTAL DISSOLVED SOLIDS BY SM2540C Matrix: Groundwater</b> |                |                   |           |           |                   |    |
| HS14080845-19                                                                             | WW-SOUTH       | 22 Aug 2014 09:00 |           |           | 29 Aug 2014 15:30 | 1  |
| HS14080845-20                                                                             | DUP-4          | 22 Aug 2014 00:00 |           |           | 29 Aug 2014 15:30 | 1  |
| HS14080845-21                                                                             | WW-EAST        | 22 Aug 2014 10:20 |           |           | 29 Aug 2014 15:30 | 1  |
| HS14080845-22                                                                             | WW-NORTH       | 22 Aug 2014 11:20 |           |           | 29 Aug 2014 15:30 | 1  |
| HS14080845-23                                                                             | MW-30          | 22 Aug 2014 08:15 |           |           | 29 Aug 2014 15:30 | 1  |
| HS14080845-24                                                                             | MW-17R         | 22 Aug 2014 10:05 |           |           | 29 Aug 2014 15:30 | 1  |
| HS14080845-25                                                                             | EB-8-22-14-A   | 22 Aug 2014 11:30 |           |           | 29 Aug 2014 15:30 | 1  |
| <b>Batch ID R240187 Test Name : SPECIFIC CONDUCTIVITY BY SM2510 B Matrix: Groundwater</b> |                |                   |           |           |                   |    |
| HS14080845-01                                                                             | MW-29          | 20 Aug 2014 19:00 |           |           | 02 Sep 2014 12:08 | 1  |
| HS14080845-02                                                                             | MW-4           | 20 Aug 2014 19:15 |           |           | 02 Sep 2014 12:19 | 1  |
| HS14080845-03                                                                             | MW-23          | 21 Aug 2014 08:35 |           |           | 02 Sep 2014 12:25 | 1  |
| HS14080845-04                                                                             | MW-24          | 21 Aug 2014 10:30 |           |           | 02 Sep 2014 12:31 | 1  |
| HS14080845-05                                                                             | MW-3           | 21 Aug 2014 12:20 |           |           | 02 Sep 2014 12:45 | 1  |
| HS14080845-06                                                                             | MW-26          | 21 Aug 2014 14:05 |           |           | 02 Sep 2014 12:51 | 1  |
| HS14080845-07                                                                             | MW-9           | 21 Aug 2014 16:10 |           |           | 02 Sep 2014 12:57 | 1  |
| HS14080845-08                                                                             | MW-10          | 21 Aug 2014 17:50 |           |           | 02 Sep 2014 13:03 | 1  |
| HS14080845-09                                                                             | EB-08-21-14-A  | 21 Aug 2014 19:05 |           |           | 02 Sep 2014 13:08 | 1  |
| HS14080845-10                                                                             | MW-7           | 21 Aug 2014 08:05 |           |           | 02 Sep 2014 13:14 | 1  |
| HS14080845-11                                                                             | RW-1           | 21 Aug 2014 09:25 |           |           | 02 Sep 2014 13:20 | 1  |
| HS14080845-12                                                                             | MW-1           | 21 Aug 2014 10:30 |           |           | 02 Sep 2014 13:34 | 1  |
| HS14080845-13                                                                             | MW-6           | 21 Aug 2014 11:55 |           |           | 02 Sep 2014 13:40 | 1  |
| HS14080845-14                                                                             | MW-15          | 21 Aug 2014 13:35 |           |           | 02 Sep 2014 13:46 | 1  |

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|-------------------------------------------------------------------------------|----------------|-------------------|-----------|-----------|-------------------|----|
| <b>Batch ID R240188 Test Name : ALKALINITY BY SM2320B Matrix: Groundwater</b> |                |                   |           |           |                   |    |
| HS14080845-01                                                                 | MW-29          | 20 Aug 2014 19:00 |           |           | 02 Sep 2014 12:08 | 1  |
| HS14080845-02                                                                 | MW-4           | 20 Aug 2014 19:15 |           |           | 02 Sep 2014 12:19 | 1  |
| HS14080845-03                                                                 | MW-23          | 21 Aug 2014 08:35 |           |           | 02 Sep 2014 12:25 | 1  |
| HS14080845-04                                                                 | MW-24          | 21 Aug 2014 10:30 |           |           | 02 Sep 2014 12:31 | 1  |
| HS14080845-05                                                                 | MW-3           | 21 Aug 2014 12:20 |           |           | 02 Sep 2014 12:45 | 1  |
| HS14080845-06                                                                 | MW-26          | 21 Aug 2014 14:05 |           |           | 02 Sep 2014 12:51 | 1  |
| HS14080845-07                                                                 | MW-9           | 21 Aug 2014 16:10 |           |           | 02 Sep 2014 12:57 | 1  |
| HS14080845-08                                                                 | MW-10          | 21 Aug 2014 17:50 |           |           | 02 Sep 2014 13:03 | 1  |
| HS14080845-09                                                                 | EB-08-21-14-A  | 21 Aug 2014 19:05 |           |           | 02 Sep 2014 13:08 | 1  |
| HS14080845-10                                                                 | MW-7           | 21 Aug 2014 08:05 |           |           | 02 Sep 2014 13:14 | 1  |
| HS14080845-11                                                                 | RW-1           | 21 Aug 2014 09:25 |           |           | 02 Sep 2014 13:20 | 1  |
| HS14080845-12                                                                 | MW-1           | 21 Aug 2014 10:30 |           |           | 02 Sep 2014 13:34 | 1  |
| HS14080845-13                                                                 | MW-6           | 21 Aug 2014 11:55 |           |           | 02 Sep 2014 13:40 | 1  |
| HS14080845-14                                                                 | MW-15          | 21 Aug 2014 13:35 |           |           | 02 Sep 2014 13:46 | 1  |
| <b>Batch ID R240189 Test Name : PH BY SM4500H+ B Matrix: Groundwater</b>      |                |                   |           |           |                   |    |
| HS14080845-01                                                                 | MW-29          | 20 Aug 2014 19:00 |           |           | 02 Sep 2014 12:08 | 1  |
| HS14080845-02                                                                 | MW-4           | 20 Aug 2014 19:15 |           |           | 02 Sep 2014 12:19 | 1  |
| HS14080845-03                                                                 | MW-23          | 21 Aug 2014 08:35 |           |           | 02 Sep 2014 12:25 | 1  |
| HS14080845-04                                                                 | MW-24          | 21 Aug 2014 10:30 |           |           | 02 Sep 2014 12:31 | 1  |
| HS14080845-05                                                                 | MW-3           | 21 Aug 2014 12:20 |           |           | 02 Sep 2014 12:45 | 1  |
| HS14080845-06                                                                 | MW-26          | 21 Aug 2014 14:05 |           |           | 02 Sep 2014 12:51 | 1  |
| HS14080845-07                                                                 | MW-9           | 21 Aug 2014 16:10 |           |           | 02 Sep 2014 12:57 | 1  |
| HS14080845-08                                                                 | MW-10          | 21 Aug 2014 17:50 |           |           | 02 Sep 2014 13:03 | 1  |
| HS14080845-09                                                                 | EB-08-21-14-A  | 21 Aug 2014 19:05 |           |           | 02 Sep 2014 13:08 | 1  |
| HS14080845-10                                                                 | MW-7           | 21 Aug 2014 08:05 |           |           | 02 Sep 2014 13:14 | 1  |
| HS14080845-11                                                                 | RW-1           | 21 Aug 2014 09:25 |           |           | 02 Sep 2014 13:20 | 1  |
| HS14080845-12                                                                 | MW-1           | 21 Aug 2014 10:30 |           |           | 02 Sep 2014 13:34 | 1  |
| HS14080845-13                                                                 | MW-6           | 21 Aug 2014 11:55 |           |           | 02 Sep 2014 13:40 | 1  |
| HS14080845-14                                                                 | MW-15          | 21 Aug 2014 13:35 |           |           | 02 Sep 2014 13:46 | 1  |
| <b>Batch ID R240229 Test Name : VOLATILES - SW8260C Matrix: Groundwater</b>   |                |                   |           |           |                   |    |
| HS14080845-13                                                                 | MW-6           | 21 Aug 2014 11:55 |           |           | 02 Sep 2014 19:11 | 1  |
| HS14080845-14                                                                 | MW-15          | 21 Aug 2014 13:35 |           |           | 02 Sep 2014 19:39 | 1  |
| HS14080845-15                                                                 | DUP-3          | 21 Aug 2014 00:00 |           |           | 02 Sep 2014 20:07 | 1  |
| HS14080845-16                                                                 | MW-2           | 21 Aug 2014 16:05 |           |           | 02 Sep 2014 20:35 | 1  |
| HS14080845-17                                                                 | MW-27          | 21 Aug 2014 17:25 |           |           | 02 Sep 2014 21:03 | 1  |
| HS14080845-18                                                                 | MW-8           | 21 Aug 2014 18:45 |           |           | 02 Sep 2014 21:30 | 1  |

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|-------------------------------------------------------------------------------------------|----------------|-------------------|-----------|-----------|-------------------|----|
| <b>Batch ID R240325 Test Name : VOLATILES - SW8260C Matrix: Groundwater</b>               |                |                   |           |           |                   |    |
| HS14080845-19                                                                             | WW-SOUTH       | 22 Aug 2014 09:00 |           |           | 03 Sep 2014 13:14 | 1  |
| HS14080845-20                                                                             | DUP-4          | 22 Aug 2014 00:00 |           |           | 03 Sep 2014 12:46 | 1  |
| HS14080845-22                                                                             | WW-NORTH       | 22 Aug 2014 11:20 |           |           | 03 Sep 2014 13:42 | 1  |
| HS14080845-23                                                                             | MW-30          | 22 Aug 2014 08:15 |           |           | 03 Sep 2014 14:11 | 1  |
| HS14080845-24                                                                             | MW-17R         | 22 Aug 2014 10:05 |           |           | 03 Sep 2014 14:39 | 1  |
| HS14080845-25                                                                             | EB-8-22-14-A   | 22 Aug 2014 11:30 |           |           | 03 Sep 2014 12:18 | 1  |
| <b>Batch ID R240329 Test Name : SPECIFIC CONDUCTIVITY BY SM2510 B Matrix: Groundwater</b> |                |                   |           |           |                   |    |
| HS14080845-15                                                                             | DUP-3          | 21 Aug 2014 00:00 |           |           | 03 Sep 2014 11:08 | 1  |
| HS14080845-16                                                                             | MW-2           | 21 Aug 2014 16:05 |           |           | 03 Sep 2014 11:14 | 1  |
| HS14080845-17                                                                             | MW-27          | 21 Aug 2014 17:25 |           |           | 03 Sep 2014 11:20 | 1  |
| HS14080845-18                                                                             | MW-8           | 21 Aug 2014 18:45 |           |           | 03 Sep 2014 11:34 | 1  |
| HS14080845-19                                                                             | WW-SOUTH       | 22 Aug 2014 09:00 |           |           | 03 Sep 2014 11:40 | 1  |
| HS14080845-20                                                                             | DUP-4          | 22 Aug 2014 00:00 |           |           | 03 Sep 2014 11:46 | 1  |
| HS14080845-21                                                                             | WW-EAST        | 22 Aug 2014 10:20 |           |           | 03 Sep 2014 11:56 | 1  |
| HS14080845-22                                                                             | WW-NORTH       | 22 Aug 2014 11:20 |           |           | 03 Sep 2014 12:07 | 1  |
| HS14080845-23                                                                             | MW-30          | 22 Aug 2014 08:15 |           |           | 03 Sep 2014 12:13 | 1  |
| HS14080845-24                                                                             | MW-17R         | 22 Aug 2014 10:05 |           |           | 03 Sep 2014 12:19 | 1  |
| HS14080845-25                                                                             | EB-8-22-14-A   | 22 Aug 2014 11:30 |           |           | 03 Sep 2014 12:32 | 1  |
| <b>Batch ID R240330 Test Name : ALKALINITY BY SM2320B Matrix: Groundwater</b>             |                |                   |           |           |                   |    |
| HS14080845-15                                                                             | DUP-3          | 21 Aug 2014 00:00 |           |           | 03 Sep 2014 11:08 | 1  |
| HS14080845-16                                                                             | MW-2           | 21 Aug 2014 16:05 |           |           | 03 Sep 2014 11:14 | 1  |
| HS14080845-17                                                                             | MW-27          | 21 Aug 2014 17:25 |           |           | 03 Sep 2014 11:20 | 1  |
| HS14080845-18                                                                             | MW-8           | 21 Aug 2014 18:45 |           |           | 03 Sep 2014 11:34 | 1  |
| HS14080845-19                                                                             | WW-SOUTH       | 22 Aug 2014 09:00 |           |           | 03 Sep 2014 11:40 | 1  |
| HS14080845-20                                                                             | DUP-4          | 22 Aug 2014 00:00 |           |           | 03 Sep 2014 11:46 | 1  |
| HS14080845-21                                                                             | WW-EAST        | 22 Aug 2014 10:20 |           |           | 03 Sep 2014 11:56 | 1  |
| HS14080845-22                                                                             | WW-NORTH       | 22 Aug 2014 11:20 |           |           | 03 Sep 2014 12:07 | 1  |
| HS14080845-23                                                                             | MW-30          | 22 Aug 2014 08:15 |           |           | 03 Sep 2014 12:13 | 1  |
| HS14080845-24                                                                             | MW-17R         | 22 Aug 2014 10:05 |           |           | 03 Sep 2014 12:19 | 1  |
| HS14080845-25                                                                             | EB-8-22-14-A   | 22 Aug 2014 11:30 |           |           | 03 Sep 2014 12:32 | 1  |

**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining - SA  
**WorkOrder:** HS14080845

**DATES REPORT**

| Sample ID       | Client Samp ID | Collection Date                     | TCLP Date | Prep Date | Analysis Date              | DF |
|-----------------|----------------|-------------------------------------|-----------|-----------|----------------------------|----|
| <b>Batch ID</b> | <b>R240333</b> | <b>Test Name : PH BY SM4500H+ B</b> |           |           | <b>Matrix: Groundwater</b> |    |
| HS14080845-15   | DUP-3          | 21 Aug 2014 00:00                   |           |           | 03 Sep 2014 11:08          | 1  |
| HS14080845-16   | MW-2           | 21 Aug 2014 16:05                   |           |           | 03 Sep 2014 11:14          | 1  |
| HS14080845-17   | MW-27          | 21 Aug 2014 17:25                   |           |           | 03 Sep 2014 11:20          | 1  |
| HS14080845-18   | MW-8           | 21 Aug 2014 18:45                   |           |           | 03 Sep 2014 11:34          | 1  |
| HS14080845-19   | WW-SOUTH       | 22 Aug 2014 09:00                   |           |           | 03 Sep 2014 11:40          | 1  |
| HS14080845-20   | DUP-4          | 22 Aug 2014 00:00                   |           |           | 03 Sep 2014 11:46          | 1  |
| HS14080845-21   | WW-EAST        | 22 Aug 2014 10:20                   |           |           | 03 Sep 2014 11:56          | 1  |
| HS14080845-22   | WW-NORTH       | 22 Aug 2014 11:20                   |           |           | 03 Sep 2014 12:07          | 1  |
| HS14080845-23   | MW-30          | 22 Aug 2014 08:15                   |           |           | 03 Sep 2014 12:13          | 1  |
| HS14080845-24   | MW-17R         | 22 Aug 2014 10:05                   |           |           | 03 Sep 2014 12:19          | 1  |
| HS14080845-25   | EB-8-22-14-A   | 22 Aug 2014 11:30                   |           |           | 03 Sep 2014 12:32          | 1  |
| <b>Batch ID</b> | <b>R240459</b> | <b>Test Name : ANIONS BY E300.0</b> |           |           | <b>Matrix: Groundwater</b> |    |
| HS14080845-21   | WW-EAST        | 22 Aug 2014 10:20                   |           |           | 06 Sep 2014 22:32          | 2  |
| HS14080845-22   | WW-NORTH       | 22 Aug 2014 11:20                   |           |           | 06 Sep 2014 23:37          | 2  |
| HS14080845-23   | MW-30          | 22 Aug 2014 08:15                   |           |           | 06 Sep 2014 23:58          | 1  |
| HS14080845-24   | MW-17R         | 22 Aug 2014 10:05                   |           |           | 07 Sep 2014 00:20          | 1  |
| HS14080845-25   | EB-8-22-14-A   | 22 Aug 2014 11:30                   |           |           | 07 Sep 2014 00:42          | 1  |

**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining - SA  
**WorkOrder:** HS14080845

**DATES REPORT**

| Sample ID       | Client Samp ID | Collection Date                     | TCLP Date | Prep Date | Analysis Date              | DF |
|-----------------|----------------|-------------------------------------|-----------|-----------|----------------------------|----|
| <b>Batch ID</b> | <b>R240464</b> | <b>Test Name : ANIONS BY E300.0</b> |           |           | <b>Matrix: Groundwater</b> |    |
| HS14080845-01   | MW-29          | 20 Aug 2014 19:00                   |           |           | 07 Sep 2014 02:52          | 5  |
| HS14080845-01   | MW-29          | 20 Aug 2014 19:00                   |           |           | 07 Sep 2014 02:30          | 1  |
| HS14080845-02   | MW-4           | 20 Aug 2014 19:15                   |           |           | 07 Sep 2014 03:14          | 1  |
| HS14080845-03   | MW-23          | 21 Aug 2014 08:35                   |           |           | 07 Sep 2014 03:57          | 5  |
| HS14080845-03   | MW-23          | 21 Aug 2014 08:35                   |           |           | 07 Sep 2014 03:35          | 1  |
| HS14080845-04   | MW-24          | 21 Aug 2014 10:30                   |           |           | 07 Sep 2014 04:19          | 1  |
| HS14080845-05   | MW-3           | 21 Aug 2014 12:20                   |           |           | 07 Sep 2014 04:40          | 1  |
| HS14080845-06   | MW-26          | 21 Aug 2014 14:05                   |           |           | 07 Sep 2014 05:02          | 1  |
| HS14080845-07   | MW-9           | 21 Aug 2014 16:10                   |           |           | 07 Sep 2014 06:29          | 5  |
| HS14080845-07   | MW-9           | 21 Aug 2014 16:10                   |           |           | 07 Sep 2014 06:07          | 1  |
| HS14080845-08   | MW-10          | 21 Aug 2014 17:50                   |           |           | 07 Sep 2014 07:12          | 5  |
| HS14080845-08   | MW-10          | 21 Aug 2014 17:50                   |           |           | 07 Sep 2014 06:51          | 1  |
| HS14080845-09   | EB-08-21-14-A  | 21 Aug 2014 19:05                   |           |           | 07 Sep 2014 07:34          | 1  |
| HS14080845-10   | MW-7           | 21 Aug 2014 08:05                   |           |           | 07 Sep 2014 08:39          | 1  |
| HS14080845-11   | RW-1           | 21 Aug 2014 09:25                   |           |           | 07 Sep 2014 09:01          | 1  |
| HS14080845-12   | MW-1           | 21 Aug 2014 10:30                   |           |           | 07 Sep 2014 09:23          | 1  |
| HS14080845-13   | MW-6           | 21 Aug 2014 11:55                   |           |           | 07 Sep 2014 10:49          | 5  |
| HS14080845-13   | MW-6           | 21 Aug 2014 11:55                   |           |           | 07 Sep 2014 10:28          | 1  |
| HS14080845-14   | MW-15          | 21 Aug 2014 13:35                   |           |           | 07 Sep 2014 11:33          | 5  |
| HS14080845-14   | MW-15          | 21 Aug 2014 13:35                   |           |           | 07 Sep 2014 11:11          | 1  |
| HS14080845-15   | DUP-3          | 21 Aug 2014 00:00                   |           |           | 07 Sep 2014 12:16          | 5  |
| HS14080845-15   | DUP-3          | 21 Aug 2014 00:00                   |           |           | 07 Sep 2014 11:54          | 1  |
| HS14080845-16   | MW-2           | 21 Aug 2014 16:05                   |           |           | 07 Sep 2014 12:38          | 2  |
| HS14080845-17   | MW-27          | 21 Aug 2014 17:25                   |           |           | 07 Sep 2014 13:21          | 5  |
| HS14080845-17   | MW-27          | 21 Aug 2014 17:25                   |           |           | 07 Sep 2014 13:00          | 1  |
| HS14080845-18   | MW-8           | 21 Aug 2014 18:45                   |           |           | 07 Sep 2014 14:48          | 5  |
| HS14080845-18   | MW-8           | 21 Aug 2014 18:45                   |           |           | 07 Sep 2014 13:43          | 1  |
| HS14080845-19   | WW-SOUTH       | 22 Aug 2014 09:00                   |           |           | 07 Sep 2014 15:31          | 10 |
| HS14080845-19   | WW-SOUTH       | 22 Aug 2014 09:00                   |           |           | 07 Sep 2014 15:10          | 1  |
| HS14080845-20   | DUP-4          | 22 Aug 2014 00:00                   |           |           | 07 Sep 2014 15:53          | 1  |



**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining - SA  
**WorkOrder:** HS14080845

**DATES REPORT**

| Sample ID       | Client Samp ID | Collection Date                              | TCLP Date | Prep Date | Analysis Date              | DF |
|-----------------|----------------|----------------------------------------------|-----------|-----------|----------------------------|----|
| <b>Batch ID</b> | <b>R240466</b> | <b>Test Name : NITRATE/NITRITE BY E300.0</b> |           |           | <b>Matrix: Groundwater</b> |    |
| HS14080845-01   | MW-29          | 20 Aug 2014 19:00                            |           |           | 07 Sep 2014 18:03          | 5  |
| HS14080845-02   | MW-4           | 20 Aug 2014 19:15                            |           |           | 07 Sep 2014 18:25          | 5  |
| HS14080845-03   | MW-23          | 21 Aug 2014 08:35                            |           |           | 07 Sep 2014 18:47          | 5  |
| HS14080845-04   | MW-24          | 21 Aug 2014 10:30                            |           |           | 07 Sep 2014 19:08          | 5  |
| HS14080845-06   | MW-26          | 21 Aug 2014 14:05                            |           |           | 07 Sep 2014 19:30          | 5  |
| HS14080845-07   | MW-9           | 21 Aug 2014 16:10                            |           |           | 07 Sep 2014 19:52          | 5  |
| HS14080845-08   | MW-10          | 21 Aug 2014 17:50                            |           |           | 07 Sep 2014 20:13          | 5  |
| HS14080845-09   | EB-08-21-14-A  | 21 Aug 2014 19:05                            |           |           | 07 Sep 2014 20:35          | 5  |
| HS14080845-10   | MW-7           | 21 Aug 2014 08:05                            |           |           | 07 Sep 2014 21:40          | 5  |
| HS14080845-11   | RW-1           | 21 Aug 2014 09:25                            |           |           | 07 Sep 2014 22:02          | 5  |
| HS14080845-12   | MW-1           | 21 Aug 2014 10:30                            |           |           | 07 Sep 2014 22:24          | 5  |
| HS14080845-13   | MW-6           | 21 Aug 2014 11:55                            |           |           | 07 Sep 2014 22:45          | 5  |
| HS14080845-17   | MW-27          | 21 Aug 2014 17:25                            |           |           | 07 Sep 2014 23:07          | 5  |
| HS14080845-18   | MW-8           | 21 Aug 2014 18:45                            |           |           | 07 Sep 2014 23:29          | 5  |
| HS14080845-19   | WW-SOUTH       | 22 Aug 2014 09:00                            |           |           | 07 Sep 2014 23:50          | 5  |
| HS14080845-20   | DUP-4          | 22 Aug 2014 00:00                            |           |           | 08 Sep 2014 00:12          | 5  |
| HS14080845-21   | WW-EAST        | 22 Aug 2014 10:20                            |           |           | 08 Sep 2014 00:34          | 5  |
| HS14080845-22   | WW-NORTH       | 22 Aug 2014 11:20                            |           |           | 08 Sep 2014 02:22          | 5  |
| HS14080845-23   | MW-30          | 22 Aug 2014 08:15                            |           |           | 08 Sep 2014 02:44          | 5  |
| HS14080845-24   | MW-17R         | 22 Aug 2014 10:05                            |           |           | 08 Sep 2014 03:06          | 5  |
| HS14080845-25   | EB-8-22-14-A   | 22 Aug 2014 11:30                            |           |           | 08 Sep 2014 03:27          | 5  |
| <b>Batch ID</b> | <b>R240509</b> | <b>Test Name : ANIONS BY E300.0</b>          |           |           | <b>Matrix: Groundwater</b> |    |
| HS14080845-20   | DUP-4          | 22 Aug 2014 00:00                            |           |           | 08 Sep 2014 14:08          | 5  |
| HS14080845-20   | DUP-4          | 22 Aug 2014 00:00                            |           |           | 08 Sep 2014 13:16          | 2  |
| HS14080845-24   | MW-17R         | 22 Aug 2014 10:05                            |           |           | 08 Sep 2014 13:38          | 10 |
| <b>Batch ID</b> | <b>R240510</b> | <b>Test Name : NITRATE/NITRITE BY E300.0</b> |           |           | <b>Matrix: Groundwater</b> |    |
| HS14080845-05   | MW-3           | 21 Aug 2014 12:20                            |           |           | 08 Sep 2014 14:43          | 5  |
| HS14080845-14   | MW-15          | 21 Aug 2014 13:35                            |           |           | 08 Sep 2014 15:49          | 5  |
| HS14080845-15   | DUP-3          | 21 Aug 2014 00:00                            |           |           | 08 Sep 2014 16:10          | 5  |
| HS14080845-16   | MW-2           | 21 Aug 2014 16:05                            |           |           | 08 Sep 2014 16:32          | 5  |

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85453    |                             | Instrument: HG03 |         | Method: SW7470                   |                                                 |
|--------------------|-----------------------------|------------------|---------|----------------------------------|-------------------------------------------------|
| <b>MBLK</b>        | Sample ID: GBLKW3-082514    | Units: mg/L      |         | Analysis Date: 25-Aug-2014 14:57 |                                                 |
| Client ID:         | Run ID: HG03_239786         | SeqNo: 2979246   |         | PrepDate: 25-Aug-2014            | DF: 1                                           |
| Analyte            | Result                      | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Mercury            | ND                          | 0.000200         |         |                                  |                                                 |
| <b>LCS</b>         | Sample ID: GLCSW3-082514    | Units: mg/L      |         | Analysis Date: 25-Aug-2014 14:58 |                                                 |
| Client ID:         | Run ID: HG03_239786         | SeqNo: 2979247   |         | PrepDate: 25-Aug-2014            | DF: 1                                           |
| Analyte            | Result                      | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Mercury            | 0.00519                     | 0.000200         | 0.005   | 0 104                            | 80 - 124                                        |
| <b>MS</b>          | Sample ID: HS14080845-21MS  | Units: mg/L      |         | Analysis Date: 25-Aug-2014 15:03 |                                                 |
| Client ID: WW-EAST | Run ID: HG03_239786         | SeqNo: 2979250   |         | PrepDate: 25-Aug-2014            | DF: 1                                           |
| Analyte            | Result                      | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Mercury            | 0.00537                     | 0.000200         | 0.005   | -0.000007 108                    | 80 - 124                                        |
| <b>MSD</b>         | Sample ID: HS14080845-21MSD | Units: mg/L      |         | Analysis Date: 25-Aug-2014 15:05 |                                                 |
| Client ID: WW-EAST | Run ID: HG03_239786         | SeqNo: 2979251   |         | PrepDate: 25-Aug-2014            | DF: 1                                           |
| Analyte            | Result                      | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Mercury            | 0.00535                     | 0.000200         | 0.005   | -0.000007 107                    | 80 - 124 0.00537 0.373 20                       |
| <b>DUP</b>         | Sample ID: HS14080845-21DUP | Units: mg/L      |         | Analysis Date: 25-Aug-2014 15:02 |                                                 |
| Client ID: WW-EAST | Run ID: HG03_239786         | SeqNo: 2979249   |         | PrepDate: 25-Aug-2014            | DF: 1                                           |
| Analyte            | Result                      | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Mercury            | ND                          | 0.000200         |         | -0.000007                        | 0 20                                            |

The following samples were analyzed in this batch:

|               |               |               |               |
|---------------|---------------|---------------|---------------|
| HS14080845-01 | HS14080845-02 | HS14080845-03 | HS14080845-04 |
| HS14080845-05 | HS14080845-06 | HS14080845-07 | HS14080845-08 |
| HS14080845-09 | HS14080845-10 | HS14080845-11 | HS14080845-12 |
| HS14080845-13 | HS14080845-17 | HS14080845-18 | HS14080845-19 |
| HS14080845-20 | HS14080845-21 | HS14080845-22 | HS14080845-23 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85499 |                               | Instrument: ICPMS05   |         | Method: SW6020 (DISSOLVED)              |      |               |               |      |                |
|-----------------|-------------------------------|-----------------------|---------|-----------------------------------------|------|---------------|---------------|------|----------------|
| <b>MBLK</b>     | Sample ID: <b>MBLK-85499</b>  | Units: <b>mg/L</b>    |         | Analysis Date: <b>04-Sep-2014 17:38</b> |      |               |               |      |                |
| Client ID:      | Run ID: <b>ICPMS05_240353</b> | SeqNo: <b>2991940</b> |         | PrepDate: <b>26-Aug-2014</b>            |      | DF: <b>1</b>  |               |      |                |
| Analyte         | Result                        | PQL                   | SPK Val | SPK Ref Value                           | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |
| Aluminum        | ND                            | 0.0100                |         |                                         |      |               |               |      |                |
| Arsenic         | ND                            | 0.00500               |         |                                         |      |               |               |      |                |
| Barium          | ND                            | 0.00500               |         |                                         |      |               |               |      |                |
| Cadmium         | ND                            | 0.00200               |         |                                         |      |               |               |      |                |
| Calcium         | ND                            | 0.500                 |         |                                         |      |               |               |      |                |
| Chromium        | ND                            | 0.00500               |         |                                         |      |               |               |      |                |
| Cobalt          | ND                            | 0.00500               |         |                                         |      |               |               |      |                |
| Copper          | ND                            | 0.00500               |         |                                         |      |               |               |      |                |
| Iron            | ND                            | 0.200                 |         |                                         |      |               |               |      |                |
| Lead            | ND                            | 0.00500               |         |                                         |      |               |               |      |                |
| Magnesium       | ND                            | 0.200                 |         |                                         |      |               |               |      |                |
| Manganese       | ND                            | 0.00500               |         |                                         |      |               |               |      |                |
| Molybdenum      | ND                            | 0.00500               |         |                                         |      |               |               |      |                |
| Nickel          | ND                            | 0.00500               |         |                                         |      |               |               |      |                |
| Potassium       | ND                            | 0.200                 |         |                                         |      |               |               |      |                |
| Selenium        | ND                            | 0.00500               |         |                                         |      |               |               |      |                |
| Silver          | ND                            | 0.00500               |         |                                         |      |               |               |      |                |
| Sodium          | ND                            | 0.200                 |         |                                         |      |               |               |      |                |
| Uranium         | ND                            | 0.00500               |         |                                         |      |               |               |      |                |
| Zinc            | ND                            | 0.00500               |         |                                         |      |               |               |      |                |

| <b>MBLK</b> | Sample ID: <b>MBLK-85499</b>  | Units: <b>mg/L</b>    |         | Analysis Date: <b>05-Sep-2014 11:31</b> |      |               |               |      |                |
|-------------|-------------------------------|-----------------------|---------|-----------------------------------------|------|---------------|---------------|------|----------------|
| Client ID:  | Run ID: <b>ICPMS05_240400</b> | SeqNo: <b>2992585</b> |         | PrepDate: <b>26-Aug-2014</b>            |      | DF: <b>1</b>  |               |      |                |
| Analyte     | Result                        | PQL                   | SPK Val | SPK Ref Value                           | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |
| Boron       | ND                            | 0.0500                |         |                                         |      |               |               |      |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85499 |                               | Instrument: ICPMS05 |                       | Method: SW6020 (DISSOLVED) |                                         |               |               |      |                |
|-----------------|-------------------------------|---------------------|-----------------------|----------------------------|-----------------------------------------|---------------|---------------|------|----------------|
| <b>LCS</b>      | Sample ID: <b>MLCS-85499</b>  | Units: <b>mg/L</b>  |                       |                            | Analysis Date: <b>04-Sep-2014 17:41</b> |               |               |      |                |
| Client ID:      | Run ID: <b>ICPMS05_240353</b> |                     | SeqNo: <b>2991941</b> |                            | PrepDate: <b>26-Aug-2014</b>            |               | DF: <b>1</b>  |      |                |
| Analyte         | Result                        | PQL                 | SPK Val               | SPK Ref Value              | %REC                                    | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |
| Aluminum        | 0.1026                        | 0.0100              | 0.1                   | 0                          | 103                                     | 80 - 120      |               |      |                |
| Arsenic         | 0.04969                       | 0.00500             | 0.05                  | 0                          | 99.4                                    | 80 - 120      |               |      |                |
| Barium          | 0.04919                       | 0.00500             | 0.05                  | 0                          | 98.4                                    | 80 - 120      |               |      |                |
| Cadmium         | 0.04894                       | 0.00200             | 0.05                  | 0                          | 97.9                                    | 80 - 120      |               |      |                |
| Calcium         | 4.801                         | 0.500               | 5                     | 0                          | 96.0                                    | 80 - 120      |               |      |                |
| Chromium        | 0.04805                       | 0.00500             | 0.05                  | 0                          | 96.1                                    | 80 - 120      |               |      |                |
| Cobalt          | 0.04855                       | 0.00500             | 0.05                  | 0                          | 97.1                                    | 80 - 120      |               |      |                |
| Copper          | 0.04796                       | 0.00500             | 0.05                  | 0                          | 95.9                                    | 80 - 120      |               |      |                |
| Iron            | 4.74                          | 0.200               | 5                     | 0                          | 94.8                                    | 80 - 120      |               |      |                |
| Lead            | 0.04864                       | 0.00500             | 0.05                  | 0                          | 97.3                                    | 80 - 120      |               |      |                |
| Magnesium       | 4.933                         | 0.200               | 5                     | 0                          | 98.7                                    | 80 - 120      |               |      |                |
| Manganese       | 0.04572                       | 0.00500             | 0.05                  | 0                          | 91.4                                    | 80 - 120      |               |      |                |
| Molybdenum      | 0.04939                       | 0.00500             | 0.05                  | 0                          | 98.8                                    | 80 - 120      |               |      |                |
| Nickel          | 0.04732                       | 0.00500             | 0.05                  | 0                          | 94.6                                    | 80 - 120      |               |      |                |
| Potassium       | 5.028                         | 0.200               | 5                     | 0                          | 101                                     | 80 - 120      |               |      |                |
| Selenium        | 0.05016                       | 0.00500             | 0.05                  | 0                          | 100                                     | 80 - 120      |               |      |                |
| Silver          | 0.05105                       | 0.00500             | 0.05                  | 0                          | 102                                     | 80 - 120      |               |      |                |
| Sodium          | 4.859                         | 0.200               | 5                     | 0                          | 97.2                                    | 80 - 120      |               |      |                |
| Uranium         | 0.08036                       | 0.00500             | 0.1                   | 0                          | 80.4                                    | 80 - 120      |               |      |                |
| Zinc            | 0.04985                       | 0.00500             | 0.05                  | 0                          | 99.7                                    | 80 - 120      |               |      |                |

| <b>LCS</b> | Sample ID: <b>MLCS-85499</b>  | Units: <b>mg/L</b> |                       |               | Analysis Date: <b>05-Sep-2014 11:33</b> |               |               |      |                |
|------------|-------------------------------|--------------------|-----------------------|---------------|-----------------------------------------|---------------|---------------|------|----------------|
| Client ID: | Run ID: <b>ICPMS05_240400</b> |                    | SeqNo: <b>2992586</b> |               | PrepDate: <b>26-Aug-2014</b>            |               | DF: <b>1</b>  |      |                |
| Analyte    | Result                        | PQL                | SPK Val               | SPK Ref Value | %REC                                    | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |
| Boron      | 0.2009                        | 0.0500             | 0.25                  | 0             | 80.3                                    | 80 - 120      |               |      |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85499 |                            | Instrument: ICPMS05 |         | Method: SW6020 (DISSOLVED)       |      |               |               |      |                |
|-----------------|----------------------------|---------------------|---------|----------------------------------|------|---------------|---------------|------|----------------|
| <b>MS</b>       | Sample ID: HS14080747-03MS | Units: mg/L         |         | Analysis Date: 04-Sep-2014 17:56 |      |               |               |      |                |
| Client ID:      | Run ID: ICPMS05_240353     | SeqNo: 2991947      |         | PrepDate: 26-Aug-2014            |      | DF: 1         |               |      |                |
| Analyte         | Result                     | PQL                 | SPK Val | SPK Ref Value                    | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |
| Aluminum        | 0.1552                     | 0.0100              | 0.05    | 0.1484                           | 13.4 | 75 - 125      |               |      | S              |
| Arsenic         | 0.05289                    | 0.00500             | 0.05    | 0.002539                         | 101  | 75 - 125      |               |      |                |
| Barium          | 0.1708                     | 0.00500             | 0.05    | 0.123                            | 95.6 | 75 - 125      |               |      |                |
| Cadmium         | 0.049                      | 0.00200             | 0.05    | 0                                | 98.0 | 75 - 125      |               |      |                |
| Calcium         | 82.94                      | 0.500               | 5       | 79.41                            | 70.6 | 75 - 125      |               |      | SO             |
| Chromium        | 0.05206                    | 0.00500             | 0.05    | 0.007436                         | 89.3 | 75 - 125      |               |      |                |
| Cobalt          | 0.04772                    | 0.00500             | 0.05    | 0                                | 95.4 | 75 - 125      |               |      |                |
| Copper          | 0.0466                     | 0.00500             | 0.05    | 0                                | 93.2 | 75 - 125      |               |      |                |
| Iron            | 4.715                      | 0.200               | 5       | 0.1017                           | 92.3 | 75 - 125      |               |      |                |
| Lead            | 0.0488                     | 0.00500             | 0.05    | 0                                | 97.6 | 75 - 125      |               |      |                |
| Magnesium       | 14.33                      | 0.200               | 5       | 9.737                            | 91.9 | 75 - 125      |               |      |                |
| Manganese       | 0.04983                    | 0.00500             | 0.05    | 0.005316                         | 89.0 | 75 - 125      |               |      |                |
| Molybdenum      | 0.05093                    | 0.00500             | 0.05    | 0.00245                          | 97.0 | 75 - 125      |               |      |                |
| Nickel          | 0.05217                    | 0.00500             | 0.05    | 0.004967                         | 94.4 | 75 - 125      |               |      |                |
| Potassium       | 7.324                      | 0.200               | 5       | 2.575                            | 95.0 | 75 - 125      |               |      |                |
| Selenium        | 0.05269                    | 0.00500             | 0.05    | 0                                | 105  | 75 - 125      |               |      |                |
| Silver          | 0.04975                    | 0.00500             | 0.05    | 0                                | 99.5 | 75 - 125      |               |      |                |
| Sodium          | 66.42                      | 0.200               | 5       | 59.05                            | 147  | 75 - 125      |               |      | SO             |
| Uranium         | 0.0925                     | 0.00500             | 0.1     | 0.005351                         | 87.1 | 75 - 125      |               |      |                |
| Zinc            | 0.05334                    | 0.00500             | 0.05    | 0.006259                         | 94.2 | 75 - 125      |               |      |                |

| <b>MS</b>  | Sample ID: HS14080747-03MS | Units: mg/L    |         | Analysis Date: 05-Sep-2014 11:49 |      |               |               |      |                |
|------------|----------------------------|----------------|---------|----------------------------------|------|---------------|---------------|------|----------------|
| Client ID: | Run ID: ICPMS05_240400     | SeqNo: 2992592 |         | PrepDate: 26-Aug-2014            |      | DF: 1         |               |      |                |
| Analyte    | Result                     | PQL            | SPK Val | SPK Ref Value                    | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |
| Boron      | 0.323                      | 0.0500         | 0.5     | -0.2086                          | 106  | 75 - 125      |               |      |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85499 |                                    | Instrument: ICPMS05   |         | Method: SW6020 (DISSOLVED)              |       |               |               |        |           |      |
|-----------------|------------------------------------|-----------------------|---------|-----------------------------------------|-------|---------------|---------------|--------|-----------|------|
| <b>MSD</b>      | Sample ID: <b>HS14080747-03MSD</b> | Units: <b>mg/L</b>    |         | Analysis Date: <b>04-Sep-2014 17:59</b> |       |               |               |        |           |      |
| Client ID:      | Run ID: <b>ICPMS05_240353</b>      | SeqNo: <b>2991948</b> |         | PrepDate: <b>26-Aug-2014</b>            |       | DF: <b>1</b>  |               |        |           |      |
| Analyte         | Result                             | PQL                   | SPK Val | SPK Ref Value                           | %REC  | Control Limit | RPD Ref Value | %RPD   | RPD Limit | Qual |
| Aluminum        | 0.1223                             | 0.0100                | 0.05    | 0.1484                                  | -52.3 | 75 - 125      | 0.1552        | 23.7   | 20        | SR   |
| Arsenic         | 0.05072                            | 0.00500               | 0.05    | 0.002539                                | 96.4  | 75 - 125      | 0.05289       | 4.19   | 20        |      |
| Barium          | 0.1593                             | 0.00500               | 0.05    | 0.123                                   | 72.6  | 75 - 125      | 0.1708        | 6.96   | 20        | S    |
| Cadmium         | 0.04846                            | 0.00200               | 0.05    | -0.000011                               | 96.9  | 75 - 125      | 0.049         | 1.12   | 20        |      |
| Calcium         | 83.01                              | 0.500                 | 5       | 79.41                                   | 72.1  | 75 - 125      | 82.94         | 0.0883 | 20        | SO   |
| Chromium        | 0.0486                             | 0.00500               | 0.05    | 0.007436                                | 82.3  | 75 - 125      | 0.05206       | 6.89   | 20        |      |
| Cobalt          | 0.04551                            | 0.00500               | 0.05    | 0.000214                                | 90.6  | 75 - 125      | 0.04772       | 4.74   | 20        |      |
| Copper          | 0.04574                            | 0.00500               | 0.05    | 0.000866                                | 89.8  | 75 - 125      | 0.0466        | 1.85   | 20        |      |
| Iron            | 4.429                              | 0.200                 | 5       | 0.1017                                  | 86.5  | 75 - 125      | 4.715         | 6.27   | 20        |      |
| Lead            | 0.04798                            | 0.00500               | 0.05    | -0.000421                               | 96.8  | 75 - 125      | 0.0488        | 1.71   | 20        |      |
| Magnesium       | 14.11                              | 0.200                 | 5       | 9.737                                   | 87.5  | 75 - 125      | 14.33         | 1.55   | 20        |      |
| Manganese       | 0.04702                            | 0.00500               | 0.05    | 0.005316                                | 83.4  | 75 - 125      | 0.04983       | 5.79   | 20        |      |
| Molybdenum      | 0.05134                            | 0.00500               | 0.05    | 0.00245                                 | 97.8  | 75 - 125      | 0.05093       | 0.802  | 20        |      |
| Nickel          | 0.0497                             | 0.00500               | 0.05    | 0.004967                                | 89.5  | 75 - 125      | 0.05217       | 4.85   | 20        |      |
| Potassium       | 7.389                              | 0.200                 | 5       | 2.575                                   | 96.3  | 75 - 125      | 7.324         | 0.887  | 20        |      |
| Selenium        | 0.05006                            | 0.00500               | 0.05    | 0.000256                                | 99.6  | 75 - 125      | 0.05269       | 5.12   | 20        |      |
| Silver          | 0.04923                            | 0.00500               | 0.05    | 0.000042                                | 98.4  | 75 - 125      | 0.04975       | 1.05   | 20        |      |
| Sodium          | 63.07                              | 0.200                 | 5       | 59.05                                   | 80.3  | 75 - 125      | 66.42         | 5.17   | 20        | O    |
| Uranium         | 0.09312                            | 0.00500               | 0.1     | 0.005351                                | 87.8  | 75 - 125      | 0.0925        | 0.667  | 20        |      |
| Zinc            | 0.05263                            | 0.00500               | 0.05    | 0.006259                                | 92.8  | 75 - 125      | 0.05334       | 1.33   | 20        |      |

| <b>MSD</b> | Sample ID: <b>HS14080747-03MSD</b> | Units: <b>mg/L</b>    |         | Analysis Date: <b>05-Sep-2014 11:51</b> |      |               |               |      |           |      |
|------------|------------------------------------|-----------------------|---------|-----------------------------------------|------|---------------|---------------|------|-----------|------|
| Client ID: | Run ID: <b>ICPMS05_240400</b>      | SeqNo: <b>2992593</b> |         | PrepDate: <b>26-Aug-2014</b>            |      | DF: <b>1</b>  |               |      |           |      |
| Analyte    | Result                             | PQL                   | SPK Val | SPK Ref Value                           | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Boron      | 0.3273                             | 0.0500                | 0.5     | -0.2086                                 | 107  | 75 - 125      | 0.323         | 1.33 | 20        |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85499 |                             | Instrument: ICPMS05 |         | Method: SW6020 (DISSOLVED)       |      |               |               |       |                |
|-----------------|-----------------------------|---------------------|---------|----------------------------------|------|---------------|---------------|-------|----------------|
| <b>DUP</b>      | Sample ID: HS14080747-03DUP | Units: mg/L         |         | Analysis Date: 04-Sep-2014 17:51 |      |               |               |       |                |
| Client ID:      | Run ID: ICPMS05_240353      | SeqNo: 2991945      |         | PrepDate: 26-Aug-2014            |      | DF: 1         |               |       |                |
| Analyte         | Result                      | PQL                 | SPK Val | SPK Ref Value                    | %REC | Control Limit | RPD Ref Value | %RPD  | RPD Limit Qual |
| Aluminum        | 0.15                        | 0.0100              |         |                                  |      |               | 0.1484        | 1.06  | 20             |
| Arsenic         | ND                          | 0.00500             |         |                                  |      |               | 0.002539      | 0     | 20             |
| Barium          | 0.1183                      | 0.00500             |         |                                  |      |               | 0.123         | 3.86  | 20             |
| Cadmium         | ND                          | 0.00200             |         |                                  |      |               | -0.000011     | 0     | 20             |
| Calcium         | 80.31                       | 0.500               |         |                                  |      |               | 79.41         | 1.13  | 20             |
| Chromium        | 0.007891                    | 0.00500             |         |                                  |      |               | 0.007436      | 5.94  | 20             |
| Cobalt          | ND                          | 0.00500             |         |                                  |      |               | 0.000214      | 0     | 20             |
| Copper          | ND                          | 0.00500             |         |                                  |      |               | 0.000866      | 0     | 20             |
| Iron            | ND                          | 0.200               |         |                                  |      |               | 0.1017        | 0     | 20             |
| Lead            | ND                          | 0.00500             |         |                                  |      |               | -0.000421     | 0     | 20             |
| Magnesium       | 9.47                        | 0.200               |         |                                  |      |               | 9.737         | 2.77  | 20             |
| Manganese       | 0.005067                    | 0.00500             |         |                                  |      |               | 0.005316      | 4.8   | 20             |
| Molybdenum      | ND                          | 0.00500             |         |                                  |      |               | 0.00245       | 0     | 20             |
| Nickel          | 0.006072                    | 0.00500             |         |                                  |      |               | 0.004967      | 20    | 20 R           |
| Potassium       | 2.587                       | 0.200               |         |                                  |      |               | 2.575         | 0.453 | 20             |
| Selenium        | ND                          | 0.00500             |         |                                  |      |               | 0.000256      | 0     | 20             |
| Silver          | ND                          | 0.00500             |         |                                  |      |               | 0.000042      | 0     | 20             |
| Sodium          | 59.18                       | 0.200               |         |                                  |      |               | 59.05         | 0.21  | 20             |
| Uranium         | 0.005287                    | 0.00500             |         |                                  |      |               | 0.005351      | 1.2   | 20             |
| Zinc            | 0.00663                     | 0.00500             |         |                                  |      |               | 0.006259      | 5.76  | 20             |

| <b>DUP</b> | Sample ID: HS14080747-03DUP | Units: mg/L    |         | Analysis Date: 05-Sep-2014 11:38 |      |               |               |      |                |
|------------|-----------------------------|----------------|---------|----------------------------------|------|---------------|---------------|------|----------------|
| Client ID: | Run ID: ICPMS05_240400      | SeqNo: 2992588 |         | PrepDate: 26-Aug-2014            |      | DF: 1         |               |      |                |
| Analyte    | Result                      | PQL            | SPK Val | SPK Ref Value                    | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |
| Boron      | ND                          | 0.0500         |         |                                  |      |               | -0.2086       | 0    | 20             |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85499 |         | Instrument: ICPMS05        |         | Method: SW6020 (DISSOLVED) |      |                                  |               |       |                |
|-----------------|---------|----------------------------|---------|----------------------------|------|----------------------------------|---------------|-------|----------------|
| <b>PDS</b>      |         | Sample ID: HS14080747-03BS |         | Units: mg/L                |      | Analysis Date: 04-Sep-2014 18:01 |               |       |                |
| Client ID:      |         | Run ID: ICPMS05_240353     |         | SeqNo: 2991949             |      | PrepDate: 26-Aug-2014            |               | DF: 1 |                |
| Analyte         | Result  | PQL                        | SPK Val | SPK Ref Value              | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit Qual |
| Aluminum        | 0.2323  | 0.0100                     | 0.1     | 0.1484                     | 83.9 | 75 - 125                         |               |       |                |
| Arsenic         | 0.09112 | 0.00500                    | 0.1     | 0.002539                   | 88.6 | 75 - 125                         |               |       |                |
| Barium          | 0.1995  | 0.00500                    | 0.1     | 0.123                      | 76.5 | 75 - 125                         |               |       |                |
| Cadmium         | 0.0884  | 0.00200                    | 0.1     | -0.000011                  | 88.4 | 75 - 125                         |               |       |                |
| Calcium         | 82.73   | 0.500                      | 10      | 79.41                      | 33.2 | 75 - 125                         |               |       | SO             |
| Chromium        | 0.09452 | 0.00500                    | 0.1     | 0.007436                   | 87.1 | 75 - 125                         |               |       |                |
| Cobalt          | 0.08523 | 0.00500                    | 0.1     | 0.000214                   | 85.0 | 75 - 125                         |               |       |                |
| Copper          | 0.08563 | 0.00500                    | 0.1     | 0.000866                   | 84.8 | 75 - 125                         |               |       |                |
| Iron            | 8.426   | 0.200                      | 10      | 0.1017                     | 83.2 | 75 - 125                         |               |       |                |
| Lead            | 0.08714 | 0.00500                    | 0.1     | -0.000421                  | 87.6 | 75 - 125                         |               |       |                |
| Magnesium       | 17.1    | 0.200                      | 10      | 9.737                      | 73.6 | 75 - 125                         |               |       | S              |
| Manganese       | 0.09099 | 0.00500                    | 0.1     | 0.005316                   | 85.7 | 75 - 125                         |               |       |                |
| Molybdenum      | 0.0883  | 0.00500                    | 0.1     | 0.00245                    | 85.9 | 75 - 125                         |               |       |                |
| Nickel          | 0.09141 | 0.00500                    | 0.1     | 0.004967                   | 86.4 | 75 - 125                         |               |       |                |
| Potassium       | 10.99   | 0.200                      | 10      | 2.575                      | 84.1 | 75 - 125                         |               |       |                |
| Selenium        | 0.09247 | 0.00500                    | 0.1     | 0.000256                   | 92.2 | 75 - 125                         |               |       |                |
| Silver          | 0.08857 | 0.00500                    | 0.1     | 0.000042                   | 88.5 | 75 - 125                         |               |       |                |
| Sodium          | 64.69   | 0.200                      | 10      | 59.05                      | 56.4 | 75 - 125                         |               |       | SO             |
| Uranium         | 0.09816 | 0.00500                    | 0.1     | 0.005351                   | 92.8 | 75 - 125                         |               |       |                |
| Zinc            | 0.0946  | 0.00500                    | 0.1     | 0.006259                   | 88.3 | 75 - 125                         |               |       |                |

|            |        |                            |         |                |      |                                  |               |       |                |
|------------|--------|----------------------------|---------|----------------|------|----------------------------------|---------------|-------|----------------|
| <b>PDS</b> |        | Sample ID: HS14080747-03BS |         | Units: mg/L    |      | Analysis Date: 05-Sep-2014 11:54 |               |       |                |
| Client ID: |        | Run ID: ICPMS05_240400     |         | SeqNo: 2992594 |      | PrepDate: 26-Aug-2014            |               | DF: 1 |                |
| Analyte    | Result | PQL                        | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit Qual |
| Boron      | 0.8011 | 0.0500                     | 1       | 0              | 80.1 | 75 - 125                         |               |       |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85499 |                                        | Instrument: ICPMS05   |         | Method: SW6020 (DISSOLVED)              |      |               |               |       |                |
|-----------------|----------------------------------------|-----------------------|---------|-----------------------------------------|------|---------------|---------------|-------|----------------|
| <b>SD</b>       | Sample ID: <b>HS14080747-03 DIL SX</b> | Units: <b>mg/L</b>    |         | Analysis Date: <b>04-Sep-2014 17:54</b> |      |               |               |       |                |
| Client ID:      | Run ID: <b>ICPMS05_240353</b>          | SeqNo: <b>2991946</b> |         | PrepDate: <b>26-Aug-2014</b>            |      | DF: <b>5</b>  |               |       |                |
| Analyte         | Result                                 | PQL                   | SPK Val | SPK Ref Value                           | %REC | Control Limit | RPD Ref Value | %RPD  | RPD Limit Qual |
| Aluminum        | 0.1687                                 | 0.0500                |         |                                         |      |               | 0.1484        | 13.6  | 10 R           |
| Arsenic         | ND                                     | 0.0250                |         |                                         |      |               | 0.002539      | 0     | 10             |
| Barium          | 0.119                                  | 0.0250                |         |                                         |      |               | 0.123         | 3.28  | 10             |
| Cadmium         | ND                                     | 0.0100                |         |                                         |      |               | -0.000011     | 0     | 10             |
| Calcium         | 79.71                                  | 2.50                  |         |                                         |      |               | 79.41         | 0.381 | 10             |
| Chromium        | 0.006407                               | 0.0250                |         |                                         |      |               | 0.007436      | 0     | 10 J           |
| Cobalt          | ND                                     | 0.0250                |         |                                         |      |               | 0.000214      | 0     | 10             |
| Copper          | ND                                     | 0.0250                |         |                                         |      |               | 0.000866      | 0     | 10             |
| Iron            | ND                                     | 1.00                  |         |                                         |      |               | 0.1017        | 0     | 10             |
| Lead            | ND                                     | 0.0250                |         |                                         |      |               | -0.000421     | 0     | 10             |
| Magnesium       | 9.818                                  | 1.00                  |         |                                         |      |               | 9.737         | 0.833 | 10             |
| Manganese       | ND                                     | 0.0250                |         |                                         |      |               | 0.005316      | 0     | 10             |
| Molybdenum      | ND                                     | 0.0250                |         |                                         |      |               | 0.00245       | 0     | 10             |
| Nickel          | ND                                     | 0.0250                |         |                                         |      |               | 0.004967      | 0     | 10             |
| Potassium       | 2.734                                  | 1.00                  |         |                                         |      |               | 2.575         | 6.17  | 10             |
| Selenium        | ND                                     | 0.0250                |         |                                         |      |               | 0.000256      | 0     | 10             |
| Silver          | ND                                     | 0.0250                |         |                                         |      |               | 0.000042      | 0     | 10             |
| Sodium          | 59.95                                  | 1.00                  |         |                                         |      |               | 59.05         | 1.52  | 10             |
| Uranium         | ND                                     | 0.0250                |         |                                         |      |               | 0.005351      | 0     | 10             |
| Zinc            | ND                                     | 0.0250                |         |                                         |      |               | 0.006259      | 0     | 10             |

| <b>SD</b>  | Sample ID: <b>HS14080747-03 DIL SX</b> | Units: <b>mg/L</b>    |         | Analysis Date: <b>05-Sep-2014 11:46</b> |      |               |               |      |                |
|------------|----------------------------------------|-----------------------|---------|-----------------------------------------|------|---------------|---------------|------|----------------|
| Client ID: | Run ID: <b>ICPMS05_240400</b>          | SeqNo: <b>2992591</b> |         | PrepDate: <b>26-Aug-2014</b>            |      | DF: <b>5</b>  |               |      |                |
| Analyte    | Result                                 | PQL                   | SPK Val | SPK Ref Value                           | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |
| Boron      | ND                                     | 0.250                 |         |                                         |      |               | -0.2086       | 0    | 10             |

The following samples were analyzed in this batch:

|               |               |               |               |
|---------------|---------------|---------------|---------------|
| HS14080845-01 | HS14080845-02 | HS14080845-03 | HS14080845-04 |
| HS14080845-05 | HS14080845-06 | HS14080845-07 | HS14080845-08 |
| HS14080845-09 | HS14080845-10 | HS14080845-11 | HS14080845-12 |
| HS14080845-13 | HS14080845-14 | HS14080845-15 | HS14080845-16 |
| HS14080845-17 | HS14080845-18 | HS14080845-19 |               |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85523 |                               | Instrument: ICPMS05 |                       | Method: SW6020 (DISSOLVED)              |                              |               |               |      |           |      |
|-----------------|-------------------------------|---------------------|-----------------------|-----------------------------------------|------------------------------|---------------|---------------|------|-----------|------|
| <b>MBLK</b>     | Sample ID: <b>MBLK-85523</b>  | Units: <b>mg/L</b>  |                       | Analysis Date: <b>04-Sep-2014 21:38</b> |                              |               |               |      |           |      |
| Client ID:      | Run ID: <b>ICPMS05_240353</b> |                     | SeqNo: <b>2992035</b> |                                         | PrepDate: <b>27-Aug-2014</b> |               | DF: <b>1</b>  |      |           |      |
| Analyte         | Result                        | PQL                 | SPK Val               | SPK Ref Value                           | %REC                         | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| Aluminum        | ND                            | 0.0100              |                       |                                         |                              |               |               |      |           |      |
| Arsenic         | ND                            | 0.00500             |                       |                                         |                              |               |               |      |           |      |
| Barium          | ND                            | 0.00500             |                       |                                         |                              |               |               |      |           |      |
| Boron           | ND                            | 0.0500              |                       |                                         |                              |               |               |      |           |      |
| Cadmium         | ND                            | 0.00200             |                       |                                         |                              |               |               |      |           |      |
| Calcium         | ND                            | 0.500               |                       |                                         |                              |               |               |      |           |      |
| Chromium        | ND                            | 0.00500             |                       |                                         |                              |               |               |      |           |      |
| Cobalt          | ND                            | 0.00500             |                       |                                         |                              |               |               |      |           |      |
| Copper          | ND                            | 0.00500             |                       |                                         |                              |               |               |      |           |      |
| Iron            | ND                            | 0.200               |                       |                                         |                              |               |               |      |           |      |
| Lead            | ND                            | 0.00500             |                       |                                         |                              |               |               |      |           |      |
| Magnesium       | ND                            | 0.200               |                       |                                         |                              |               |               |      |           |      |
| Manganese       | ND                            | 0.00500             |                       |                                         |                              |               |               |      |           |      |
| Molybdenum      | ND                            | 0.00500             |                       |                                         |                              |               |               |      |           |      |
| Nickel          | ND                            | 0.00500             |                       |                                         |                              |               |               |      |           |      |
| Potassium       | ND                            | 0.200               |                       |                                         |                              |               |               |      |           |      |
| Selenium        | ND                            | 0.00500             |                       |                                         |                              |               |               |      |           |      |
| Silver          | ND                            | 0.00500             |                       |                                         |                              |               |               |      |           |      |
| Sodium          | ND                            | 0.200               |                       |                                         |                              |               |               |      |           |      |
| Uranium         | ND                            | 0.00500             |                       |                                         |                              |               |               |      |           |      |
| Zinc            | ND                            | 0.00500             |                       |                                         |                              |               |               |      |           |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85523 |                               | Instrument: ICPMS05 |                       | Method: SW6020 (DISSOLVED) |                                         |               |               |      |                |
|-----------------|-------------------------------|---------------------|-----------------------|----------------------------|-----------------------------------------|---------------|---------------|------|----------------|
| <b>LCS</b>      | Sample ID: <b>MLCS-85523</b>  | Units: <b>mg/L</b>  |                       |                            | Analysis Date: <b>04-Sep-2014 21:41</b> |               |               |      |                |
| Client ID:      | Run ID: <b>ICPMS05_240353</b> |                     | SeqNo: <b>2992036</b> |                            | PrepDate: <b>27-Aug-2014</b>            |               | DF: <b>1</b>  |      |                |
| Analyte         | Result                        | PQL                 | SPK Val               | SPK Ref Value              | %REC                                    | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |
| Aluminum        | 0.1016                        | 0.0100              | 0.1                   | 0                          | 102                                     | 80 - 120      |               |      |                |
| Arsenic         | 0.05147                       | 0.00500             | 0.05                  | 0                          | 103                                     | 80 - 120      |               |      |                |
| Barium          | 0.04981                       | 0.00500             | 0.05                  | 0                          | 99.6                                    | 80 - 120      |               |      |                |
| Boron           | 0.2643                        | 0.0500              | 0.25                  | 0                          | 106                                     | 80 - 120      |               |      |                |
| Cadmium         | 0.05079                       | 0.00200             | 0.05                  | 0                          | 102                                     | 80 - 120      |               |      |                |
| Calcium         | 4.85                          | 0.500               | 5                     | 0                          | 97.0                                    | 80 - 120      |               |      |                |
| Chromium        | 0.04939                       | 0.00500             | 0.05                  | 0                          | 98.8                                    | 80 - 120      |               |      |                |
| Cobalt          | 0.05014                       | 0.00500             | 0.05                  | 0                          | 100                                     | 80 - 120      |               |      |                |
| Copper          | 0.04924                       | 0.00500             | 0.05                  | 0                          | 98.5                                    | 80 - 120      |               |      |                |
| Iron            | 4.689                         | 0.200               | 5                     | 0                          | 93.8                                    | 80 - 120      |               |      |                |
| Lead            | 0.04851                       | 0.00500             | 0.05                  | 0                          | 97.0                                    | 80 - 120      |               |      |                |
| Magnesium       | 4.695                         | 0.200               | 5                     | 0                          | 93.9                                    | 80 - 120      |               |      |                |
| Manganese       | 0.04882                       | 0.00500             | 0.05                  | 0                          | 97.6                                    | 80 - 120      |               |      |                |
| Molybdenum      | 0.0497                        | 0.00500             | 0.05                  | 0                          | 99.4                                    | 80 - 120      |               |      |                |
| Nickel          | 0.04995                       | 0.00500             | 0.05                  | 0                          | 99.9                                    | 80 - 120      |               |      |                |
| Potassium       | 4.943                         | 0.200               | 5                     | 0                          | 98.9                                    | 80 - 120      |               |      |                |
| Selenium        | 0.05096                       | 0.00500             | 0.05                  | 0                          | 102                                     | 80 - 120      |               |      |                |
| Silver          | 0.05041                       | 0.00500             | 0.05                  | 0                          | 101                                     | 80 - 120      |               |      |                |
| Sodium          | 4.595                         | 0.200               | 5                     | 0                          | 91.9                                    | 80 - 120      |               |      |                |
| Uranium         | 0.08298                       | 0.00500             | 0.1                   | 0                          | 83.0                                    | 80 - 120      |               |      |                |
| Zinc            | 0.04847                       | 0.00500             | 0.05                  | 0                          | 96.9                                    | 80 - 120      |               |      |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85523           |         | Instrument: ICPMS05               |         | Method: SW6020 (DISSOLVED) |      |                                         |               |              |                |
|---------------------------|---------|-----------------------------------|---------|----------------------------|------|-----------------------------------------|---------------|--------------|----------------|
| <b>MS</b>                 |         | Sample ID: <b>HS14080845-21MS</b> |         | Units: <b>mg/L</b>         |      | Analysis Date: <b>04-Sep-2014 22:15</b> |               |              |                |
| Client ID: <b>WW-EAST</b> |         | Run ID: <b>ICPMS05_240353</b>     |         | SeqNo: <b>2992049</b>      |      | PrepDate: <b>27-Aug-2014</b>            |               | DF: <b>1</b> |                |
| Analyte                   | Result  | PQL                               | SPK Val | SPK Ref Value              | %REC | Control Limit                           | RPD Ref Value | %RPD         | RPD Limit Qual |
| Aluminum                  | 0.1074  | 0.0100                            | 0.1     | 0.006245                   | 101  | 75 - 125                                |               |              |                |
| Arsenic                   | 0.05561 | 0.00500                           | 0.05    | 0.004559                   | 102  | 75 - 125                                |               |              |                |
| Barium                    | 0.1496  | 0.00500                           | 0.05    | 0.1032                     | 92.8 | 75 - 125                                |               |              |                |
| Boron                     | 0.3653  | 0.0500                            | 0.5     | 0                          | 73.1 | 75 - 125                                |               |              | S              |
| Cadmium                   | 0.04963 | 0.00200                           | 0.05    | 0                          | 99.3 | 75 - 125                                |               |              |                |
| Calcium                   | 101.2   | 0.500                             | 5       | 99.82                      | 27.6 | 75 - 125                                |               |              | SO             |
| Chromium                  | 0.06234 | 0.00500                           | 0.05    | 0.01189                    | 101  | 75 - 125                                |               |              |                |
| Cobalt                    | 0.04809 | 0.00500                           | 0.05    | 0                          | 96.2 | 75 - 125                                |               |              |                |
| Copper                    | 0.05029 | 0.00500                           | 0.05    | 0                          | 101  | 75 - 125                                |               |              |                |
| Iron                      | 4.671   | 0.200                             | 5       | 0                          | 93.4 | 75 - 125                                |               |              |                |
| Lead                      | 0.0479  | 0.00500                           | 0.05    | 0                          | 95.8 | 75 - 125                                |               |              |                |
| Magnesium                 | 17.77   | 0.200                             | 5       | 13.54                      | 84.5 | 75 - 125                                |               |              |                |
| Manganese                 | 0.05585 | 0.00500                           | 0.05    | 0.008118                   | 95.5 | 75 - 125                                |               |              |                |
| Molybdenum                | 0.04976 | 0.00500                           | 0.05    | 0.002449                   | 94.6 | 75 - 125                                |               |              |                |
| Nickel                    | 0.04871 | 0.00500                           | 0.05    | 0                          | 97.4 | 75 - 125                                |               |              |                |
| Potassium                 | 6.625   | 0.200                             | 5       | 1.939                      | 93.7 | 75 - 125                                |               |              |                |
| Selenium                  | 0.05602 | 0.00500                           | 0.05    | 0.004502                   | 103  | 75 - 125                                |               |              |                |
| Silver                    | 0.04895 | 0.00500                           | 0.05    | 0                          | 97.9 | 75 - 125                                |               |              |                |
| Sodium                    | 47.83   | 0.200                             | 5       | 44.72                      | 62.2 | 75 - 125                                |               |              | SO             |
| Uranium                   | 0.0853  | 0.00500                           | 0.1     | 0                          | 85.3 | 75 - 125                                |               |              |                |
| Zinc                      | 0.06123 | 0.00500                           | 0.05    | 0.01555                    | 91.4 | 75 - 125                                |               |              |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85523           |         | Instrument: ICPMS05                |         | Method: SW6020 (DISSOLVED) |      |                                         |               |              |                |
|---------------------------|---------|------------------------------------|---------|----------------------------|------|-----------------------------------------|---------------|--------------|----------------|
| <b>MSD</b>                |         | Sample ID: <b>HS14080845-21MSD</b> |         | Units: <b>mg/L</b>         |      | Analysis Date: <b>04-Sep-2014 22:18</b> |               |              |                |
| Client ID: <b>WW-EAST</b> |         | Run ID: <b>ICPMS05_240353</b>      |         | SeqNo: <b>2992050</b>      |      | PrepDate: <b>27-Aug-2014</b>            |               | DF: <b>1</b> |                |
| Analyte                   | Result  | PQL                                | SPK Val | SPK Ref Value              | %REC | Control Limit                           | RPD Ref Value | %RPD         | RPD Limit Qual |
| Aluminum                  | 0.1034  | 0.0100                             | 0.1     | 0.006245                   | 97.1 | 75 - 125                                | 0.1074        | 3.81         | 20             |
| Arsenic                   | 0.05553 | 0.00500                            | 0.05    | 0.004559                   | 102  | 75 - 125                                | 0.05561       | 0.133        | 20             |
| Barium                    | 0.1542  | 0.00500                            | 0.05    | 0.1032                     | 102  | 75 - 125                                | 0.1496        | 3.03         | 20             |
| Boron                     | 0.4069  | 0.0500                             | 0.5     | 0                          | 81.4 | 75 - 125                                | 0.3653        | 10.8         | 20             |
| Cadmium                   | 0.05021 | 0.00200                            | 0.05    | 0                          | 100  | 75 - 125                                | 0.04963       | 1.16         | 20             |
| Calcium                   | 103.2   | 0.500                              | 5       | 99.82                      | 68.3 | 75 - 125                                | 101.2         | 1.99         | 20 SO          |
| Chromium                  | 0.06    | 0.00500                            | 0.05    | 0.01189                    | 96.2 | 75 - 125                                | 0.06234       | 3.82         | 20             |
| Cobalt                    | 0.04649 | 0.00500                            | 0.05    | 0                          | 93.0 | 75 - 125                                | 0.04809       | 3.37         | 20             |
| Copper                    | 0.047   | 0.00500                            | 0.05    | 0                          | 94.0 | 75 - 125                                | 0.05029       | 6.76         | 20             |
| Iron                      | 4.49    | 0.200                              | 5       | 0                          | 89.8 | 75 - 125                                | 4.671         | 3.95         | 20             |
| Lead                      | 0.04825 | 0.00500                            | 0.05    | 0                          | 96.5 | 75 - 125                                | 0.0479        | 0.726        | 20             |
| Magnesium                 | 17.97   | 0.200                              | 5       | 13.54                      | 88.5 | 75 - 125                                | 17.77         | 1.11         | 20             |
| Manganese                 | 0.04953 | 0.00500                            | 0.05    | 0.008118                   | 82.8 | 75 - 125                                | 0.05585       | 12           | 20             |
| Molybdenum                | 0.05004 | 0.00500                            | 0.05    | 0.002449                   | 95.2 | 75 - 125                                | 0.04976       | 0.545        | 20             |
| Nickel                    | 0.04616 | 0.00500                            | 0.05    | 0                          | 92.3 | 75 - 125                                | 0.04871       | 5.39         | 20             |
| Potassium                 | 6.678   | 0.200                              | 5       | 1.939                      | 94.8 | 75 - 125                                | 6.625         | 0.804        | 20             |
| Selenium                  | 0.0537  | 0.00500                            | 0.05    | 0.004502                   | 98.4 | 75 - 125                                | 0.05602       | 4.22         | 20             |
| Silver                    | 0.04777 | 0.00500                            | 0.05    | 0                          | 95.5 | 75 - 125                                | 0.04895       | 2.44         | 20             |
| Sodium                    | 49.65   | 0.200                              | 5       | 44.72                      | 98.5 | 75 - 125                                | 47.83         | 3.72         | 20 O           |
| Uranium                   | 0.08448 | 0.00500                            | 0.1     | 0                          | 84.5 | 75 - 125                                | 0.0853        | 0.973        | 20             |
| Zinc                      | 0.06203 | 0.00500                            | 0.05    | 0.01555                    | 93.0 | 75 - 125                                | 0.06123       | 1.3          | 20             |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85523           |          | Instrument: ICPMS05                |         | Method: SW6020 (DISSOLVED) |      |                                         |               |              |                |
|---------------------------|----------|------------------------------------|---------|----------------------------|------|-----------------------------------------|---------------|--------------|----------------|
| <b>DUP</b>                |          | Sample ID: <b>HS14080845-21DUP</b> |         | Units: <b>mg/L</b>         |      | Analysis Date: <b>04-Sep-2014 22:10</b> |               |              |                |
| Client ID: <b>WW-EAST</b> |          | Run ID: <b>ICPMS05_240353</b>      |         | SeqNo: <b>2992047</b>      |      | PrepDate: <b>27-Aug-2014</b>            |               | DF: <b>1</b> |                |
| Analyte                   | Result   | PQL                                | SPK Val | SPK Ref Value              | %REC | Control Limit                           | RPD Ref Value | %RPD         | RPD Limit Qual |
| Aluminum                  | ND       | 0.0100                             |         |                            |      |                                         | 0.006245      | 0            | 20             |
| Arsenic                   | ND       | 0.00500                            |         |                            |      |                                         | 0.004559      | 0            | 20             |
| Barium                    | 0.1008   | 0.00500                            |         |                            |      |                                         | 0.1032        | 2.38         | 20             |
| Boron                     | ND       | 0.0500                             |         |                            |      |                                         | -0.1232       | 0            | 20             |
| Cadmium                   | ND       | 0.00200                            |         |                            |      |                                         | 0.00001       | 0            | 20             |
| Calcium                   | 99.18    | 0.500                              |         |                            |      |                                         | 99.82         | 0.652        | 20             |
| Chromium                  | 0.01155  | 0.00500                            |         |                            |      |                                         | 0.01189       | 2.9          | 20             |
| Cobalt                    | ND       | 0.00500                            |         |                            |      |                                         | 0.000215      | 0            | 20             |
| Copper                    | ND       | 0.00500                            |         |                            |      |                                         | -0.000269     | 0            | 20             |
| Iron                      | ND       | 0.200                              |         |                            |      |                                         | 0.01749       | 0            | 20             |
| Lead                      | ND       | 0.00500                            |         |                            |      |                                         | 0.000072      | 0            | 20             |
| Magnesium                 | 13.38    | 0.200                              |         |                            |      |                                         | 13.54         | 1.23         | 20             |
| Manganese                 | 0.006393 | 0.00500                            |         |                            |      |                                         | 0.008118      | 23.8         | 20 R           |
| Molybdenum                | ND       | 0.00500                            |         |                            |      |                                         | 0.002449      | 0            | 20             |
| Nickel                    | ND       | 0.00500                            |         |                            |      |                                         | 0.000604      | 0            | 20             |
| Potassium                 | 1.913    | 0.200                              |         |                            |      |                                         | 1.939         | 1.35         | 20             |
| Selenium                  | ND       | 0.00500                            |         |                            |      |                                         | 0.004502      | 0            | 20             |
| Silver                    | ND       | 0.00500                            |         |                            |      |                                         | 0.000055      | 0            | 20             |
| Sodium                    | 44.64    | 0.200                              |         |                            |      |                                         | 44.72         | 0.179        | 20             |
| Uranium                   | ND       | 0.00500                            |         |                            |      |                                         | 0.001868      | 0            | 20             |
| Zinc                      | 0.01102  | 0.00500                            |         |                            |      |                                         | 0.01555       | 34.1         | 20 R           |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85523    |         | Instrument: ICPMS05        |         | Method: SW6020 (DISSOLVED) |      |                                  |               |       |                |
|--------------------|---------|----------------------------|---------|----------------------------|------|----------------------------------|---------------|-------|----------------|
| PDS                |         | Sample ID: HS14080845-21BS |         | Units: mg/L                |      | Analysis Date: 04-Sep-2014 22:20 |               |       |                |
| Client ID: WW-EAST |         | Run ID: ICPMS05_240353     |         | SeqNo: 2992051             |      | PrepDate: 27-Aug-2014            |               | DF: 1 |                |
| Analyte            | Result  | PQL                        | SPK Val | SPK Ref Value              | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit Qual |
| Aluminum           | 0.09625 | 0.0100                     | 0.1     | 0.006245                   | 90.0 | 75 - 125                         |               |       |                |
| Arsenic            | 0.09734 | 0.00500                    | 0.1     | 0.004559                   | 92.8 | 75 - 125                         |               |       |                |
| Barium             | 0.1879  | 0.00500                    | 0.1     | 0.1032                     | 84.8 | 75 - 125                         |               |       |                |
| Boron              | 0.8304  | 0.0500                     | 1       | -0.1232                    | 95.4 | 75 - 125                         |               |       |                |
| Cadmium            | 0.09036 | 0.00200                    | 0.1     | 0.00001                    | 90.3 | 75 - 125                         |               |       |                |
| Calcium            | 100.4   | 0.500                      | 10      | 99.82                      | 5.44 | 75 - 125                         |               |       | SO             |
| Chromium           | 0.1003  | 0.00500                    | 0.1     | 0.01189                    | 88.4 | 75 - 125                         |               |       |                |
| Cobalt             | 0.08416 | 0.00500                    | 0.1     | 0.000215                   | 83.9 | 75 - 125                         |               |       |                |
| Copper             | 0.08464 | 0.00500                    | 0.1     | -0.000269                  | 84.9 | 75 - 125                         |               |       |                |
| Iron               | 8.277   | 0.200                      | 10      | 0.01749                    | 82.6 | 75 - 125                         |               |       |                |
| Lead               | 0.08781 | 0.00500                    | 0.1     | 0.000072                   | 87.7 | 75 - 125                         |               |       |                |
| Magnesium          | 20.91   | 0.200                      | 10      | 13.54                      | 73.7 | 75 - 125                         |               |       | S              |
| Manganese          | 0.09546 | 0.00500                    | 0.1     | 0.008118                   | 87.3 | 75 - 125                         |               |       |                |
| Molybdenum         | 0.08941 | 0.00500                    | 0.1     | 0.002449                   | 87.0 | 75 - 125                         |               |       |                |
| Nickel             | 0.08396 | 0.00500                    | 0.1     | 0.000604                   | 83.4 | 75 - 125                         |               |       |                |
| Potassium          | 10.31   | 0.200                      | 10      | 1.939                      | 83.7 | 75 - 125                         |               |       |                |
| Selenium           | 0.09549 | 0.00500                    | 0.1     | 0.004502                   | 91.0 | 75 - 125                         |               |       |                |
| Silver             | 0.08843 | 0.00500                    | 0.1     | 0.000055                   | 88.4 | 75 - 125                         |               |       |                |
| Sodium             | 50.74   | 0.200                      | 10      | 44.72                      | 60.2 | 75 - 125                         |               |       | SO             |
| Uranium            | 0.08867 | 0.00500                    | 0.1     | 0.001868                   | 86.8 | 75 - 125                         |               |       |                |
| Zinc               | 0.1003  | 0.00500                    | 0.1     | 0.01555                    | 84.7 | 75 - 125                         |               |       |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85523                                    |         | Instrument: ICPMS05             |         | Method: SW6020 (DISSOLVED) |      |                                  |               |               |                |
|----------------------------------------------------|---------|---------------------------------|---------|----------------------------|------|----------------------------------|---------------|---------------|----------------|
| SD                                                 |         | Sample ID: HS14080845-21 DIL SX |         | Units: mg/L                |      | Analysis Date: 04-Sep-2014 22:12 |               |               |                |
| Client ID: WW-EAST                                 |         | Run ID: ICPMS05_240353          |         | SeqNo: 2992048             |      | PrepDate: 27-Aug-2014            |               | DF: 5         |                |
| Analyte                                            | Result  | PQL                             | SPK Val | SPK Ref Value              | %REC | Control Limit                    | RPD Ref Value | %RPD          | RPD Limit Qual |
| Aluminum                                           | ND      | 0.0500                          |         |                            |      |                                  | 0.006245      | 0             | 10             |
| Arsenic                                            | ND      | 0.0250                          |         |                            |      |                                  | 0.004559      | 0             | 10             |
| Barium                                             | 0.09901 | 0.0250                          |         |                            |      |                                  | 0.1032        | 4.04          | 10             |
| Boron                                              | ND      | 0.250                           |         |                            |      |                                  | -0.1232       | 0             | 10             |
| Cadmium                                            | ND      | 0.0100                          |         |                            |      |                                  | 0.00001       | 0             | 10             |
| Calcium                                            | 99.14   | 2.50                            |         |                            |      |                                  | 99.82         | 0.688         | 10             |
| Chromium                                           | 0.01118 | 0.0250                          |         |                            |      |                                  | 0.01189       | 0             | 10 J           |
| Cobalt                                             | ND      | 0.0250                          |         |                            |      |                                  | 0.000215      | 0             | 10             |
| Copper                                             | ND      | 0.0250                          |         |                            |      |                                  | -0.000269     | 0             | 10             |
| Iron                                               | ND      | 1.00                            |         |                            |      |                                  | 0.01749       | 0             | 10             |
| Lead                                               | ND      | 0.0250                          |         |                            |      |                                  | 0.000072      | 0             | 10             |
| Magnesium                                          | 14.27   | 1.00                            |         |                            |      |                                  | 13.54         | 5.37          | 10             |
| Manganese                                          | ND      | 0.0250                          |         |                            |      |                                  | 0.008118      | 0             | 10             |
| Molybdenum                                         | ND      | 0.0250                          |         |                            |      |                                  | 0.002449      | 0             | 10             |
| Nickel                                             | ND      | 0.0250                          |         |                            |      |                                  | 0.000604      | 0             | 10             |
| Potassium                                          | 2.012   | 1.00                            |         |                            |      |                                  | 1.939         | 3.74          | 10             |
| Selenium                                           | 0.00663 | 0.0250                          |         |                            |      |                                  | 0.004502      | 0             | 10 J           |
| Silver                                             | ND      | 0.0250                          |         |                            |      |                                  | 0.000055      | 0             | 10             |
| Sodium                                             | 46.85   | 1.00                            |         |                            |      |                                  | 44.72         | 4.77          | 10             |
| Uranium                                            | ND      | 0.0250                          |         |                            |      |                                  | 0.001868      | 0             | 10             |
| Zinc                                               | ND      | 0.0250                          |         |                            |      |                                  | 0.01555       | 0             | 10             |
| The following samples were analyzed in this batch: |         | HS14080845-20                   |         | HS14080845-21              |      | HS14080845-22                    |               | HS14080845-23 |                |
|                                                    |         | HS14080845-24                   |         | HS14080845-25              |      |                                  |               |               |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85580                                                                                                                           |                             | Instrument: HG03 |         | Method: SW7470                   |                                                 |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|------------------|---------|----------------------------------|-------------------------------------------------|
| <b>MBLK</b>                                                                                                                               | Sample ID: GBLKW4-082814    | Units: mg/L      |         | Analysis Date: 28-Aug-2014 15:48 |                                                 |
| Client ID:                                                                                                                                | Run ID: HG03_240027         | SeqNo: 2985007   |         | PrepDate: 28-Aug-2014            | DF: 1                                           |
| Analyte                                                                                                                                   | Result                      | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Mercury                                                                                                                                   | ND                          | 0.000200         |         |                                  |                                                 |
| <b>LCS</b>                                                                                                                                | Sample ID: GLCSW4-082814    | Units: mg/L      |         | Analysis Date: 28-Aug-2014 15:50 |                                                 |
| Client ID:                                                                                                                                | Run ID: HG03_240027         | SeqNo: 2985008   |         | PrepDate: 28-Aug-2014            | DF: 1                                           |
| Analyte                                                                                                                                   | Result                      | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Mercury                                                                                                                                   | 0.00521                     | 0.000200         | 0.005   | 0 104                            | 80 - 124                                        |
| <b>MS</b>                                                                                                                                 | Sample ID: HS14080801-01MS  | Units: mg/L      |         | Analysis Date: 28-Aug-2014 15:55 |                                                 |
| Client ID:                                                                                                                                | Run ID: HG03_240027         | SeqNo: 2985011   |         | PrepDate: 28-Aug-2014            | DF: 1                                           |
| Analyte                                                                                                                                   | Result                      | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Mercury                                                                                                                                   | 0.00518                     | 0.000200         | 0.005   | 0 104                            | 80 - 124                                        |
| <b>MSD</b>                                                                                                                                | Sample ID: HS14080801-01MSD | Units: mg/L      |         | Analysis Date: 28-Aug-2014 15:56 |                                                 |
| Client ID:                                                                                                                                | Run ID: HG03_240027         | SeqNo: 2985012   |         | PrepDate: 28-Aug-2014            | DF: 1                                           |
| Analyte                                                                                                                                   | Result                      | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Mercury                                                                                                                                   | 0.00499                     | 0.000200         | 0.005   | 0 99.8                           | 80 - 124 0.00518 3.74 20                        |
| <b>DUP</b>                                                                                                                                | Sample ID: HS14080801-01DUP | Units: mg/L      |         | Analysis Date: 28-Aug-2014 15:53 |                                                 |
| Client ID:                                                                                                                                | Run ID: HG03_240027         | SeqNo: 2985010   |         | PrepDate: 28-Aug-2014            | DF: 1                                           |
| Analyte                                                                                                                                   | Result                      | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Mercury                                                                                                                                   | ND                          | 0.000200         |         |                                  | 0 0 20                                          |
| The following samples were analyzed in this batch:                                                                                        |                             |                  |         |                                  |                                                 |
| <div> <div>HS14080845-14</div> <div>HS14080845-15</div> <div>HS14080845-16</div> <div>HS14080845-24</div> <div>HS14080845-25</div> </div> |                             |                  |         |                                  |                                                 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85458             |        |                       | Instrument: SV-6 | Method: SW8270 |                                  |                       |               |       |           |      |
|-----------------------------|--------|-----------------------|------------------|----------------|----------------------------------|-----------------------|---------------|-------|-----------|------|
| MBLK                        |        | Sample ID: MBLK-85458 | Units: ug/L      |                | Analysis Date: 26-Aug-2014 11:27 |                       |               |       |           |      |
| Client ID:                  |        | Run ID: SV-6_240005   |                  | SeqNo: 2984381 |                                  | PrepDate: 25-Aug-2014 |               | DF: 1 |           |      |
| Analyte                     | Result | PQL                   | SPK Val          | SPK Ref Value  | %REC                             | Control Limit         | RPD Ref Value | %RPD  | RPD Limit | Qual |
| 1,1'-Biphenyl               | ND     | 0.20                  |                  |                |                                  |                       |               |       |           |      |
| 1-Methylnaphthalene         | ND     | 0.10                  |                  |                |                                  |                       |               |       |           |      |
| 2,4,5-Trichlorophenol       | ND     | 0.20                  |                  |                |                                  |                       |               |       |           |      |
| 2,4,6-Trichlorophenol       | ND     | 0.20                  |                  |                |                                  |                       |               |       |           |      |
| 2,4-Dichlorophenol          | ND     | 0.20                  |                  |                |                                  |                       |               |       |           |      |
| 2,4-Dimethylphenol          | ND     | 0.20                  |                  |                |                                  |                       |               |       |           |      |
| 2,4-Dinitrophenol           | ND     | 1.0                   |                  |                |                                  |                       |               |       |           |      |
| 2,4-Dinitrotoluene          | ND     | 0.20                  |                  |                |                                  |                       |               |       |           |      |
| 2,6-Dinitrotoluene          | ND     | 0.20                  |                  |                |                                  |                       |               |       |           |      |
| 2-Chloronaphthalene         | ND     | 0.20                  |                  |                |                                  |                       |               |       |           |      |
| 2-Chlorophenol              | ND     | 0.20                  |                  |                |                                  |                       |               |       |           |      |
| 2-Methylnaphthalene         | ND     | 0.10                  |                  |                |                                  |                       |               |       |           |      |
| 2-Methylphenol              | ND     | 0.20                  |                  |                |                                  |                       |               |       |           |      |
| 2-Nitroaniline              | ND     | 0.20                  |                  |                |                                  |                       |               |       |           |      |
| 2-Nitrophenol               | ND     | 0.20                  |                  |                |                                  |                       |               |       |           |      |
| 3&4-Methylphenol            | ND     | 0.20                  |                  |                |                                  |                       |               |       |           |      |
| 3,3'-Dichlorobenzidine      | ND     | 0.20                  |                  |                |                                  |                       |               |       |           |      |
| 3-Nitroaniline              | ND     | 0.20                  |                  |                |                                  |                       |               |       |           |      |
| 4,6-Dinitro-2-methylphenol  | ND     | 0.20                  |                  |                |                                  |                       |               |       |           |      |
| 4-Bromophenyl phenyl ether  | ND     | 0.20                  |                  |                |                                  |                       |               |       |           |      |
| 4-Chloro-3-methylphenol     | ND     | 0.20                  |                  |                |                                  |                       |               |       |           |      |
| 4-Chloroaniline             | ND     | 0.20                  |                  |                |                                  |                       |               |       |           |      |
| 4-Chlorophenyl phenyl ether | ND     | 0.20                  |                  |                |                                  |                       |               |       |           |      |
| 4-Nitroaniline              | ND     | 0.20                  |                  |                |                                  |                       |               |       |           |      |
| 4-Nitrophenol               | ND     | 1.0                   |                  |                |                                  |                       |               |       |           |      |
| Acenaphthene                | ND     | 0.10                  |                  |                |                                  |                       |               |       |           |      |
| Acenaphthylene              | ND     | 0.10                  |                  |                |                                  |                       |               |       |           |      |
| Acetophenone                | ND     | 0.20                  |                  |                |                                  |                       |               |       |           |      |
| Anthracene                  | ND     | 0.10                  |                  |                |                                  |                       |               |       |           |      |
| Atrazine                    | ND     | 0.20                  |                  |                |                                  |                       |               |       |           |      |
| Benz(a)anthracene           | ND     | 0.10                  |                  |                |                                  |                       |               |       |           |      |
| Benzaldehyde                | ND     | 0.20                  |                  |                |                                  |                       |               |       |           |      |
| Benzo(a)pyrene              | ND     | 0.10                  |                  |                |                                  |                       |               |       |           |      |
| Benzo(b)fluoranthene        | ND     | 0.10                  |                  |                |                                  |                       |               |       |           |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85458             |                       | Instrument: SV-6 |         | Method: SW8270                   |                                                 |
|-----------------------------|-----------------------|------------------|---------|----------------------------------|-------------------------------------------------|
| MBLK                        | Sample ID: MBLK-85458 | Units: ug/L      |         | Analysis Date: 26-Aug-2014 11:27 |                                                 |
| Client ID:                  | Run ID: SV-6_240005   | SeqNo: 2984381   |         | PrepDate: 25-Aug-2014            | DF: 1                                           |
| Analyte                     | Result                | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Benzo(g,h,i)perylene        | ND                    | 0.10             |         |                                  |                                                 |
| Benzo(k)fluoranthene        | ND                    | 0.10             |         |                                  |                                                 |
| Bis(2-chloroethoxy)methane  | ND                    | 0.20             |         |                                  |                                                 |
| Bis(2-chloroethyl)ether     | ND                    | 0.20             |         |                                  |                                                 |
| Bis(2-chloroisopropyl)ether | ND                    | 0.20             |         |                                  |                                                 |
| Bis(2-ethylhexyl)phthalate  | ND                    | 0.20             |         |                                  |                                                 |
| Butyl benzyl phthalate      | ND                    | 0.20             |         |                                  |                                                 |
| Caprolactam                 | ND                    | 0.20             |         |                                  |                                                 |
| Carbazole                   | ND                    | 0.20             |         |                                  |                                                 |
| Chrysene                    | ND                    | 0.10             |         |                                  |                                                 |
| Dibenz(a,h)anthracene       | ND                    | 0.10             |         |                                  |                                                 |
| Dibenzofuran                | ND                    | 0.10             |         |                                  |                                                 |
| Diethyl phthalate           | ND                    | 0.20             |         |                                  |                                                 |
| Dimethyl phthalate          | ND                    | 0.20             |         |                                  |                                                 |
| Di-n-butyl phthalate        | ND                    | 0.20             |         |                                  |                                                 |
| Di-n-octyl phthalate        | ND                    | 0.20             |         |                                  |                                                 |
| Fluoranthene                | ND                    | 0.10             |         |                                  |                                                 |
| Fluorene                    | ND                    | 0.10             |         |                                  |                                                 |
| Hexachlorobenzene           | ND                    | 0.20             |         |                                  |                                                 |
| Hexachlorobutadiene         | ND                    | 0.20             |         |                                  |                                                 |
| Hexachlorocyclopentadiene   | ND                    | 0.20             |         |                                  |                                                 |
| Hexachloroethane            | ND                    | 0.20             |         |                                  |                                                 |
| Indeno(1,2,3-cd)pyrene      | ND                    | 0.10             |         |                                  |                                                 |
| Isophorone                  | ND                    | 0.20             |         |                                  |                                                 |
| Naphthalene                 | ND                    | 0.10             |         |                                  |                                                 |
| Nitrobenzene                | ND                    | 0.20             |         |                                  |                                                 |
| N-Nitrosodi-n-propylamine   | ND                    | 0.20             |         |                                  |                                                 |
| N-Nitrosodiphenylamine      | ND                    | 0.20             |         |                                  |                                                 |
| Pentachlorophenol           | ND                    | 0.20             |         |                                  |                                                 |
| Phenanthrene                | ND                    | 0.10             |         |                                  |                                                 |
| Phenol                      | ND                    | 0.20             |         |                                  |                                                 |
| Pyrene                      | ND                    | 0.10             |         |                                  |                                                 |
| Surr: 2,4,6-Tribromophenol  | 3.389                 | 0.20             | 5       | 0 67.8                           | 34 - 129                                        |
| Surr: 2-Fluorobiphenyl      | 3.728                 | 0.20             | 5       | 0 74.6                           | 40 - 125                                        |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
WorkOrder: HS14080845  
Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85458       |                       | Instrument: SV-6 |         | Method: SW8270        |                                  |               |               |      |                |  |
|-----------------------|-----------------------|------------------|---------|-----------------------|----------------------------------|---------------|---------------|------|----------------|--|
| MBLK                  | Sample ID: MBLK-85458 | Units: ug/L      |         |                       | Analysis Date: 26-Aug-2014 11:27 |               |               |      |                |  |
| Client ID:            | Run ID: SV-6_240005   | SeqNo: 2984381   |         | PrepDate: 25-Aug-2014 |                                  | DF: 1         |               |      |                |  |
| Analyte               | Result                | PQL              | SPK Val | SPK Ref Value         | %REC                             | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |  |
| Surr: 2-Fluorophenol  | 3.35                  | 0.20             | 5       | 0                     | 67.0                             | 20 - 120      |               |      |                |  |
| Surr: 4-Terphenyl-d14 | 3.98                  | 0.20             | 5       | 0                     | 79.6                             | 40 - 135      |               |      |                |  |
| Surr: Nitrobenzene-d5 | 3.46                  | 0.20             | 5       | 0                     | 69.2                             | 41 - 120      |               |      |                |  |
| Surr: Phenol-d6       | 3.589                 | 0.20             | 5       | 0                     | 71.8                             | 20 - 120      |               |      |                |  |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85458             |                      | Instrument: SV-6 |         | Method: SW8270 |                                  |               |               |      |                |  |
|-----------------------------|----------------------|------------------|---------|----------------|----------------------------------|---------------|---------------|------|----------------|--|
| LCS                         | Sample ID: LCS-85458 | Units: ug/L      |         |                | Analysis Date: 26-Aug-2014 11:46 |               |               |      |                |  |
| Client ID:                  | Run ID: SV-6_240005  | SeqNo: 2984382   |         |                | PrepDate: 25-Aug-2014            |               | DF: 1         |      |                |  |
| Analyte                     | Result               | PQL              | SPK Val | SPK Ref Value  | %REC                             | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |  |
| 1,1'-Biphenyl               | 3.197                | 0.20             | 5       | 0              | 63.9                             | 45 - 125      |               |      |                |  |
| 1-Methylnaphthalene         | 3.209                | 0.10             | 5       | 0              | 64.2                             | 45 - 120      |               |      |                |  |
| 2,4,5-Trichlorophenol       | 3.545                | 0.20             | 5       | 0              | 70.9                             | 46 - 120      |               |      |                |  |
| 2,4,6-Trichlorophenol       | 3.215                | 0.20             | 5       | 0              | 64.3                             | 42 - 120      |               |      |                |  |
| 2,4-Dichlorophenol          | 3.099                | 0.20             | 5       | 0              | 62.0                             | 49 - 120      |               |      |                |  |
| 2,4-Dimethylphenol          | 2.65                 | 0.20             | 5       | 0              | 53.0                             | 35 - 120      |               |      |                |  |
| 2,4-Dinitrophenol           | 2.884                | 1.0              | 5       | 0              | 57.7                             | 15 - 120      |               |      |                |  |
| 2,4-Dinitrotoluene          | 3.516                | 0.20             | 5       | 0              | 70.3                             | 50 - 122      |               |      |                |  |
| 2,6-Dinitrotoluene          | 3.584                | 0.20             | 5       | 0              | 71.7                             | 50 - 120      |               |      |                |  |
| 2-Chloronaphthalene         | 3.403                | 0.20             | 5       | 0              | 68.1                             | 50 - 120      |               |      |                |  |
| 2-Chlorophenol              | 3.074                | 0.20             | 5       | 0              | 61.5                             | 40 - 120      |               |      |                |  |
| 2-Methylnaphthalene         | 3.116                | 0.10             | 5       | 0              | 62.3                             | 50 - 120      |               |      |                |  |
| 2-Methylphenol              | 2.977                | 0.20             | 5       | 0              | 59.5                             | 45 - 120      |               |      |                |  |
| 2-Nitroaniline              | 3.769                | 0.20             | 5       | 0              | 75.4                             | 28 - 139      |               |      |                |  |
| 2-Nitrophenol               | 3.122                | 0.20             | 5       | 0              | 62.4                             | 40 - 120      |               |      |                |  |
| 3&4-Methylphenol            | 3.004                | 0.20             | 5       | 0              | 60.1                             | 35 - 120      |               |      |                |  |
| 3,3'-Dichlorobenzidine      | 3.475                | 0.20             | 5       | 0              | 69.5                             | 15 - 120      |               |      |                |  |
| 3-Nitroaniline              | 3.202                | 0.20             | 5       | 0              | 64.0                             | 30 - 120      |               |      |                |  |
| 4,6-Dinitro-2-methylphenol  | 3.049                | 0.20             | 5       | 0              | 61.0                             | 25 - 121      |               |      |                |  |
| 4-Bromophenyl phenyl ether  | 3.14                 | 0.20             | 5       | 0              | 62.8                             | 45 - 120      |               |      |                |  |
| 4-Chloro-3-methylphenol     | 3.054                | 0.20             | 5       | 0              | 61.1                             | 47 - 120      |               |      |                |  |
| 4-Chloroaniline             | 3.06                 | 0.20             | 5       | 0              | 61.2                             | 20 - 120      |               |      |                |  |
| 4-Chlorophenyl phenyl ether | 3.271                | 0.20             | 5       | 0              | 65.4                             | 50 - 120      |               |      |                |  |
| 4-Nitroaniline              | 3.428                | 0.20             | 5       | 0              | 68.6                             | 30 - 133      |               |      |                |  |
| 4-Nitrophenol               | 3.218                | 1.0              | 5       | 0              | 64.4                             | 30 - 130      |               |      |                |  |
| Acenaphthene                | 3.28                 | 0.10             | 5       | 0              | 65.6                             | 45 - 120      |               |      |                |  |
| Acenaphthylene              | 3.275                | 0.10             | 5       | 0              | 65.5                             | 47 - 120      |               |      |                |  |
| Acetophenone                | 2.74                 | 0.20             | 5       | 0              | 54.8                             | 40 - 120      |               |      |                |  |
| Anthracene                  | 3.226                | 0.10             | 5       | 0              | 64.5                             | 45 - 120      |               |      |                |  |
| Atrazine                    | 3.084                | 0.20             | 5       | 0              | 61.7                             | 40 - 130      |               |      |                |  |
| Benz(a)anthracene           | 3.599                | 0.10             | 5       | 0              | 72.0                             | 40 - 120      |               |      |                |  |
| Benzaldehyde                | 0.8096               | 0.20             | 5       | 0              | 16.2                             | 15 - 120      |               |      |                |  |
| Benzo(a)pyrene              | 3.457                | 0.10             | 5       | 0              | 69.1                             | 45 - 120      |               |      |                |  |
| Benzo(b)fluoranthene        | 3.499                | 0.10             | 5       | 0              | 70.0                             | 50 - 120      |               |      |                |  |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85458             |  | Instrument: SV-6     |      | Method: SW8270                   |                 |
|-----------------------------|--|----------------------|------|----------------------------------|-----------------|
| LCS                         |  | Sample ID: LCS-85458 |      | Units: ug/L                      |                 |
| Client ID:                  |  | Run ID: SV-6_240005  |      | SeqNo: 2984382                   |                 |
| Analyte                     |  | Result               |      | Analysis Date: 26-Aug-2014 11:46 |                 |
|                             |  | PQL                  |      | PrepDate: 25-Aug-2014 DF: 1      |                 |
|                             |  | SPK Val              |      | SPK Ref Value %REC               |                 |
|                             |  |                      |      | Control Limit                    |                 |
|                             |  |                      |      | RPD Ref Value %RPD               |                 |
|                             |  |                      |      | RPD Limit Qual                   |                 |
| Benzo(g,h,i)perylene        |  | 3.451                | 0.10 | 5                                | 0 69.0 42 - 127 |
| Benzo(k)fluoranthene        |  | 3.527                | 0.10 | 5                                | 0 70.5 45 - 127 |
| Bis(2-chloroethoxy)methane  |  | 3.002                | 0.20 | 5                                | 0 60.0 45 - 120 |
| Bis(2-chloroethyl)ether     |  | 2.991                | 0.20 | 5                                | 0 59.8 37 - 121 |
| Bis(2-chloroisopropyl)ether |  | 2.925                | 0.20 | 5                                | 0 58.5 40 - 120 |
| Bis(2-ethylhexyl)phthalate  |  | 3.449                | 0.20 | 5                                | 0 69.0 40 - 139 |
| Butyl benzyl phthalate      |  | 3.609                | 0.20 | 5                                | 0 72.2 47 - 123 |
| Caprolactam                 |  | 2.436                | 0.20 | 5                                | 0 48.7 35 - 134 |
| Carbazole                   |  | 3.109                | 0.20 | 5                                | 0 62.2 42 - 128 |
| Chrysene                    |  | 3.461                | 0.10 | 5                                | 0 69.2 43 - 120 |
| Dibenz(a,h)anthracene       |  | 3.425                | 0.10 | 5                                | 0 68.5 45 - 125 |
| Dibenzofuran                |  | 3.228                | 0.10 | 5                                | 0 64.6 50 - 120 |
| Diethyl phthalate           |  | 3.298                | 0.20 | 5                                | 0 66.0 41 - 120 |
| Dimethyl phthalate          |  | 3.21                 | 0.20 | 5                                | 0 64.2 40 - 122 |
| Di-n-butyl phthalate        |  | 3.284                | 0.20 | 5                                | 0 65.7 45 - 123 |
| Di-n-octyl phthalate        |  | 3.531                | 0.20 | 5                                | 0 70.6 45 - 129 |
| Fluoranthene                |  | 3.309                | 0.10 | 5                                | 0 66.2 45 - 125 |
| Fluorene                    |  | 3.365                | 0.10 | 5                                | 0 67.3 49 - 120 |
| Hexachlorobenzene           |  | 3.183                | 0.20 | 5                                | 0 63.7 48 - 120 |
| Hexachlorobutadiene         |  | 2.992                | 0.20 | 5                                | 0 59.8 40 - 120 |
| Hexachlorocyclopentadiene   |  | 3.117                | 0.20 | 5                                | 0 62.3 34 - 136 |
| Hexachloroethane            |  | 2.802                | 0.20 | 5                                | 0 56.0 40 - 120 |
| Indeno(1,2,3-cd)pyrene      |  | 3.41                 | 0.10 | 5                                | 0 68.2 41 - 128 |
| Isophorone                  |  | 2.967                | 0.20 | 5                                | 0 59.3 40 - 121 |
| Naphthalene                 |  | 3.13                 | 0.10 | 5                                | 0 62.6 45 - 120 |
| Nitrobenzene                |  | 2.956                | 0.20 | 5                                | 0 59.1 44 - 120 |
| N-Nitrosodi-n-propylamine   |  | 2.748                | 0.20 | 5                                | 0 55.0 40 - 120 |
| N-Nitrosodiphenylamine      |  | 3.156                | 0.20 | 5                                | 0 63.1 40 - 125 |
| Pentachlorophenol           |  | 3.257                | 0.20 | 5                                | 0 65.1 19 - 121 |
| Phenanthrene                |  | 3.326                | 0.10 | 5                                | 0 66.5 45 - 121 |
| Phenol                      |  | 3.028                | 0.20 | 5                                | 0 60.6 20 - 124 |
| Pyrene                      |  | 3.58                 | 0.10 | 5                                | 0 71.6 40 - 130 |
| Surr: 2,4,6-Tribromophenol  |  | 3.462                | 0.20 | 5                                | 0 69.2 34 - 129 |
| Surr: 2-Fluorobiphenyl      |  | 3.27                 | 0.20 | 5                                | 0 65.4 40 - 125 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
WorkOrder: HS14080845  
Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85458       |                      | Instrument: SV-6 |         | Method: SW8270                   |                                                 |
|-----------------------|----------------------|------------------|---------|----------------------------------|-------------------------------------------------|
| LCS                   | Sample ID: LCS-85458 | Units: ug/L      |         | Analysis Date: 26-Aug-2014 11:46 |                                                 |
| Client ID:            | Run ID: SV-6_240005  | SeqNo: 2984382   |         | PrepDate: 25-Aug-2014            | DF: 1                                           |
| Analyte               | Result               | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Surr: 2-Fluorophenol  | 3.039                | 0.20             | 5       | 0 60.8                           | 20 - 120                                        |
| Surr: 4-Terphenyl-d14 | 3.586                | 0.20             | 5       | 0 71.7                           | 40 - 135                                        |
| Surr: Nitrobenzene-d5 | 2.965                | 0.20             | 5       | 0 59.3                           | 41 - 120                                        |
| Surr: Phenol-d6       | 3.098                | 0.20             | 5       | 0 62.0                           | 20 - 120                                        |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85458             |        | Instrument: SV-6      |         | Method: SW8270 |      |                                  |               |       |           |      |
|-----------------------------|--------|-----------------------|---------|----------------|------|----------------------------------|---------------|-------|-----------|------|
| LCSD                        |        | Sample ID: LCSD-85458 |         | Units: ug/L    |      | Analysis Date: 26-Aug-2014 12:24 |               |       |           |      |
| Client ID:                  |        | Run ID: SV-6_240005   |         | SeqNo: 2984384 |      | PrepDate: 25-Aug-2014            |               | DF: 1 |           |      |
| Analyte                     | Result | PQL                   | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit | Qual |
| 1,1'-Biphenyl               | 3.43   | 0.20                  | 5       | 0              | 68.6 | 45 - 125                         | 3.197         | 7.03  | 20        |      |
| 1-Methylnaphthalene         | 3.469  | 0.10                  | 5       | 0              | 69.4 | 45 - 120                         | 3.209         | 7.79  | 20        |      |
| 2,4,5-Trichlorophenol       | 3.66   | 0.20                  | 5       | 0              | 73.2 | 46 - 120                         | 3.545         | 3.2   | 20        |      |
| 2,4,6-Trichlorophenol       | 3.629  | 0.20                  | 5       | 0              | 72.6 | 42 - 120                         | 3.215         | 12.1  | 20        |      |
| 2,4-Dichlorophenol          | 3.458  | 0.20                  | 5       | 0              | 69.2 | 49 - 120                         | 3.099         | 11    | 20        |      |
| 2,4-Dimethylphenol          | 3.072  | 0.20                  | 5       | 0              | 61.4 | 35 - 120                         | 2.65          | 14.8  | 20        |      |
| 2,4-Dinitrophenol           | 3.727  | 1.0                   | 5       | 0              | 74.5 | 15 - 120                         | 2.884         | 25.5  | 50        |      |
| 2,4-Dinitrotoluene          | 3.69   | 0.20                  | 5       | 0              | 73.8 | 50 - 122                         | 3.516         | 4.84  | 20        |      |
| 2,6-Dinitrotoluene          | 3.974  | 0.20                  | 5       | 0              | 79.5 | 50 - 120                         | 3.584         | 10.3  | 20        |      |
| 2-Chloronaphthalene         | 3.649  | 0.20                  | 5       | 0              | 73.0 | 50 - 120                         | 3.403         | 6.97  | 20        |      |
| 2-Chlorophenol              | 3.429  | 0.20                  | 5       | 0              | 68.6 | 40 - 120                         | 3.074         | 10.9  | 20        |      |
| 2-Methylnaphthalene         | 3.393  | 0.10                  | 5       | 0              | 67.9 | 50 - 120                         | 3.116         | 8.5   | 20        |      |
| 2-Methylphenol              | 3.304  | 0.20                  | 5       | 0              | 66.1 | 45 - 120                         | 2.977         | 10.4  | 20        |      |
| 2-Nitroaniline              | 4.015  | 0.20                  | 5       | 0              | 80.3 | 28 - 139                         | 3.769         | 6.32  | 20        |      |
| 2-Nitrophenol               | 3.333  | 0.20                  | 5       | 0              | 66.7 | 40 - 120                         | 3.122         | 6.54  | 20        |      |
| 3&4-Methylphenol            | 3.315  | 0.20                  | 5       | 0              | 66.3 | 35 - 120                         | 3.004         | 9.85  | 20        |      |
| 3,3'-Dichlorobenzidine      | 3.919  | 0.20                  | 5       | 0              | 78.4 | 15 - 120                         | 3.475         | 12    | 20        |      |
| 3-Nitroaniline              | 3.639  | 0.20                  | 5       | 0              | 72.8 | 30 - 120                         | 3.202         | 12.8  | 20        |      |
| 4,6-Dinitro-2-methylphenol  | 3.458  | 0.20                  | 5       | 0              | 69.2 | 25 - 121                         | 3.049         | 12.6  | 30        |      |
| 4-Bromophenyl phenyl ether  | 3.586  | 0.20                  | 5       | 0              | 71.7 | 45 - 120                         | 3.14          | 13.3  | 20        |      |
| 4-Chloro-3-methylphenol     | 3.436  | 0.20                  | 5       | 0              | 68.7 | 47 - 120                         | 3.054         | 11.8  | 20        |      |
| 4-Chloroaniline             | 3.173  | 0.20                  | 5       | 0              | 63.5 | 20 - 120                         | 3.06          | 3.64  | 20        |      |
| 4-Chlorophenyl phenyl ether | 3.522  | 0.20                  | 5       | 0              | 70.4 | 50 - 120                         | 3.271         | 7.38  | 20        |      |
| 4-Nitroaniline              | 3.558  | 0.20                  | 5       | 0              | 71.2 | 30 - 133                         | 3.428         | 3.72  | 20        |      |
| 4-Nitrophenol               | 3.516  | 1.0                   | 5       | 0              | 70.3 | 30 - 130                         | 3.218         | 8.87  | 20        |      |
| Acenaphthene                | 3.255  | 0.10                  | 5       | 0              | 65.1 | 45 - 120                         | 3.28          | 0.767 | 20        |      |
| Acenaphthylene              | 3.54   | 0.10                  | 5       | 0              | 70.8 | 47 - 120                         | 3.275         | 7.78  | 20        |      |
| Acetophenone                | 3.071  | 0.20                  | 5       | 0              | 61.4 | 40 - 120                         | 2.74          | 11.4  | 20        |      |
| Anthracene                  | 3.582  | 0.10                  | 5       | 0              | 71.6 | 45 - 120                         | 3.226         | 10.5  | 20        |      |
| Atrazine                    | 3.405  | 0.20                  | 5       | 0              | 68.1 | 40 - 130                         | 3.084         | 9.88  | 20        |      |
| Benz(a)anthracene           | 3.894  | 0.10                  | 5       | 0              | 77.9 | 40 - 120                         | 3.599         | 7.88  | 20        |      |
| Benzaldehyde                | 0.8518 | 0.20                  | 5       | 0              | 17.0 | 15 - 120                         | 0.8096        | 5.09  | 30        |      |
| Benzo(a)pyrene              | 3.727  | 0.10                  | 5       | 0              | 74.5 | 45 - 120                         | 3.457         | 7.52  | 20        |      |
| Benzo(b)fluoranthene        | 3.811  | 0.10                  | 5       | 0              | 76.2 | 50 - 120                         | 3.499         | 8.54  | 20        |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85458             |        | Instrument: SV-6      |         | Method: SW8270 |      |                                  |               |       |           |      |
|-----------------------------|--------|-----------------------|---------|----------------|------|----------------------------------|---------------|-------|-----------|------|
| LCSD                        |        | Sample ID: LCSD-85458 |         | Units: ug/L    |      | Analysis Date: 26-Aug-2014 12:24 |               |       |           |      |
| Client ID:                  |        | Run ID: SV-6_240005   |         | SeqNo: 2984384 |      | PrepDate: 25-Aug-2014            |               | DF: 1 |           |      |
| Analyte                     | Result | PQL                   | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit | Qual |
| Benzo(g,h,i)perylene        | 3.654  | 0.10                  | 5       | 0              | 73.1 | 42 - 127                         | 3.451         | 5.7   | 20        |      |
| Benzo(k)fluoranthene        | 3.599  | 0.10                  | 5       | 0              | 72.0 | 45 - 127                         | 3.527         | 2.03  | 20        |      |
| Bis(2-chloroethoxy)methane  | 3.299  | 0.20                  | 5       | 0              | 66.0 | 45 - 120                         | 3.002         | 9.42  | 20        |      |
| Bis(2-chloroethyl)ether     | 3.249  | 0.20                  | 5       | 0              | 65.0 | 37 - 121                         | 2.991         | 8.28  | 20        |      |
| Bis(2-chloroisopropyl)ether | 3.294  | 0.20                  | 5       | 0              | 65.9 | 40 - 120                         | 2.925         | 11.8  | 20        |      |
| Bis(2-ethylhexyl)phthalate  | 3.763  | 0.20                  | 5       | 0              | 75.3 | 40 - 139                         | 3.449         | 8.71  | 20        |      |
| Butyl benzyl phthalate      | 3.914  | 0.20                  | 5       | 0              | 78.3 | 47 - 123                         | 3.609         | 8.12  | 20        |      |
| Caprolactam                 | 3.601  | 0.20                  | 5       | 0              | 72.0 | 35 - 134                         | 2.436         | 38.6  | 20        | R    |
| Carbazole                   | 3.527  | 0.20                  | 5       | 0              | 70.5 | 42 - 128                         | 3.109         | 12.6  | 20        |      |
| Chrysene                    | 3.811  | 0.10                  | 5       | 0              | 76.2 | 43 - 120                         | 3.461         | 9.63  | 20        |      |
| Dibenz(a,h)anthracene       | 3.582  | 0.10                  | 5       | 0              | 71.6 | 45 - 125                         | 3.425         | 4.47  | 20        |      |
| Dibenzofuran                | 3.52   | 0.10                  | 5       | 0              | 70.4 | 50 - 120                         | 3.228         | 8.65  | 20        |      |
| Diethyl phthalate           | 3.554  | 0.20                  | 5       | 0              | 71.1 | 41 - 120                         | 3.298         | 7.47  | 20        |      |
| Dimethyl phthalate          | 3.531  | 0.20                  | 5       | 0              | 70.6 | 40 - 122                         | 3.21          | 9.54  | 20        |      |
| Di-n-butyl phthalate        | 3.617  | 0.20                  | 5       | 0              | 72.3 | 45 - 123                         | 3.284         | 9.65  | 20        |      |
| Di-n-octyl phthalate        | 3.875  | 0.20                  | 5       | 0              | 77.5 | 45 - 129                         | 3.531         | 9.27  | 20        |      |
| Fluoranthene                | 3.672  | 0.10                  | 5       | 0              | 73.4 | 45 - 125                         | 3.309         | 10.4  | 20        |      |
| Fluorene                    | 3.559  | 0.10                  | 5       | 0              | 71.2 | 49 - 120                         | 3.365         | 5.61  | 20        |      |
| Hexachlorobenzene           | 3.415  | 0.20                  | 5       | 0              | 68.3 | 48 - 120                         | 3.183         | 7.01  | 20        |      |
| Hexachlorobutadiene         | 3.399  | 0.20                  | 5       | 0              | 68.0 | 40 - 120                         | 2.992         | 12.8  | 20        |      |
| Hexachlorocyclopentadiene   | 3.45   | 0.20                  | 5       | 0              | 69.0 | 34 - 136                         | 3.117         | 10.1  | 20        |      |
| Hexachloroethane            | 3.067  | 0.20                  | 5       | 0              | 61.3 | 40 - 120                         | 2.802         | 9.05  | 20        |      |
| Indeno(1,2,3-cd)pyrene      | 3.741  | 0.10                  | 5       | 0              | 74.8 | 41 - 128                         | 3.41          | 9.27  | 20        |      |
| Isophorone                  | 3.432  | 0.20                  | 5       | 0              | 68.6 | 40 - 121                         | 2.967         | 14.6  | 20        |      |
| Naphthalene                 | 3.383  | 0.10                  | 5       | 0              | 67.7 | 45 - 120                         | 3.13          | 7.77  | 20        |      |
| Nitrobenzene                | 3.252  | 0.20                  | 5       | 0              | 65.0 | 44 - 120                         | 2.956         | 9.54  | 20        |      |
| N-Nitrosodi-n-propylamine   | 3.179  | 0.20                  | 5       | 0              | 63.6 | 40 - 120                         | 2.748         | 14.5  | 20        |      |
| N-Nitrosodiphenylamine      | 3.444  | 0.20                  | 5       | 0              | 68.9 | 40 - 125                         | 3.156         | 8.71  | 20        |      |
| Pentachlorophenol           | 3.772  | 0.20                  | 5       | 0              | 75.4 | 19 - 121                         | 3.257         | 14.6  | 20        |      |
| Phenanthrene                | 3.677  | 0.10                  | 5       | 0              | 73.5 | 45 - 121                         | 3.326         | 10    | 20        |      |
| Phenol                      | 3.346  | 0.20                  | 5       | 0              | 66.9 | 20 - 124                         | 3.028         | 9.96  | 20        |      |
| Pyrene                      | 3.908  | 0.10                  | 5       | 0              | 78.2 | 40 - 130                         | 3.58          | 8.77  | 20        |      |
| Surr: 2,4,6-Tribromophenol  | 3.815  | 0.20                  | 5       | 0              | 76.3 | 34 - 129                         | 3.462         | 9.7   |           |      |
| Surr: 2-Fluorobiphenyl      | 3.466  | 0.20                  | 5       | 0              | 69.3 | 40 - 125                         | 3.27          | 5.82  |           |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
WorkOrder: HS14080845  
Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85458       |                       | Instrument: SV-6 |         | Method: SW8270                   |                                                 |
|-----------------------|-----------------------|------------------|---------|----------------------------------|-------------------------------------------------|
| LCSD                  | Sample ID: LCSD-85458 | Units: ug/L      |         | Analysis Date: 26-Aug-2014 12:24 |                                                 |
| Client ID:            | Run ID: SV-6_240005   | SeqNo: 2984384   |         | PrepDate: 25-Aug-2014            | DF: 1                                           |
| Analyte               | Result                | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Surr: 2-Fluorophenol  | 3.242                 | 0.20             | 5       | 0 64.8                           | 20 - 120 3.039 6.48                             |
| Surr: 4-Terphenyl-d14 | 3.945                 | 0.20             | 5       | 0 78.9                           | 40 - 135 3.586 9.52                             |
| Surr: Nitrobenzene-d5 | 3.251                 | 0.20             | 5       | 0 65.0                           | 41 - 120 2.965 9.21                             |
| Surr: Phenol-d6       | 3.362                 | 0.20             | 5       | 0 67.2                           | 20 - 120 3.098 8.18                             |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85458             |                            | Instrument: SV-6 |         | Method: SW8270        |                                  |               |               |      |           |      |
|-----------------------------|----------------------------|------------------|---------|-----------------------|----------------------------------|---------------|---------------|------|-----------|------|
| MS                          | Sample ID: HS14080841-01MS | Units: ug/L      |         |                       | Analysis Date: 26-Aug-2014 12:43 |               |               |      |           |      |
| Client ID:                  | Run ID: SV-6_240005        | SeqNo: 2984385   |         | PrepDate: 25-Aug-2014 |                                  | DF: 1         |               |      |           |      |
| Analyte                     | Result                     | PQL              | SPK Val | SPK Ref Value         | %REC                             | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| 1,1'-Biphenyl               | 3.328                      | 0.20             | 5       | 0                     | 66.6                             | 45 - 125      |               |      |           |      |
| 1-Methylnaphthalene         | 3.329                      | 0.10             | 5       | 0                     | 66.6                             | 45 - 120      |               |      |           |      |
| 2,4,5-Trichlorophenol       | 3.798                      | 0.20             | 5       | 0                     | 76.0                             | 46 - 120      |               |      |           |      |
| 2,4,6-Trichlorophenol       | 3.814                      | 0.20             | 5       | 0                     | 76.3                             | 42 - 120      |               |      |           |      |
| 2,4-Dichlorophenol          | 3.339                      | 0.20             | 5       | 0                     | 66.8                             | 49 - 120      |               |      |           |      |
| 2,4-Dimethylphenol          | 3.23                       | 0.20             | 5       | 0                     | 64.6                             | 35 - 120      |               |      |           |      |
| 2,4-Dinitrophenol           | 4.251                      | 1.0              | 5       | 0                     | 85.0                             | 15 - 120      |               |      |           |      |
| 2,4-Dinitrotoluene          | 4.087                      | 0.20             | 5       | 0                     | 81.7                             | 50 - 122      |               |      |           |      |
| 2,6-Dinitrotoluene          | 4.166                      | 0.20             | 5       | 0                     | 83.3                             | 50 - 120      |               |      |           |      |
| 2-Chloronaphthalene         | 3.557                      | 0.20             | 5       | 0                     | 71.1                             | 50 - 120      |               |      |           |      |
| 2-Chlorophenol              | 3.299                      | 0.20             | 5       | 0                     | 66.0                             | 40 - 120      |               |      |           |      |
| 2-Methylnaphthalene         | 3.308                      | 0.10             | 5       | 0                     | 66.2                             | 50 - 120      |               |      |           |      |
| 2-Methylphenol              | 3.282                      | 0.20             | 5       | 0                     | 65.6                             | 45 - 120      |               |      |           |      |
| 2-Nitroaniline              | 4.162                      | 0.20             | 5       | 0                     | 83.2                             | 28 - 139      |               |      |           |      |
| 2-Nitrophenol               | 3.246                      | 0.20             | 5       | 0                     | 64.9                             | 40 - 120      |               |      |           |      |
| 3&4-Methylphenol            | 3.339                      | 0.20             | 5       | 0                     | 66.8                             | 35 - 120      |               |      |           |      |
| 3,3'-Dichlorobenzidine      | 3.909                      | 0.20             | 5       | 0                     | 78.2                             | 15 - 120      |               |      |           |      |
| 3-Nitroaniline              | 3.853                      | 0.20             | 5       | 0                     | 77.1                             | 30 - 120      |               |      |           |      |
| 4,6-Dinitro-2-methylphenol  | 3.742                      | 0.20             | 5       | 0                     | 74.8                             | 25 - 121      |               |      |           |      |
| 4-Bromophenyl phenyl ether  | 3.624                      | 0.20             | 5       | 0                     | 72.5                             | 45 - 120      |               |      |           |      |
| 4-Chloro-3-methylphenol     | 3.523                      | 0.20             | 5       | 0                     | 70.5                             | 47 - 120      |               |      |           |      |
| 4-Chloroaniline             | 3.2                        | 0.20             | 5       | 0                     | 64.0                             | 20 - 120      |               |      |           |      |
| 4-Chlorophenyl phenyl ether | 3.552                      | 0.20             | 5       | 0                     | 71.0                             | 50 - 120      |               |      |           |      |
| 4-Nitroaniline              | 4.097                      | 0.20             | 5       | 0                     | 81.9                             | 30 - 133      |               |      |           |      |
| 4-Nitrophenol               | 4.04                       | 1.0              | 5       | 0                     | 80.8                             | 30 - 130      |               |      |           |      |
| Acenaphthene                | 3.262                      | 0.10             | 5       | 0                     | 65.2                             | 45 - 120      |               |      |           |      |
| Acenaphthylene              | 3.485                      | 0.10             | 5       | 0                     | 69.7                             | 47 - 120      |               |      |           |      |
| Acetophenone                | 2.953                      | 0.20             | 5       | 0                     | 59.1                             | 40 - 120      |               |      |           |      |
| Anthracene                  | 3.698                      | 0.10             | 5       | 0                     | 74.0                             | 45 - 120      |               |      |           |      |
| Atrazine                    | 3.857                      | 0.20             | 5       | 0                     | 77.1                             | 40 - 130      |               |      |           |      |
| Benz(a)anthracene           | 4.283                      | 0.10             | 5       | 0                     | 85.7                             | 40 - 120      |               |      |           |      |
| Benzaldehyde                | 0.8083                     | 0.20             | 5       | 0                     | 16.2                             | 15 - 120      |               |      |           |      |
| Benzo(a)pyrene              | 4.187                      | 0.10             | 5       | 0                     | 83.7                             | 45 - 120      |               |      |           |      |
| Benzo(b)fluoranthene        | 4.311                      | 0.10             | 5       | 0                     | 86.2                             | 50 - 120      |               |      |           |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85458             |        | Instrument: SV-6           |         | Method: SW8270 |      |                                  |               |       |                |
|-----------------------------|--------|----------------------------|---------|----------------|------|----------------------------------|---------------|-------|----------------|
| MS                          |        | Sample ID: HS14080841-01MS |         | Units: ug/L    |      | Analysis Date: 26-Aug-2014 12:43 |               |       |                |
| Client ID:                  |        | Run ID: SV-6_240005        |         | SeqNo: 2984385 |      | PrepDate: 25-Aug-2014            |               | DF: 1 |                |
| Analyte                     | Result | PQL                        | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit Qual |
| Benzo(g,h,i)perylene        | 4.129  | 0.10                       | 5       | 0              | 82.6 | 42 - 127                         |               |       |                |
| Benzo(k)fluoranthene        | 4.126  | 0.10                       | 5       | 0              | 82.5 | 45 - 127                         |               |       |                |
| Bis(2-chloroethoxy)methane  | 3.136  | 0.20                       | 5       | 0              | 62.7 | 45 - 120                         |               |       |                |
| Bis(2-chloroethyl)ether     | 3.127  | 0.20                       | 5       | 0              | 62.5 | 37 - 121                         |               |       |                |
| Bis(2-chloroisopropyl)ether | 3.165  | 0.20                       | 5       | 0              | 63.3 | 40 - 120                         |               |       |                |
| Bis(2-ethylhexyl)phthalate  | 4.759  | 0.20                       | 5       | 0.3413         | 88.4 | 40 - 139                         |               |       |                |
| Butyl benzyl phthalate      | 4.443  | 0.20                       | 5       | 0              | 88.9 | 47 - 123                         |               |       |                |
| Caprolactam                 | 4.161  | 0.20                       | 5       | 0.1031         | 81.2 | 35 - 134                         |               |       |                |
| Carbazole                   | 3.989  | 0.20                       | 5       | 0              | 79.8 | 42 - 128                         |               |       |                |
| Chrysene                    | 4.107  | 0.10                       | 5       | 0              | 82.1 | 43 - 120                         |               |       |                |
| Dibenz(a,h)anthracene       | 4.16   | 0.10                       | 5       | 0              | 83.2 | 45 - 125                         |               |       |                |
| Dibenzofuran                | 3.548  | 0.10                       | 5       | 0              | 71.0 | 50 - 120                         |               |       |                |
| Diethyl phthalate           | 3.898  | 0.20                       | 5       | 0              | 78.0 | 41 - 120                         |               |       |                |
| Dimethyl phthalate          | 3.736  | 0.20                       | 5       | 0              | 74.7 | 40 - 122                         |               |       |                |
| Di-n-butyl phthalate        | 3.96   | 0.20                       | 5       | 0              | 79.2 | 45 - 123                         |               |       |                |
| Di-n-octyl phthalate        | 4.437  | 0.20                       | 5       | 0              | 88.7 | 45 - 129                         |               |       |                |
| Fluoranthene                | 3.957  | 0.10                       | 5       | 0              | 79.1 | 45 - 125                         |               |       |                |
| Fluorene                    | 3.651  | 0.10                       | 5       | 0              | 73.0 | 49 - 120                         |               |       |                |
| Hexachlorobenzene           | 3.561  | 0.20                       | 5       | 0              | 71.2 | 48 - 120                         |               |       |                |
| Hexachlorobutadiene         | 3.16   | 0.20                       | 5       | 0              | 63.2 | 40 - 120                         |               |       |                |
| Hexachlorocyclopentadiene   | 3.302  | 0.20                       | 5       | 0              | 66.0 | 34 - 136                         |               |       |                |
| Hexachloroethane            | 3.045  | 0.20                       | 5       | 0              | 60.9 | 40 - 120                         |               |       |                |
| Indeno(1,2,3-cd)pyrene      | 4.448  | 0.10                       | 5       | 0              | 89.0 | 41 - 128                         |               |       |                |
| Isophorone                  | 3.211  | 0.20                       | 5       | 0              | 64.2 | 40 - 121                         |               |       |                |
| Naphthalene                 | 3.232  | 0.10                       | 5       | 0              | 64.6 | 45 - 120                         |               |       |                |
| Nitrobenzene                | 3.103  | 0.20                       | 5       | 0              | 62.1 | 44 - 120                         |               |       |                |
| N-Nitrosodi-n-propylamine   | 3.011  | 0.20                       | 5       | 0              | 60.2 | 40 - 120                         |               |       |                |
| N-Nitrosodiphenylamine      | 3.603  | 0.20                       | 5       | 0              | 72.1 | 40 - 125                         |               |       |                |
| Pentachlorophenol           | 4.279  | 0.20                       | 5       | 0              | 85.6 | 19 - 121                         |               |       |                |
| Phenanthrene                | 3.824  | 0.10                       | 5       | 0              | 76.5 | 45 - 121                         |               |       |                |
| Phenol                      | 3.242  | 0.20                       | 5       | 0              | 64.8 | 20 - 124                         |               |       |                |
| Pyrene                      | 4.242  | 0.10                       | 5       | 0              | 84.8 | 40 - 130                         |               |       |                |
| Surr: 2,4,6-Tribromophenol  | 4.415  | 0.20                       | 5       | 0              | 88.3 | 34 - 129                         |               |       |                |
| Surr: 2-Fluorobiphenyl      | 3.532  | 0.20                       | 5       | 0              | 70.6 | 40 - 125                         |               |       |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
WorkOrder: HS14080845  
Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85458       |                            | Instrument: SV-6 |         | Method: SW8270        |                                  |               |               |      |                |  |
|-----------------------|----------------------------|------------------|---------|-----------------------|----------------------------------|---------------|---------------|------|----------------|--|
| MS                    | Sample ID: HS14080841-01MS | Units: ug/L      |         |                       | Analysis Date: 26-Aug-2014 12:43 |               |               |      |                |  |
| Client ID:            | Run ID: SV-6_240005        | SeqNo: 2984385   |         | PrepDate: 25-Aug-2014 |                                  | DF: 1         |               |      |                |  |
| Analyte               | Result                     | PQL              | SPK Val | SPK Ref Value         | %REC                             | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |  |
| Surr: 2-Fluorophenol  | 3.286                      | 0.20             | 5       | 0                     | 65.7                             | 20 - 120      |               |      |                |  |
| Surr: 4-Terphenyl-d14 | 4.47                       | 0.20             | 5       | 0                     | 89.4                             | 40 - 135      |               |      |                |  |
| Surr: Nitrobenzene-d5 | 3.33                       | 0.20             | 5       | 0                     | 66.6                             | 41 - 120      |               |      |                |  |
| Surr: Phenol-d6       | 3.45                       | 0.20             | 5       | 0                     | 69.0                             | 20 - 120      |               |      |                |  |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85458             |        | Instrument: SV-6                   |         | Method: SW8270        |      |                                         |               |              |           |      |
|-----------------------------|--------|------------------------------------|---------|-----------------------|------|-----------------------------------------|---------------|--------------|-----------|------|
| <b>MSD</b>                  |        | Sample ID: <b>HS14080841-01MSD</b> |         | Units: <b>ug/L</b>    |      | Analysis Date: <b>26-Aug-2014 13:03</b> |               |              |           |      |
| Client ID:                  |        | Run ID: <b>SV-6_240005</b>         |         | SeqNo: <b>2984386</b> |      | PrepDate: <b>25-Aug-2014</b>            |               | DF: <b>1</b> |           |      |
| Analyte                     | Result | PQL                                | SPK Val | SPK Ref Value         | %REC | Control Limit                           | RPD Ref Value | %RPD         | RPD Limit | Qual |
| 1,1'-Biphenyl               | 3.062  | 0.20                               | 5       | 0                     | 61.2 | 45 - 125                                | 3.328         | 8.32         | 20        |      |
| 1-Methylnaphthalene         | 3.008  | 0.10                               | 5       | 0                     | 60.2 | 45 - 120                                | 3.329         | 10.1         | 20        |      |
| 2,4,5-Trichlorophenol       | 3.432  | 0.20                               | 5       | 0                     | 68.6 | 46 - 120                                | 3.798         | 10.1         | 20        |      |
| 2,4,6-Trichlorophenol       | 3.253  | 0.20                               | 5       | 0                     | 65.1 | 42 - 120                                | 3.814         | 15.9         | 20        |      |
| 2,4-Dichlorophenol          | 3.003  | 0.20                               | 5       | 0                     | 60.1 | 49 - 120                                | 3.339         | 10.6         | 20        |      |
| 2,4-Dimethylphenol          | 2.918  | 0.20                               | 5       | 0                     | 58.4 | 35 - 120                                | 3.23          | 10.1         | 20        |      |
| 2,4-Dinitrophenol           | 3.624  | 1.0                                | 5       | 0                     | 72.5 | 15 - 120                                | 4.251         | 15.9         | 50        |      |
| 2,4-Dinitrotoluene          | 3.712  | 0.20                               | 5       | 0                     | 74.2 | 50 - 122                                | 4.087         | 9.61         | 20        |      |
| 2,6-Dinitrotoluene          | 3.771  | 0.20                               | 5       | 0                     | 75.4 | 50 - 120                                | 4.166         | 9.96         | 20        |      |
| 2-Chloronaphthalene         | 3.152  | 0.20                               | 5       | 0                     | 63.0 | 50 - 120                                | 3.557         | 12.1         | 20        |      |
| 2-Chlorophenol              | 2.994  | 0.20                               | 5       | 0                     | 59.9 | 40 - 120                                | 3.299         | 9.67         | 20        |      |
| 2-Methylnaphthalene         | 3.009  | 0.10                               | 5       | 0                     | 60.2 | 50 - 120                                | 3.308         | 9.48         | 20        |      |
| 2-Methylphenol              | 2.909  | 0.20                               | 5       | 0                     | 58.2 | 45 - 120                                | 3.282         | 12           | 20        |      |
| 2-Nitroaniline              | 3.805  | 0.20                               | 5       | 0                     | 76.1 | 28 - 139                                | 4.162         | 8.96         | 20        |      |
| 2-Nitrophenol               | 3.063  | 0.20                               | 5       | 0                     | 61.3 | 40 - 120                                | 3.246         | 5.81         | 20        |      |
| 3&4-Methylphenol            | 2.965  | 0.20                               | 5       | 0                     | 59.3 | 35 - 120                                | 3.339         | 11.9         | 20        |      |
| 3,3'-Dichlorobenzidine      | 3.27   | 0.20                               | 5       | 0                     | 65.4 | 15 - 120                                | 3.909         | 17.8         | 20        |      |
| 3-Nitroaniline              | 3.379  | 0.20                               | 5       | 0                     | 67.6 | 30 - 120                                | 3.853         | 13.1         | 20        |      |
| 4,6-Dinitro-2-methylphenol  | 3.271  | 0.20                               | 5       | 0                     | 65.4 | 25 - 121                                | 3.742         | 13.4         | 20        |      |
| 4-Bromophenyl phenyl ether  | 3.274  | 0.20                               | 5       | 0                     | 65.5 | 45 - 120                                | 3.624         | 10.1         | 20        |      |
| 4-Chloro-3-methylphenol     | 3.091  | 0.20                               | 5       | 0                     | 61.8 | 47 - 120                                | 3.523         | 13.1         | 20        |      |
| 4-Chloroaniline             | 2.76   | 0.20                               | 5       | 0                     | 55.2 | 20 - 120                                | 3.2           | 14.8         | 20        |      |
| 4-Chlorophenyl phenyl ether | 3.248  | 0.20                               | 5       | 0                     | 65.0 | 50 - 120                                | 3.552         | 8.94         | 20        |      |
| 4-Nitroaniline              | 3.472  | 0.20                               | 5       | 0                     | 69.4 | 30 - 133                                | 4.097         | 16.5         | 20        |      |
| 4-Nitrophenol               | 3.38   | 1.0                                | 5       | 0                     | 67.6 | 30 - 130                                | 4.04          | 17.8         | 20        |      |
| Acenaphthene                | 3.245  | 0.10                               | 5       | 0                     | 64.9 | 45 - 120                                | 3.262         | 0.519        | 20        |      |
| Acenaphthylene              | 3.143  | 0.10                               | 5       | 0                     | 62.9 | 47 - 120                                | 3.485         | 10.3         | 20        |      |
| Acetophenone                | 2.654  | 0.20                               | 5       | 0                     | 53.1 | 40 - 120                                | 2.953         | 10.7         | 20        |      |
| Anthracene                  | 3.33   | 0.10                               | 5       | 0                     | 66.6 | 45 - 120                                | 3.698         | 10.5         | 20        |      |
| Atrazine                    | 3.432  | 0.20                               | 5       | 0                     | 68.6 | 40 - 130                                | 3.857         | 11.7         | 20        |      |
| Benz(a)anthracene           | 3.849  | 0.10                               | 5       | 0                     | 77.0 | 40 - 120                                | 4.283         | 10.7         | 20        |      |
| Benzaldehyde                | 0.8224 | 0.20                               | 5       | 0                     | 16.4 | 15 - 120                                | 0.8083        | 1.73         | 30        |      |
| Benzo(a)pyrene              | 3.623  | 0.10                               | 5       | 0                     | 72.5 | 45 - 120                                | 4.187         | 14.4         | 20        |      |
| Benzo(b)fluoranthene        | 3.632  | 0.10                               | 5       | 0                     | 72.6 | 50 - 120                                | 4.311         | 17.1         | 20        |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85458             |        | Instrument: SV-6            |         | Method: SW8270 |      |                                  |               |       |           |      |
|-----------------------------|--------|-----------------------------|---------|----------------|------|----------------------------------|---------------|-------|-----------|------|
| MSD                         |        | Sample ID: HS14080841-01MSD |         | Units: ug/L    |      | Analysis Date: 26-Aug-2014 13:03 |               |       |           |      |
| Client ID:                  |        | Run ID: SV-6_240005         |         | SeqNo: 2984386 |      | PrepDate: 25-Aug-2014            |               | DF: 1 |           |      |
| Analyte                     | Result | PQL                         | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit | Qual |
| Benzo(g,h,i)perylene        | 3.654  | 0.10                        | 5       | 0              | 73.1 | 42 - 127                         | 4.129         | 12.2  | 20        |      |
| Benzo(k)fluoranthene        | 3.77   | 0.10                        | 5       | 0              | 75.4 | 45 - 127                         | 4.126         | 9.01  | 20        |      |
| Bis(2-chloroethoxy)methane  | 2.86   | 0.20                        | 5       | 0              | 57.2 | 45 - 120                         | 3.136         | 9.19  | 20        |      |
| Bis(2-chloroethyl)ether     | 2.86   | 0.20                        | 5       | 0              | 57.2 | 37 - 121                         | 3.127         | 8.94  | 20        |      |
| Bis(2-chloroisopropyl)ether | 2.852  | 0.20                        | 5       | 0              | 57.0 | 40 - 120                         | 3.165         | 10.4  | 20        |      |
| Bis(2-ethylhexyl)phthalate  | 4.358  | 0.20                        | 5       | 0.3413         | 80.3 | 40 - 139                         | 4.759         | 8.79  | 20        |      |
| Butyl benzyl phthalate      | 3.841  | 0.20                        | 5       | 0              | 76.8 | 47 - 123                         | 4.443         | 14.5  | 20        |      |
| Caprolactam                 | 3.539  | 0.20                        | 5       | 0.1031         | 68.7 | 35 - 134                         | 4.161         | 16.2  | 20        |      |
| Carbazole                   | 3.536  | 0.20                        | 5       | 0              | 70.7 | 42 - 128                         | 3.989         | 12    | 20        |      |
| Chrysene                    | 3.687  | 0.10                        | 5       | 0              | 73.7 | 43 - 120                         | 4.107         | 10.8  | 20        |      |
| Dibenz(a,h)anthracene       | 3.638  | 0.10                        | 5       | 0              | 72.8 | 45 - 125                         | 4.16          | 13.4  | 20        |      |
| Dibenzofuran                | 3.158  | 0.10                        | 5       | 0              | 63.2 | 50 - 120                         | 3.548         | 11.6  | 20        |      |
| Diethyl phthalate           | 3.386  | 0.20                        | 5       | 0              | 67.7 | 41 - 120                         | 3.898         | 14.1  | 20        |      |
| Dimethyl phthalate          | 3.37   | 0.20                        | 5       | 0              | 67.4 | 40 - 122                         | 3.736         | 10.3  | 20        |      |
| Di-n-butyl phthalate        | 3.51   | 0.20                        | 5       | 0              | 70.2 | 45 - 123                         | 3.96          | 12.1  | 20        |      |
| Di-n-octyl phthalate        | 3.845  | 0.20                        | 5       | 0              | 76.9 | 45 - 129                         | 4.437         | 14.3  | 20        |      |
| Fluoranthene                | 3.512  | 0.10                        | 5       | 0              | 70.2 | 45 - 125                         | 3.957         | 11.9  | 20        |      |
| Fluorene                    | 3.332  | 0.10                        | 5       | 0              | 66.6 | 49 - 120                         | 3.651         | 9.13  | 20        |      |
| Hexachlorobenzene           | 3.153  | 0.20                        | 5       | 0              | 63.1 | 48 - 120                         | 3.561         | 12.2  | 20        |      |
| Hexachlorobutadiene         | 2.933  | 0.20                        | 5       | 0              | 58.7 | 40 - 120                         | 3.16          | 7.45  | 20        |      |
| Hexachlorocyclopentadiene   | 3.072  | 0.20                        | 5       | 0              | 61.4 | 34 - 136                         | 3.302         | 7.24  | 20        |      |
| Hexachloroethane            | 2.794  | 0.20                        | 5       | 0              | 55.9 | 40 - 120                         | 3.045         | 8.57  | 20        |      |
| Indeno(1,2,3-cd)pyrene      | 3.65   | 0.10                        | 5       | 0              | 73.0 | 41 - 128                         | 4.448         | 19.7  | 20        |      |
| Isophorone                  | 2.916  | 0.20                        | 5       | 0              | 58.3 | 40 - 121                         | 3.211         | 9.63  | 20        |      |
| Naphthalene                 | 2.944  | 0.10                        | 5       | 0              | 58.9 | 45 - 120                         | 3.232         | 9.33  | 20        |      |
| Nitrobenzene                | 2.814  | 0.20                        | 5       | 0              | 56.3 | 44 - 120                         | 3.103         | 9.78  | 20        |      |
| N-Nitrosodi-n-propylamine   | 2.759  | 0.20                        | 5       | 0              | 55.2 | 40 - 120                         | 3.011         | 8.73  | 20        |      |
| N-Nitrosodiphenylamine      | 3.217  | 0.20                        | 5       | 0              | 64.3 | 40 - 125                         | 3.603         | 11.3  | 20        |      |
| Pentachlorophenol           | 3.749  | 0.20                        | 5       | 0              | 75.0 | 19 - 121                         | 4.279         | 13.2  | 20        |      |
| Phenanthrene                | 3.418  | 0.10                        | 5       | 0              | 68.4 | 45 - 121                         | 3.824         | 11.2  | 20        |      |
| Phenol                      | 2.925  | 0.20                        | 5       | 0              | 58.5 | 20 - 124                         | 3.242         | 10.3  | 20        |      |
| Pyrene                      | 3.77   | 0.10                        | 5       | 0              | 75.4 | 40 - 130                         | 4.242         | 11.8  | 20        |      |
| Surr: 2,4,6-Tribromophenol  | 3.892  | 0.20                        | 5       | 0              | 77.8 | 34 - 129                         | 4.415         | 12.6  |           |      |
| Surr: 2-Fluorobiphenyl      | 3.177  | 0.20                        | 5       | 0              | 63.5 | 40 - 125                         | 3.532         | 10.6  |           |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85458                                    |                                    | Instrument: SV-6      |         | Method: SW8270                          |                                                 |
|----------------------------------------------------|------------------------------------|-----------------------|---------|-----------------------------------------|-------------------------------------------------|
| <b>MSD</b>                                         | Sample ID: <b>HS14080841-01MSD</b> | Units: <b>ug/L</b>    |         | Analysis Date: <b>26-Aug-2014 13:03</b> |                                                 |
| Client ID:                                         | Run ID: <b>SV-6_240005</b>         | SeqNo: <b>2984386</b> |         | PrepDate: <b>25-Aug-2014</b>            | DF: <b>1</b>                                    |
| Analyte                                            | Result                             | PQL                   | SPK Val | SPK Ref Value %REC                      | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| <i>Surr: 2-Fluorophenol</i>                        | 3.01                               | 0.20                  | 5       | 0 60.2                                  | 20 - 120 3.286 8.75                             |
| <i>Surr: 4-Terphenyl-d14</i>                       | 3.953                              | 0.20                  | 5       | 0 79.1                                  | 40 - 135 4.47 12.3                              |
| <i>Surr: Nitrobenzene-d5</i>                       | 2.962                              | 0.20                  | 5       | 0 59.2                                  | 41 - 120 3.33 11.7                              |
| <i>Surr: Phenol-d6</i>                             | 3.126                              | 0.20                  | 5       | 0 62.5                                  | 20 - 120 3.45 9.86                              |
| The following samples were analyzed in this batch: |                                    |                       |         |                                         |                                                 |
| HS14080845-01                                      |                                    | HS14080845-02         |         | HS14080845-03                           |                                                 |
| HS14080845-05                                      |                                    | HS14080845-06         |         | HS14080845-07                           |                                                 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85507             |        |                       | Instrument: SV-6 |                | Method: SW8270 |                                  |               |       |                |
|-----------------------------|--------|-----------------------|------------------|----------------|----------------|----------------------------------|---------------|-------|----------------|
| MBLK                        |        | Sample ID: MBLK-85507 |                  | Units: ug/L    |                | Analysis Date: 27-Aug-2014 13:20 |               |       |                |
| Client ID:                  |        | Run ID: SV-6_240422   |                  | SeqNo: 2992944 |                | PrepDate: 26-Aug-2014            |               | DF: 1 |                |
| Analyte                     | Result | PQL                   | SPK Val          | SPK Ref Value  | %REC           | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit Qual |
| 1,1'-Biphenyl               | ND     | 0.20                  |                  |                |                |                                  |               |       |                |
| 1-Methylnaphthalene         | ND     | 0.10                  |                  |                |                |                                  |               |       |                |
| 2,4,5-Trichlorophenol       | ND     | 0.20                  |                  |                |                |                                  |               |       |                |
| 2,4,6-Trichlorophenol       | ND     | 0.20                  |                  |                |                |                                  |               |       |                |
| 2,4-Dichlorophenol          | ND     | 0.20                  |                  |                |                |                                  |               |       |                |
| 2,4-Dimethylphenol          | ND     | 0.20                  |                  |                |                |                                  |               |       |                |
| 2,4-Dinitrophenol           | ND     | 1.0                   |                  |                |                |                                  |               |       |                |
| 2,4-Dinitrotoluene          | ND     | 0.20                  |                  |                |                |                                  |               |       |                |
| 2,6-Dinitrotoluene          | ND     | 0.20                  |                  |                |                |                                  |               |       |                |
| 2-Chloronaphthalene         | ND     | 0.20                  |                  |                |                |                                  |               |       |                |
| 2-Chlorophenol              | ND     | 0.20                  |                  |                |                |                                  |               |       |                |
| 2-Methylnaphthalene         | ND     | 0.10                  |                  |                |                |                                  |               |       |                |
| 2-Methylphenol              | ND     | 0.20                  |                  |                |                |                                  |               |       |                |
| 2-Nitroaniline              | ND     | 0.20                  |                  |                |                |                                  |               |       |                |
| 2-Nitrophenol               | ND     | 0.20                  |                  |                |                |                                  |               |       |                |
| 3&4-Methylphenol            | ND     | 0.20                  |                  |                |                |                                  |               |       |                |
| 3,3'-Dichlorobenzidine      | ND     | 0.20                  |                  |                |                |                                  |               |       |                |
| 3-Nitroaniline              | ND     | 0.20                  |                  |                |                |                                  |               |       |                |
| 4,6-Dinitro-2-methylphenol  | ND     | 0.20                  |                  |                |                |                                  |               |       |                |
| 4-Bromophenyl phenyl ether  | ND     | 0.20                  |                  |                |                |                                  |               |       |                |
| 4-Chloro-3-methylphenol     | ND     | 0.20                  |                  |                |                |                                  |               |       |                |
| 4-Chloroaniline             | ND     | 0.20                  |                  |                |                |                                  |               |       |                |
| 4-Chlorophenyl phenyl ether | ND     | 0.20                  |                  |                |                |                                  |               |       |                |
| 4-Nitroaniline              | ND     | 0.20                  |                  |                |                |                                  |               |       |                |
| 4-Nitrophenol               | ND     | 1.0                   |                  |                |                |                                  |               |       |                |
| Acenaphthene                | ND     | 0.10                  |                  |                |                |                                  |               |       |                |
| Acenaphthylene              | ND     | 0.10                  |                  |                |                |                                  |               |       |                |
| Acetophenone                | ND     | 0.20                  |                  |                |                |                                  |               |       |                |
| Anthracene                  | ND     | 0.10                  |                  |                |                |                                  |               |       |                |
| Atrazine                    | ND     | 0.20                  |                  |                |                |                                  |               |       |                |
| Benz(a)anthracene           | ND     | 0.10                  |                  |                |                |                                  |               |       |                |
| Benzaldehyde                | ND     | 0.20                  |                  |                |                |                                  |               |       |                |
| Benzo(a)pyrene              | ND     | 0.10                  |                  |                |                |                                  |               |       |                |
| Benzo(b)fluoranthene        | ND     | 0.10                  |                  |                |                |                                  |               |       |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85507             |                       | Instrument: SV-6 |         | Method: SW8270                   |                                                 |
|-----------------------------|-----------------------|------------------|---------|----------------------------------|-------------------------------------------------|
| MBLK                        | Sample ID: MBLK-85507 | Units: ug/L      |         | Analysis Date: 27-Aug-2014 13:20 |                                                 |
| Client ID:                  | Run ID: SV-6_240422   | SeqNo: 2992944   |         | PrepDate: 26-Aug-2014            | DF: 1                                           |
| Analyte                     | Result                | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Benzo(g,h,i)perylene        | ND                    | 0.10             |         |                                  |                                                 |
| Benzo(k)fluoranthene        | ND                    | 0.10             |         |                                  |                                                 |
| Bis(2-chloroethoxy)methane  | ND                    | 0.20             |         |                                  |                                                 |
| Bis(2-chloroethyl)ether     | ND                    | 0.20             |         |                                  |                                                 |
| Bis(2-chloroisopropyl)ether | ND                    | 0.20             |         |                                  |                                                 |
| Bis(2-ethylhexyl)phthalate  | ND                    | 0.20             |         |                                  |                                                 |
| Butyl benzyl phthalate      | ND                    | 0.20             |         |                                  |                                                 |
| Caprolactam                 | ND                    | 0.20             |         |                                  |                                                 |
| Carbazole                   | ND                    | 0.20             |         |                                  |                                                 |
| Chrysene                    | ND                    | 0.10             |         |                                  |                                                 |
| Dibenz(a,h)anthracene       | ND                    | 0.10             |         |                                  |                                                 |
| Dibenzofuran                | ND                    | 0.10             |         |                                  |                                                 |
| Diethyl phthalate           | ND                    | 0.20             |         |                                  |                                                 |
| Dimethyl phthalate          | ND                    | 0.20             |         |                                  |                                                 |
| Di-n-butyl phthalate        | ND                    | 0.20             |         |                                  |                                                 |
| Di-n-octyl phthalate        | ND                    | 0.20             |         |                                  |                                                 |
| Fluoranthene                | ND                    | 0.10             |         |                                  |                                                 |
| Fluorene                    | ND                    | 0.10             |         |                                  |                                                 |
| Hexachlorobenzene           | ND                    | 0.20             |         |                                  |                                                 |
| Hexachlorobutadiene         | ND                    | 0.20             |         |                                  |                                                 |
| Hexachlorocyclopentadiene   | ND                    | 0.20             |         |                                  |                                                 |
| Hexachloroethane            | ND                    | 0.20             |         |                                  |                                                 |
| Indeno(1,2,3-cd)pyrene      | ND                    | 0.10             |         |                                  |                                                 |
| Isophorone                  | ND                    | 0.20             |         |                                  |                                                 |
| Naphthalene                 | ND                    | 0.10             |         |                                  |                                                 |
| Nitrobenzene                | ND                    | 0.20             |         |                                  |                                                 |
| N-Nitrosodi-n-propylamine   | ND                    | 0.20             |         |                                  |                                                 |
| N-Nitrosodiphenylamine      | ND                    | 0.20             |         |                                  |                                                 |
| Pentachlorophenol           | ND                    | 0.20             |         |                                  |                                                 |
| Phenanthrene                | ND                    | 0.10             |         |                                  |                                                 |
| Phenol                      | ND                    | 0.20             |         |                                  |                                                 |
| Pyrene                      | ND                    | 0.10             |         |                                  |                                                 |
| Surr: 2,4,6-Tribromophenol  | 3.935                 | 0.20             | 5       | 0 78.7                           | 34 - 129                                        |
| Surr: 2-Fluorobiphenyl      | 3.646                 | 0.20             | 5       | 0 72.9                           | 40 - 125                                        |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
WorkOrder: HS14080845  
Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85507       |                       | Instrument: SV-6 |         | Method: SW8270        |                                  |               |               |      |                |  |
|-----------------------|-----------------------|------------------|---------|-----------------------|----------------------------------|---------------|---------------|------|----------------|--|
| MBLK                  | Sample ID: MBLK-85507 | Units: ug/L      |         |                       | Analysis Date: 27-Aug-2014 13:20 |               |               |      |                |  |
| Client ID:            | Run ID: SV-6_240422   | SeqNo: 2992944   |         | PrepDate: 26-Aug-2014 |                                  | DF: 1         |               |      |                |  |
| Analyte               | Result                | PQL              | SPK Val | SPK Ref Value         | %REC                             | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |  |
| Surr: 2-Fluorophenol  | 3.428                 | 0.20             | 5       | 0                     | 68.6                             | 20 - 120      |               |      |                |  |
| Surr: 4-Terphenyl-d14 | 4.214                 | 0.20             | 5       | 0                     | 84.3                             | 40 - 135      |               |      |                |  |
| Surr: Nitrobenzene-d5 | 3.514                 | 0.20             | 5       | 0                     | 70.3                             | 41 - 120      |               |      |                |  |
| Surr: Phenol-d6       | 3.474                 | 0.20             | 5       | 0                     | 69.5                             | 20 - 120      |               |      |                |  |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85507             |        | Instrument: SV-6     |         | Method: SW8270 |      |                                  |               |       |                |
|-----------------------------|--------|----------------------|---------|----------------|------|----------------------------------|---------------|-------|----------------|
| LCS                         |        | Sample ID: LCS-85507 |         | Units: ug/L    |      | Analysis Date: 27-Aug-2014 13:39 |               |       |                |
| Client ID:                  |        | Run ID: SV-6_240422  |         | SeqNo: 2992945 |      | PrepDate: 26-Aug-2014            |               | DF: 1 |                |
| Analyte                     | Result | PQL                  | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit Qual |
| 1,1'-Biphenyl               | 3.335  | 0.20                 | 5       | 0              | 66.7 | 45 - 125                         |               |       |                |
| 1-Methylnaphthalene         | 3.369  | 0.10                 | 5       | 0              | 67.4 | 45 - 120                         |               |       |                |
| 2,4,5-Trichlorophenol       | 3.492  | 0.20                 | 5       | 0              | 69.8 | 46 - 120                         |               |       |                |
| 2,4,6-Trichlorophenol       | 3.536  | 0.20                 | 5       | 0              | 70.7 | 42 - 120                         |               |       |                |
| 2,4-Dichlorophenol          | 3.373  | 0.20                 | 5       | 0              | 67.5 | 49 - 120                         |               |       |                |
| 2,4-Dimethylphenol          | 2.952  | 0.20                 | 5       | 0              | 59.0 | 35 - 120                         |               |       |                |
| 2,4-Dinitrophenol           | 3.651  | 1.0                  | 5       | 0              | 73.0 | 15 - 120                         |               |       |                |
| 2,4-Dinitrotoluene          | 3.652  | 0.20                 | 5       | 0              | 73.0 | 50 - 122                         |               |       |                |
| 2,6-Dinitrotoluene          | 3.72   | 0.20                 | 5       | 0              | 74.4 | 50 - 120                         |               |       |                |
| 2-Chloronaphthalene         | 2.981  | 0.20                 | 5       | 0              | 59.6 | 50 - 120                         |               |       |                |
| 2-Chlorophenol              | 3.351  | 0.20                 | 5       | 0              | 67.0 | 40 - 120                         |               |       |                |
| 2-Methylnaphthalene         | 3.396  | 0.10                 | 5       | 0              | 67.9 | 50 - 120                         |               |       |                |
| 2-Methylphenol              | 3.209  | 0.20                 | 5       | 0              | 64.2 | 45 - 120                         |               |       |                |
| 2-Nitroaniline              | 3.826  | 0.20                 | 5       | 0              | 76.5 | 28 - 139                         |               |       |                |
| 2-Nitrophenol               | 3.446  | 0.20                 | 5       | 0              | 68.9 | 40 - 120                         |               |       |                |
| 3&4-Methylphenol            | 3.211  | 0.20                 | 5       | 0              | 64.2 | 35 - 120                         |               |       |                |
| 3,3'-Dichlorobenzidine      | 4.007  | 0.20                 | 5       | 0              | 80.1 | 15 - 120                         |               |       |                |
| 3-Nitroaniline              | 3.442  | 0.20                 | 5       | 0              | 68.8 | 30 - 120                         |               |       |                |
| 4,6-Dinitro-2-methylphenol  | 3.443  | 0.20                 | 5       | 0              | 68.9 | 25 - 121                         |               |       |                |
| 4-Bromophenyl phenyl ether  | 3.481  | 0.20                 | 5       | 0              | 69.6 | 45 - 120                         |               |       |                |
| 4-Chloro-3-methylphenol     | 3.461  | 0.20                 | 5       | 0              | 69.2 | 47 - 120                         |               |       |                |
| 4-Chloroaniline             | 3.215  | 0.20                 | 5       | 0              | 64.3 | 20 - 120                         |               |       |                |
| 4-Chlorophenyl phenyl ether | 3.392  | 0.20                 | 5       | 0              | 67.8 | 50 - 120                         |               |       |                |
| 4-Nitroaniline              | 3.487  | 0.20                 | 5       | 0              | 69.7 | 30 - 133                         |               |       |                |
| 4-Nitrophenol               | 3.568  | 1.0                  | 5       | 0              | 71.4 | 30 - 130                         |               |       |                |
| Acenaphthene                | 2.992  | 0.10                 | 5       | 0              | 59.8 | 45 - 120                         |               |       |                |
| Acenaphthylene              | 3.322  | 0.10                 | 5       | 0              | 66.4 | 47 - 120                         |               |       |                |
| Acetophenone                | 3.029  | 0.20                 | 5       | 0              | 60.6 | 40 - 120                         |               |       |                |
| Anthracene                  | 3.436  | 0.10                 | 5       | 0              | 68.7 | 45 - 120                         |               |       |                |
| Atrazine                    | 3.639  | 0.20                 | 5       | 0              | 72.8 | 40 - 130                         |               |       |                |
| Benz(a)anthracene           | 3.938  | 0.10                 | 5       | 0              | 78.8 | 40 - 120                         |               |       |                |
| Benzaldehyde                | 0.9576 | 0.20                 | 5       | 0              | 19.2 | 15 - 120                         |               |       |                |
| Benzo(a)pyrene              | 3.828  | 0.10                 | 5       | 0              | 76.6 | 45 - 120                         |               |       |                |
| Benzo(b)fluoranthene        | 3.842  | 0.10                 | 5       | 0              | 76.8 | 50 - 120                         |               |       |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85507             |        | Instrument: SV-6     |         | Method: SW8270 |      |                                  |               |       |                |
|-----------------------------|--------|----------------------|---------|----------------|------|----------------------------------|---------------|-------|----------------|
| LCS                         |        | Sample ID: LCS-85507 |         | Units: ug/L    |      | Analysis Date: 27-Aug-2014 13:39 |               |       |                |
| Client ID:                  |        | Run ID: SV-6_240422  |         | SeqNo: 2992945 |      | PrepDate: 26-Aug-2014            |               | DF: 1 |                |
| Analyte                     | Result | PQL                  | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit Qual |
| Benzo(g,h,i)perylene        | 3.689  | 0.10                 | 5       | 0              | 73.8 | 42 - 127                         |               |       |                |
| Benzo(k)fluoranthene        | 3.792  | 0.10                 | 5       | 0              | 75.8 | 45 - 127                         |               |       |                |
| Bis(2-chloroethoxy)methane  | 3.24   | 0.20                 | 5       | 0              | 64.8 | 45 - 120                         |               |       |                |
| Bis(2-chloroethyl)ether     | 3.155  | 0.20                 | 5       | 0              | 63.1 | 37 - 121                         |               |       |                |
| Bis(2-chloroisopropyl)ether | 3.268  | 0.20                 | 5       | 0              | 65.4 | 40 - 120                         |               |       |                |
| Bis(2-ethylhexyl)phthalate  | 3.919  | 0.20                 | 5       | 0              | 78.4 | 40 - 139                         |               |       |                |
| Butyl benzyl phthalate      | 3.99   | 0.20                 | 5       | 0              | 79.8 | 47 - 123                         |               |       |                |
| Caprolactam                 | 3.734  | 0.20                 | 5       | 0              | 74.7 | 35 - 134                         |               |       |                |
| Carbazole                   | 3.531  | 0.20                 | 5       | 0              | 70.6 | 42 - 128                         |               |       |                |
| Chrysene                    | 3.834  | 0.10                 | 5       | 0              | 76.7 | 43 - 120                         |               |       |                |
| Dibenz(a,h)anthracene       | 3.371  | 0.10                 | 5       | 0              | 67.4 | 45 - 125                         |               |       |                |
| Dibenzofuran                | 3.316  | 0.10                 | 5       | 0              | 66.3 | 50 - 120                         |               |       |                |
| Diethyl phthalate           | 3.452  | 0.20                 | 5       | 0              | 69.0 | 41 - 120                         |               |       |                |
| Dimethyl phthalate          | 3.397  | 0.20                 | 5       | 0              | 67.9 | 40 - 122                         |               |       |                |
| Di-n-butyl phthalate        | 3.689  | 0.20                 | 5       | 0              | 73.8 | 45 - 123                         |               |       |                |
| Di-n-octyl phthalate        | 4.04   | 0.20                 | 5       | 0              | 80.8 | 45 - 129                         |               |       |                |
| Fluoranthene                | 3.734  | 0.10                 | 5       | 0              | 74.7 | 45 - 125                         |               |       |                |
| Fluorene                    | 3.456  | 0.10                 | 5       | 0              | 69.1 | 49 - 120                         |               |       |                |
| Hexachlorobenzene           | 3.428  | 0.20                 | 5       | 0              | 68.6 | 48 - 120                         |               |       |                |
| Hexachlorobutadiene         | 3.651  | 0.20                 | 5       | 0              | 73.0 | 40 - 120                         |               |       |                |
| Hexachlorocyclopentadiene   | 3.395  | 0.20                 | 5       | 0              | 67.9 | 34 - 136                         |               |       |                |
| Hexachloroethane            | 2.956  | 0.20                 | 5       | 0              | 59.1 | 40 - 120                         |               |       |                |
| Indeno(1,2,3-cd)pyrene      | 3.875  | 0.10                 | 5       | 0              | 77.5 | 41 - 128                         |               |       |                |
| Isophorone                  | 3.286  | 0.20                 | 5       | 0              | 65.7 | 40 - 121                         |               |       |                |
| Naphthalene                 | 3.388  | 0.10                 | 5       | 0              | 67.8 | 45 - 120                         |               |       |                |
| Nitrobenzene                | 3.196  | 0.20                 | 5       | 0              | 63.9 | 44 - 120                         |               |       |                |
| N-Nitrosodi-n-propylamine   | 3.019  | 0.20                 | 5       | 0              | 60.4 | 40 - 120                         |               |       |                |
| N-Nitrosodiphenylamine      | 3.342  | 0.20                 | 5       | 0              | 66.8 | 40 - 125                         |               |       |                |
| Pentachlorophenol           | 3.723  | 0.20                 | 5       | 0              | 74.5 | 19 - 121                         |               |       |                |
| Phenanthrene                | 3.523  | 0.10                 | 5       | 0              | 70.5 | 45 - 121                         |               |       |                |
| Phenol                      | 3.202  | 0.20                 | 5       | 0              | 64.0 | 20 - 124                         |               |       |                |
| Pyrene                      | 3.86   | 0.10                 | 5       | 0              | 77.2 | 40 - 130                         |               |       |                |
| Surr: 2,4,6-Tribromophenol  | 3.931  | 0.20                 | 5       | 0              | 78.6 | 34 - 129                         |               |       |                |
| Surr: 2-Fluorobiphenyl      | 3.485  | 0.20                 | 5       | 0              | 69.7 | 40 - 125                         |               |       |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
WorkOrder: HS14080845  
Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85507       |                      | Instrument: SV-6 |         | Method: SW8270                   |                                                 |
|-----------------------|----------------------|------------------|---------|----------------------------------|-------------------------------------------------|
| LCS                   | Sample ID: LCS-85507 | Units: ug/L      |         | Analysis Date: 27-Aug-2014 13:39 |                                                 |
| Client ID:            | Run ID: SV-6_240422  | SeqNo: 2992945   |         | PrepDate: 26-Aug-2014            | DF: 1                                           |
| Analyte               | Result               | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Surr: 2-Fluorophenol  | 3.386                | 0.20             | 5       | 0 67.7                           | 20 - 120                                        |
| Surr: 4-Terphenyl-d14 | 4.186                | 0.20             | 5       | 0 83.7                           | 40 - 135                                        |
| Surr: Nitrobenzene-d5 | 3.396                | 0.20             | 5       | 0 67.9                           | 41 - 120                                        |
| Surr: Phenol-d6       | 3.455                | 0.20             | 5       | 0 69.1                           | 20 - 120                                        |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85507             |        | Instrument: SV-6      |         | Method: SW8270 |      |                                  |               |       |           |      |
|-----------------------------|--------|-----------------------|---------|----------------|------|----------------------------------|---------------|-------|-----------|------|
| LCSD                        |        | Sample ID: LCSD-85507 |         | Units: ug/L    |      | Analysis Date: 27-Aug-2014 13:58 |               |       |           |      |
| Client ID:                  |        | Run ID: SV-6_240422   |         | SeqNo: 2992946 |      | PrepDate: 26-Aug-2014            |               | DF: 1 |           |      |
| Analyte                     | Result | PQL                   | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit | Qual |
| 1,1'-Biphenyl               | 3.441  | 0.20                  | 5       | 0              | 68.8 | 45 - 125                         | 3.335         | 3.12  | 20        |      |
| 1-Methylnaphthalene         | 3.432  | 0.10                  | 5       | 0              | 68.6 | 45 - 120                         | 3.369         | 1.86  | 20        |      |
| 2,4,5-Trichlorophenol       | 3.636  | 0.20                  | 5       | 0              | 72.7 | 46 - 120                         | 3.492         | 4.05  | 20        |      |
| 2,4,6-Trichlorophenol       | 3.844  | 0.20                  | 5       | 0              | 76.9 | 42 - 120                         | 3.536         | 8.35  | 20        |      |
| 2,4-Dichlorophenol          | 3.468  | 0.20                  | 5       | 0              | 69.4 | 49 - 120                         | 3.373         | 2.77  | 20        |      |
| 2,4-Dimethylphenol          | 3.041  | 0.20                  | 5       | 0              | 60.8 | 35 - 120                         | 2.952         | 2.97  | 20        |      |
| 2,4-Dinitrophenol           | 3.854  | 1.0                   | 5       | 0              | 77.1 | 15 - 120                         | 3.651         | 5.41  | 50        |      |
| 2,4-Dinitrotoluene          | 3.915  | 0.20                  | 5       | 0              | 78.3 | 50 - 122                         | 3.652         | 6.96  | 20        |      |
| 2,6-Dinitrotoluene          | 4.044  | 0.20                  | 5       | 0              | 80.9 | 50 - 120                         | 3.72          | 8.37  | 20        |      |
| 2-Chloronaphthalene         | 3.876  | 0.20                  | 5       | 0              | 77.5 | 50 - 120                         | 2.981         | 26.1  | 20        | R    |
| 2-Chlorophenol              | 3.387  | 0.20                  | 5       | 0              | 67.7 | 40 - 120                         | 3.351         | 1.05  | 20        |      |
| 2-Methylnaphthalene         | 3.45   | 0.10                  | 5       | 0              | 69.0 | 50 - 120                         | 3.396         | 1.59  | 20        |      |
| 2-Methylphenol              | 3.247  | 0.20                  | 5       | 0              | 64.9 | 45 - 120                         | 3.209         | 1.16  | 20        |      |
| 2-Nitroaniline              | 4.03   | 0.20                  | 5       | 0              | 80.6 | 28 - 139                         | 3.826         | 5.18  | 20        |      |
| 2-Nitrophenol               | 3.515  | 0.20                  | 5       | 0              | 70.3 | 40 - 120                         | 3.446         | 1.98  | 20        |      |
| 3&4-Methylphenol            | 3.239  | 0.20                  | 5       | 0              | 64.8 | 35 - 120                         | 3.211         | 0.876 | 20        |      |
| 3,3'-Dichlorobenzidine      | 3.98   | 0.20                  | 5       | 0              | 79.6 | 15 - 120                         | 4.007         | 0.675 | 20        |      |
| 3-Nitroaniline              | 3.74   | 0.20                  | 5       | 0              | 74.8 | 30 - 120                         | 3.442         | 8.3   | 20        |      |
| 4,6-Dinitro-2-methylphenol  | 3.296  | 0.20                  | 5       | 0              | 65.9 | 25 - 121                         | 3.443         | 4.37  | 30        |      |
| 4-Bromophenyl phenyl ether  | 3.44   | 0.20                  | 5       | 0              | 68.8 | 45 - 120                         | 3.481         | 1.18  | 20        |      |
| 4-Chloro-3-methylphenol     | 3.346  | 0.20                  | 5       | 0              | 66.9 | 47 - 120                         | 3.461         | 3.39  | 20        |      |
| 4-Chloroaniline             | 3.238  | 0.20                  | 5       | 0              | 64.8 | 20 - 120                         | 3.215         | 0.723 | 20        |      |
| 4-Chlorophenyl phenyl ether | 3.608  | 0.20                  | 5       | 0              | 72.2 | 50 - 120                         | 3.392         | 6.19  | 20        |      |
| 4-Nitroaniline              | 3.734  | 0.20                  | 5       | 0              | 74.7 | 30 - 133                         | 3.487         | 6.83  | 20        |      |
| 4-Nitrophenol               | 3.903  | 1.0                   | 5       | 0              | 78.1 | 30 - 130                         | 3.568         | 8.97  | 20        |      |
| Acenaphthene                | 3.672  | 0.10                  | 5       | 0              | 73.4 | 45 - 120                         | 2.992         | 20.4  | 20        | R    |
| Acenaphthylene              | 3.552  | 0.10                  | 5       | 0              | 71.0 | 47 - 120                         | 3.322         | 6.68  | 20        |      |
| Acetophenone                | 3.106  | 0.20                  | 5       | 0              | 62.1 | 40 - 120                         | 3.029         | 2.49  | 20        |      |
| Anthracene                  | 3.41   | 0.10                  | 5       | 0              | 68.2 | 45 - 120                         | 3.436         | 0.776 | 20        |      |
| Atrazine                    | 3.536  | 0.20                  | 5       | 0              | 70.7 | 40 - 130                         | 3.639         | 2.86  | 20        |      |
| Benz(a)anthracene           | 3.863  | 0.10                  | 5       | 0              | 77.3 | 40 - 120                         | 3.938         | 1.92  | 20        |      |
| Benzaldehyde                | 0.8595 | 0.20                  | 5       | 0              | 17.2 | 15 - 120                         | 0.9576        | 10.8  | 30        |      |
| Benzo(a)pyrene              | 3.656  | 0.10                  | 5       | 0              | 73.1 | 45 - 120                         | 3.828         | 4.59  | 20        |      |
| Benzo(b)fluoranthene        | 3.744  | 0.10                  | 5       | 0              | 74.9 | 50 - 120                         | 3.842         | 2.59  | 20        |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85507             |        | Instrument: SV-6      |         | Method: SW8270 |      |                                  |               |       |           |      |
|-----------------------------|--------|-----------------------|---------|----------------|------|----------------------------------|---------------|-------|-----------|------|
| LCSD                        |        | Sample ID: LCSD-85507 |         | Units: ug/L    |      | Analysis Date: 27-Aug-2014 13:58 |               |       |           |      |
| Client ID:                  |        | Run ID: SV-6_240422   |         | SeqNo: 2992946 |      | PrepDate: 26-Aug-2014            |               | DF: 1 |           |      |
| Analyte                     | Result | PQL                   | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit | Qual |
| Benzo(g,h,i)perylene        | 3.592  | 0.10                  | 5       | 0              | 71.8 | 42 - 127                         | 3.689         | 2.66  | 20        |      |
| Benzo(k)fluoranthene        | 3.647  | 0.10                  | 5       | 0              | 72.9 | 45 - 127                         | 3.792         | 3.88  | 20        |      |
| Bis(2-chloroethoxy)methane  | 3.382  | 0.20                  | 5       | 0              | 67.6 | 45 - 120                         | 3.24          | 4.28  | 20        |      |
| Bis(2-chloroethyl)ether     | 3.18   | 0.20                  | 5       | 0              | 63.6 | 37 - 121                         | 3.155         | 0.807 | 20        |      |
| Bis(2-chloroisopropyl)ether | 3.244  | 0.20                  | 5       | 0              | 64.9 | 40 - 120                         | 3.268         | 0.737 | 20        |      |
| Bis(2-ethylhexyl)phthalate  | 3.84   | 0.20                  | 5       | 0              | 76.8 | 40 - 139                         | 3.919         | 2.02  | 20        |      |
| Butyl benzyl phthalate      | 3.916  | 0.20                  | 5       | 0              | 78.3 | 47 - 123                         | 3.99          | 1.87  | 20        |      |
| Caprolactam                 | 3.77   | 0.20                  | 5       | 0              | 75.4 | 35 - 134                         | 3.734         | 0.978 | 20        |      |
| Carbazole                   | 3.485  | 0.20                  | 5       | 0              | 69.7 | 42 - 128                         | 3.531         | 1.31  | 20        |      |
| Chrysene                    | 3.76   | 0.10                  | 5       | 0              | 75.2 | 43 - 120                         | 3.834         | 1.94  | 20        |      |
| Dibenz(a,h)anthracene       | 3.629  | 0.10                  | 5       | 0              | 72.6 | 45 - 125                         | 3.371         | 7.37  | 20        |      |
| Dibenzofuran                | 3.495  | 0.10                  | 5       | 0              | 69.9 | 50 - 120                         | 3.316         | 5.26  | 20        |      |
| Diethyl phthalate           | 3.623  | 0.20                  | 5       | 0              | 72.5 | 41 - 120                         | 3.452         | 4.82  | 20        |      |
| Dimethyl phthalate          | 3.644  | 0.20                  | 5       | 0              | 72.9 | 40 - 122                         | 3.397         | 7.02  | 20        |      |
| Di-n-butyl phthalate        | 3.585  | 0.20                  | 5       | 0              | 71.7 | 45 - 123                         | 3.689         | 2.86  | 20        |      |
| Di-n-octyl phthalate        | 3.895  | 0.20                  | 5       | 0              | 77.9 | 45 - 129                         | 4.04          | 3.65  | 20        |      |
| Fluoranthene                | 3.601  | 0.10                  | 5       | 0              | 72.0 | 45 - 125                         | 3.734         | 3.64  | 20        |      |
| Fluorene                    | 3.65   | 0.10                  | 5       | 0              | 73.0 | 49 - 120                         | 3.456         | 5.46  | 20        |      |
| Hexachlorobenzene           | 3.407  | 0.20                  | 5       | 0              | 68.1 | 48 - 120                         | 3.428         | 0.635 | 20        |      |
| Hexachlorobutadiene         | 3.539  | 0.20                  | 5       | 0              | 70.8 | 40 - 120                         | 3.651         | 3.12  | 20        |      |
| Hexachlorocyclopentadiene   | 3.704  | 0.20                  | 5       | 0              | 74.1 | 34 - 136                         | 3.395         | 8.72  | 20        |      |
| Hexachloroethane            | 3.142  | 0.20                  | 5       | 0              | 62.8 | 40 - 120                         | 2.956         | 6.11  | 20        |      |
| Indeno(1,2,3-cd)pyrene      | 3.811  | 0.10                  | 5       | 0              | 76.2 | 41 - 128                         | 3.875         | 1.66  | 20        |      |
| Isophorone                  | 3.392  | 0.20                  | 5       | 0              | 67.8 | 40 - 121                         | 3.286         | 3.16  | 20        |      |
| Naphthalene                 | 3.432  | 0.10                  | 5       | 0              | 68.6 | 45 - 120                         | 3.388         | 1.28  | 20        |      |
| Nitrobenzene                | 3.272  | 0.20                  | 5       | 0              | 65.4 | 44 - 120                         | 3.196         | 2.37  | 20        |      |
| N-Nitrosodi-n-propylamine   | 3.209  | 0.20                  | 5       | 0              | 64.2 | 40 - 120                         | 3.019         | 6.1   | 20        |      |
| N-Nitrosodiphenylamine      | 3.359  | 0.20                  | 5       | 0              | 67.2 | 40 - 125                         | 3.342         | 0.504 | 20        |      |
| Pentachlorophenol           | 3.632  | 0.20                  | 5       | 0              | 72.6 | 19 - 121                         | 3.723         | 2.47  | 20        |      |
| Phenanthrene                | 3.504  | 0.10                  | 5       | 0              | 70.1 | 45 - 121                         | 3.523         | 0.535 | 20        |      |
| Phenol                      | 3.265  | 0.20                  | 5       | 0              | 65.3 | 20 - 124                         | 3.202         | 1.94  | 20        |      |
| Pyrene                      | 3.846  | 0.10                  | 5       | 0              | 76.9 | 40 - 130                         | 3.86          | 0.342 | 20        |      |
| Surr: 2,4,6-Tribromophenol  | 4.218  | 0.20                  | 5       | 0              | 84.4 | 34 - 129                         | 3.931         | 7.04  |           |      |
| Surr: 2-Fluorobiphenyl      | 3.648  | 0.20                  | 5       | 0              | 73.0 | 40 - 125                         | 3.485         | 4.58  |           |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
WorkOrder: HS14080845  
Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85507       |                       | Instrument: SV-6 |         | Method: SW8270                   |                                                 |
|-----------------------|-----------------------|------------------|---------|----------------------------------|-------------------------------------------------|
| LCSD                  | Sample ID: LCSD-85507 | Units: ug/L      |         | Analysis Date: 27-Aug-2014 13:58 |                                                 |
| Client ID:            | Run ID: SV-6_240422   | SeqNo: 2992946   |         | PrepDate: 26-Aug-2014            | DF: 1                                           |
| Analyte               | Result                | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Surr: 2-Fluorophenol  | 3.534                 | 0.20             | 5       | 0 70.7                           | 20 - 120 3.386 4.29                             |
| Surr: 4-Terphenyl-d14 | 4.065                 | 0.20             | 5       | 0 81.3                           | 40 - 135 4.186 2.95                             |
| Surr: Nitrobenzene-d5 | 3.563                 | 0.20             | 5       | 0 71.3                           | 41 - 120 3.396 4.78                             |
| Surr: Phenol-d6       | 3.475                 | 0.20             | 5       | 0 69.5                           | 20 - 120 3.455 0.586                            |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85507             |        | Instrument: SV-6           |         | Method: SW8270        |                                                 |
|-----------------------------|--------|----------------------------|---------|-----------------------|-------------------------------------------------|
| MS                          |        | Sample ID: HS14080845-21MS |         | Units: ug/L           |                                                 |
| Client ID: WW-EAST          |        | Run ID: SV-6_240422        |         | SeqNo: 2992948        |                                                 |
|                             |        |                            |         | PrepDate: 26-Aug-2014 |                                                 |
|                             |        |                            |         | DF: 1                 |                                                 |
| Analyte                     | Result | PQL                        | SPK Val | SPK Ref Value %REC    | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| 1,1'-Biphenyl               | 3.399  | 0.20                       | 5       | 0 68.0                | 45 - 125                                        |
| 1-Methylnaphthalene         | 3.317  | 0.10                       | 5       | 0 66.3                | 45 - 120                                        |
| 2,4,5-Trichlorophenol       | 3.584  | 0.20                       | 5       | 0 71.7                | 46 - 120                                        |
| 2,4,6-Trichlorophenol       | 3.752  | 0.20                       | 5       | 0 75.0                | 42 - 120                                        |
| 2,4-Dichlorophenol          | 3.315  | 0.20                       | 5       | 0 66.3                | 49 - 120                                        |
| 2,4-Dimethylphenol          | 3.23   | 0.20                       | 5       | 0 64.6                | 35 - 120                                        |
| 2,4-Dinitrophenol           | 3.412  | 1.0                        | 5       | 0 68.2                | 15 - 120                                        |
| 2,4-Dinitrotoluene          | 3.835  | 0.20                       | 5       | 0 76.7                | 50 - 122                                        |
| 2,6-Dinitrotoluene          | 3.934  | 0.20                       | 5       | 0 78.7                | 50 - 120                                        |
| 2-Chloronaphthalene         | 3.552  | 0.20                       | 5       | 0 71.0                | 50 - 120                                        |
| 2-Chlorophenol              | 3.091  | 0.20                       | 5       | 0 61.8                | 40 - 120                                        |
| 2-Methylnaphthalene         | 3.282  | 0.10                       | 5       | 0 65.6                | 50 - 120                                        |
| 2-Methylphenol              | 3.024  | 0.20                       | 5       | 0 60.5                | 45 - 120                                        |
| 2-Nitroaniline              | 3.97   | 0.20                       | 5       | 0 79.4                | 28 - 139                                        |
| 2-Nitrophenol               | 3.279  | 0.20                       | 5       | 0 65.6                | 40 - 120                                        |
| 3&4-Methylphenol            | 3.008  | 0.20                       | 5       | 0 60.2                | 35 - 120                                        |
| 3,3'-Dichlorobenzidine      | 3.947  | 0.20                       | 5       | 0 78.9                | 15 - 120                                        |
| 3-Nitroaniline              | 3.492  | 0.20                       | 5       | 0 69.8                | 30 - 120                                        |
| 4,6-Dinitro-2-methylphenol  | 3.429  | 0.20                       | 5       | 0 68.6                | 25 - 121                                        |
| 4-Bromophenyl phenyl ether  | 3.459  | 0.20                       | 5       | 0 69.2                | 45 - 120                                        |
| 4-Chloro-3-methylphenol     | 3.361  | 0.20                       | 5       | 0 67.2                | 47 - 120                                        |
| 4-Chloroaniline             | 3.289  | 0.20                       | 5       | 0 65.8                | 20 - 120                                        |
| 4-Chlorophenyl phenyl ether | 3.549  | 0.20                       | 5       | 0 71.0                | 50 - 120                                        |
| 4-Nitroaniline              | 3.726  | 0.20                       | 5       | 0 74.5                | 30 - 133                                        |
| 4-Nitrophenol               | 3.693  | 1.0                        | 5       | 0 73.9                | 30 - 130                                        |
| Acenaphthene                | 3.59   | 0.10                       | 5       | 0 71.8                | 45 - 120                                        |
| Acenaphthylene              | 3.482  | 0.10                       | 5       | 0 69.6                | 47 - 120                                        |
| Acetophenone                | 2.951  | 0.20                       | 5       | 0 59.0                | 40 - 120                                        |
| Anthracene                  | 3.558  | 0.10                       | 5       | 0 71.2                | 45 - 120                                        |
| Atrazine                    | 3.787  | 0.20                       | 5       | 0 75.7                | 40 - 130                                        |
| Benz(a)anthracene           | 3.826  | 0.10                       | 5       | 0 76.5                | 40 - 120                                        |
| Benzaldehyde                | 0.8443 | 0.20                       | 5       | 0 16.9                | 15 - 120                                        |
| Benzo(a)pyrene              | 3.615  | 0.10                       | 5       | 0 72.3                | 45 - 120                                        |
| Benzo(b)fluoranthene        | 4.006  | 0.10                       | 5       | 0 80.1                | 50 - 120                                        |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85507             |        | Instrument: SV-6           |         | Method: SW8270        |                                                 |
|-----------------------------|--------|----------------------------|---------|-----------------------|-------------------------------------------------|
| MS                          |        | Sample ID: HS14080845-21MS |         | Units: ug/L           |                                                 |
| Client ID: WW-EAST          |        | Run ID: SV-6_240422        |         | SeqNo: 2992948        |                                                 |
|                             |        |                            |         | PrepDate: 26-Aug-2014 |                                                 |
|                             |        |                            |         | DF: 1                 |                                                 |
| Analyte                     | Result | PQL                        | SPK Val | SPK Ref Value %REC    | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Benzo(g,h,i)perylene        | 3.719  | 0.10                       | 5       | 0 74.4                | 42 - 127                                        |
| Benzo(k)fluoranthene        | 3.496  | 0.10                       | 5       | 0 69.9                | 45 - 127                                        |
| Bis(2-chloroethoxy)methane  | 3.223  | 0.20                       | 5       | 0 64.5                | 45 - 120                                        |
| Bis(2-chloroethyl)ether     | 2.931  | 0.20                       | 5       | 0 58.6                | 37 - 121                                        |
| Bis(2-chloroisopropyl)ether | 3.123  | 0.20                       | 5       | 0 62.5                | 40 - 120                                        |
| Bis(2-ethylhexyl)phthalate  | 3.814  | 0.20                       | 5       | 0 76.3                | 40 - 139                                        |
| Butyl benzyl phthalate      | 3.858  | 0.20                       | 5       | 0 77.2                | 47 - 123                                        |
| Caprolactam                 | 3.636  | 0.20                       | 5       | 0 72.7                | 35 - 134                                        |
| Carbazole                   | 3.718  | 0.20                       | 5       | 0 74.4                | 42 - 128                                        |
| Chrysene                    | 3.765  | 0.10                       | 5       | 0 75.3                | 43 - 120                                        |
| Dibenz(a,h)anthracene       | 3.385  | 0.10                       | 5       | 0 67.7                | 45 - 125                                        |
| Dibenzofuran                | 3.482  | 0.10                       | 5       | 0 69.6                | 50 - 120                                        |
| Diethyl phthalate           | 3.571  | 0.20                       | 5       | 0 71.4                | 41 - 120                                        |
| Dimethyl phthalate          | 3.459  | 0.20                       | 5       | 0 69.2                | 40 - 122                                        |
| Di-n-butyl phthalate        | 3.752  | 0.20                       | 5       | 0 75.0                | 45 - 123                                        |
| Di-n-octyl phthalate        | 3.878  | 0.20                       | 5       | 0 77.6                | 45 - 129                                        |
| Fluoranthene                | 3.777  | 0.10                       | 5       | 0 75.5                | 45 - 125                                        |
| Fluorene                    | 3.499  | 0.10                       | 5       | 0 70.0                | 49 - 120                                        |
| Hexachlorobenzene           | 3.424  | 0.20                       | 5       | 0 68.5                | 48 - 120                                        |
| Hexachlorobutadiene         | 3.339  | 0.20                       | 5       | 0 66.8                | 40 - 120                                        |
| Hexachlorocyclopentadiene   | 3.478  | 0.20                       | 5       | 0 69.6                | 34 - 136                                        |
| Hexachloroethane            | 2.814  | 0.20                       | 5       | 0 56.3                | 40 - 120                                        |
| Indeno(1,2,3-cd)pyrene      | 3.828  | 0.10                       | 5       | 0 76.6                | 41 - 128                                        |
| Isophorone                  | 3.289  | 0.20                       | 5       | 0 65.8                | 40 - 121                                        |
| Naphthalene                 | 3.288  | 0.10                       | 5       | 0 65.8                | 45 - 120                                        |
| Nitrobenzene                | 3.066  | 0.20                       | 5       | 0 61.3                | 44 - 120                                        |
| N-Nitrosodi-n-propylamine   | 2.839  | 0.20                       | 5       | 0 56.8                | 40 - 120                                        |
| N-Nitrosodiphenylamine      | 3.286  | 0.20                       | 5       | 0 65.7                | 40 - 125                                        |
| Pentachlorophenol           | 3.606  | 0.20                       | 5       | 0 72.1                | 19 - 121                                        |
| Phenanthrene                | 3.652  | 0.10                       | 5       | 0 73.0                | 45 - 121                                        |
| Phenol                      | 2.909  | 0.20                       | 5       | 0 58.2                | 20 - 124                                        |
| Pyrene                      | 3.757  | 0.10                       | 5       | 0 75.1                | 40 - 130                                        |
| Surr: 2,4,6-Tribromophenol  | 4.006  | 0.20                       | 5       | 0 80.1                | 34 - 129                                        |
| Surr: 2-Fluorobiphenyl      | 3.439  | 0.20                       | 5       | 0 68.8                | 40 - 125                                        |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
WorkOrder: HS14080845  
Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85507       |                            | Instrument: SV-6 |                | Method: SW8270 |                                  |               |               |      |                |  |
|-----------------------|----------------------------|------------------|----------------|----------------|----------------------------------|---------------|---------------|------|----------------|--|
| MS                    | Sample ID: HS14080845-21MS | Units: ug/L      |                |                | Analysis Date: 27-Aug-2014 14:38 |               |               |      |                |  |
| Client ID: WW-EAST    | Run ID: SV-6_240422        |                  | SeqNo: 2992948 |                | PrepDate: 26-Aug-2014            |               | DF: 1         |      |                |  |
| Analyte               | Result                     | PQL              | SPK Val        | SPK Ref Value  | %REC                             | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |  |
| Surr: 2-Fluorophenol  | 2.936                      | 0.20             | 5              | 0              | 58.7                             | 20 - 120      |               |      |                |  |
| Surr: 4-Terphenyl-d14 | 3.941                      | 0.20             | 5              | 0              | 78.8                             | 40 - 135      |               |      |                |  |
| Surr: Nitrobenzene-d5 | 3.096                      | 0.20             | 5              | 0              | 61.9                             | 41 - 120      |               |      |                |  |
| Surr: Phenol-d6       | 2.946                      | 0.20             | 5              | 0              | 58.9                             | 20 - 120      |               |      |                |  |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85507             |        | Instrument: SV-6            |         | Method: SW8270 |      |                                  |               |         |           |      |
|-----------------------------|--------|-----------------------------|---------|----------------|------|----------------------------------|---------------|---------|-----------|------|
| <b>MSD</b>                  |        | Sample ID: HS14080845-21MSD |         | Units: ug/L    |      | Analysis Date: 27-Aug-2014 14:57 |               |         |           |      |
| Client ID: WW-EAST          |        | Run ID: SV-6_240422         |         | SeqNo: 2992949 |      | PrepDate: 26-Aug-2014            |               | DF: 1   |           |      |
| Analyte                     | Result | PQL                         | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD    | RPD Limit | Qual |
| 1,1'-Biphenyl               | 3.234  | 0.20                        | 5       | 0              | 64.7 | 45 - 125                         | 3.399         | 4.97    | 20        |      |
| 1-Methylnaphthalene         | 3.362  | 0.10                        | 5       | 0              | 67.2 | 45 - 120                         | 3.317         | 1.36    | 20        |      |
| 2,4,5-Trichlorophenol       | 3.584  | 0.20                        | 5       | 0              | 71.7 | 46 - 120                         | 3.584         | 0.00996 | 20        |      |
| 2,4,6-Trichlorophenol       | 3.497  | 0.20                        | 5       | 0              | 69.9 | 42 - 120                         | 3.752         | 7.03    | 20        |      |
| 2,4-Dichlorophenol          | 3.211  | 0.20                        | 5       | 0              | 64.2 | 49 - 120                         | 3.315         | 3.21    | 20        |      |
| 2,4-Dimethylphenol          | 3.257  | 0.20                        | 5       | 0              | 65.1 | 35 - 120                         | 3.23          | 0.837   | 20        |      |
| 2,4-Dinitrophenol           | 3.52   | 1.0                         | 5       | 0              | 70.4 | 15 - 120                         | 3.412         | 3.12    | 50        |      |
| 2,4-Dinitrotoluene          | 3.736  | 0.20                        | 5       | 0              | 74.7 | 50 - 122                         | 3.835         | 2.63    | 20        |      |
| 2,6-Dinitrotoluene          | 3.885  | 0.20                        | 5       | 0              | 77.7 | 50 - 120                         | 3.934         | 1.26    | 20        |      |
| 2-Chloronaphthalene         | 3.48   | 0.20                        | 5       | 0              | 69.6 | 50 - 120                         | 3.552         | 2.05    | 20        |      |
| 2-Chlorophenol              | 3.249  | 0.20                        | 5       | 0              | 65.0 | 40 - 120                         | 3.091         | 4.98    | 20        |      |
| 2-Methylnaphthalene         | 3.341  | 0.10                        | 5       | 0              | 66.8 | 50 - 120                         | 3.282         | 1.78    | 20        |      |
| 2-Methylphenol              | 3.141  | 0.20                        | 5       | 0              | 62.8 | 45 - 120                         | 3.024         | 3.8     | 20        |      |
| 2-Nitroaniline              | 3.909  | 0.20                        | 5       | 0              | 78.2 | 28 - 139                         | 3.97          | 1.53    | 20        |      |
| 2-Nitrophenol               | 3.314  | 0.20                        | 5       | 0              | 66.3 | 40 - 120                         | 3.279         | 1.04    | 20        |      |
| 3&4-Methylphenol            | 3.221  | 0.20                        | 5       | 0              | 64.4 | 35 - 120                         | 3.008         | 6.83    | 20        |      |
| 3,3'-Dichlorobenzidine      | 4.124  | 0.20                        | 5       | 0              | 82.5 | 15 - 120                         | 3.947         | 4.4     | 20        |      |
| 3-Nitroaniline              | 3.548  | 0.20                        | 5       | 0              | 71.0 | 30 - 120                         | 3.492         | 1.6     | 20        |      |
| 4,6-Dinitro-2-methylphenol  | 3.259  | 0.20                        | 5       | 0              | 65.2 | 25 - 121                         | 3.429         | 5.07    | 20        |      |
| 4-Bromophenyl phenyl ether  | 3.497  | 0.20                        | 5       | 0              | 69.9 | 45 - 120                         | 3.459         | 1.09    | 20        |      |
| 4-Chloro-3-methylphenol     | 3.367  | 0.20                        | 5       | 0              | 67.3 | 47 - 120                         | 3.361         | 0.174   | 20        |      |
| 4-Chloroaniline             | 3.271  | 0.20                        | 5       | 0              | 65.4 | 20 - 120                         | 3.289         | 0.573   | 20        |      |
| 4-Chlorophenyl phenyl ether | 3.466  | 0.20                        | 5       | 0              | 69.3 | 50 - 120                         | 3.549         | 2.37    | 20        |      |
| 4-Nitroaniline              | 3.657  | 0.20                        | 5       | 0              | 73.1 | 30 - 133                         | 3.726         | 1.87    | 20        |      |
| 4-Nitrophenol               | 3.553  | 1.0                         | 5       | 0              | 71.1 | 30 - 130                         | 3.693         | 3.86    | 20        |      |
| Acenaphthene                | 3.105  | 0.10                        | 5       | 0              | 62.1 | 45 - 120                         | 3.59          | 14.5    | 20        |      |
| Acenaphthylene              | 3.383  | 0.10                        | 5       | 0              | 67.7 | 47 - 120                         | 3.482         | 2.88    | 20        |      |
| Acetophenone                | 3.024  | 0.20                        | 5       | 0              | 60.5 | 40 - 120                         | 2.951         | 2.44    | 20        |      |
| Anthracene                  | 3.611  | 0.10                        | 5       | 0              | 72.2 | 45 - 120                         | 3.558         | 1.48    | 20        |      |
| Atrazine                    | 3.717  | 0.20                        | 5       | 0              | 74.3 | 40 - 130                         | 3.787         | 1.87    | 20        |      |
| Benz(a)anthracene           | 3.918  | 0.10                        | 5       | 0              | 78.4 | 40 - 120                         | 3.826         | 2.36    | 20        |      |
| Benzaldehyde                | 0.8397 | 0.20                        | 5       | 0              | 16.8 | 15 - 120                         | 0.8443        | 0.543   | 30        |      |
| Benzo(a)pyrene              | 3.755  | 0.10                        | 5       | 0              | 75.1 | 45 - 120                         | 3.615         | 3.78    | 20        |      |
| Benzo(b)fluoranthene        | 3.875  | 0.10                        | 5       | 0              | 77.5 | 50 - 120                         | 4.006         | 3.32    | 20        |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: 85507             |        | Instrument: SV-6            |         | Method: SW8270 |      |                                  |               |        |           |      |
|-----------------------------|--------|-----------------------------|---------|----------------|------|----------------------------------|---------------|--------|-----------|------|
| MSD                         |        | Sample ID: HS14080845-21MSD |         | Units: ug/L    |      | Analysis Date: 27-Aug-2014 14:57 |               |        |           |      |
| Client ID: WW-EAST          |        | Run ID: SV-6_240422         |         | SeqNo: 2992949 |      | PrepDate: 26-Aug-2014            |               | DF: 1  |           |      |
| Analyte                     | Result | PQL                         | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD   | RPD Limit | Qual |
| Benzo(g,h,i)perylene        | 3.669  | 0.10                        | 5       | 0              | 73.4 | 42 - 127                         | 3.719         | 1.35   | 20        |      |
| Benzo(k)fluoranthene        | 3.603  | 0.10                        | 5       | 0              | 72.1 | 45 - 127                         | 3.496         | 3.03   | 20        |      |
| Bis(2-chloroethoxy)methane  | 3.287  | 0.20                        | 5       | 0              | 65.7 | 45 - 120                         | 3.223         | 1.98   | 20        |      |
| Bis(2-chloroethyl)ether     | 2.956  | 0.20                        | 5       | 0              | 59.1 | 37 - 121                         | 2.931         | 0.832  | 20        |      |
| Bis(2-chloroisopropyl)ether | 3.162  | 0.20                        | 5       | 0              | 63.2 | 40 - 120                         | 3.123         | 1.26   | 20        |      |
| Bis(2-ethylhexyl)phthalate  | 3.902  | 0.20                        | 5       | 0              | 78.0 | 40 - 139                         | 3.814         | 2.28   | 20        |      |
| Butyl benzyl phthalate      | 4.043  | 0.20                        | 5       | 0              | 80.9 | 47 - 123                         | 3.858         | 4.69   | 20        |      |
| Caprolactam                 | 3.717  | 0.20                        | 5       | 0              | 74.3 | 35 - 134                         | 3.636         | 2.18   | 20        |      |
| Carbazole                   | 3.62   | 0.20                        | 5       | 0              | 72.4 | 42 - 128                         | 3.718         | 2.66   | 20        |      |
| Chrysene                    | 3.86   | 0.10                        | 5       | 0              | 77.2 | 43 - 120                         | 3.765         | 2.48   | 20        |      |
| Dibenz(a,h)anthracene       | 3.686  | 0.10                        | 5       | 0              | 73.7 | 45 - 125                         | 3.385         | 8.51   | 20        |      |
| Dibenzofuran                | 3.336  | 0.10                        | 5       | 0              | 66.7 | 50 - 120                         | 3.482         | 4.27   | 20        |      |
| Diethyl phthalate           | 3.573  | 0.20                        | 5       | 0              | 71.5 | 41 - 120                         | 3.571         | 0.0573 | 20        |      |
| Dimethyl phthalate          | 3.502  | 0.20                        | 5       | 0              | 70.0 | 40 - 122                         | 3.459         | 1.24   | 20        |      |
| Di-n-butyl phthalate        | 3.79   | 0.20                        | 5       | 0              | 75.8 | 45 - 123                         | 3.752         | 0.993  | 20        |      |
| Di-n-octyl phthalate        | 3.969  | 0.20                        | 5       | 0              | 79.4 | 45 - 129                         | 3.878         | 2.34   | 20        |      |
| Fluoranthene                | 3.763  | 0.10                        | 5       | 0              | 75.3 | 45 - 125                         | 3.777         | 0.379  | 20        |      |
| Fluorene                    | 3.476  | 0.10                        | 5       | 0              | 69.5 | 49 - 120                         | 3.499         | 0.664  | 20        |      |
| Hexachlorobenzene           | 3.544  | 0.20                        | 5       | 0              | 70.9 | 48 - 120                         | 3.424         | 3.46   | 20        |      |
| Hexachlorobutadiene         | 3.428  | 0.20                        | 5       | 0              | 68.6 | 40 - 120                         | 3.339         | 2.63   | 20        |      |
| Hexachlorocyclopentadiene   | 3.317  | 0.20                        | 5       | 0              | 66.3 | 34 - 136                         | 3.478         | 4.74   | 20        |      |
| Hexachloroethane            | 3.137  | 0.20                        | 5       | 0              | 62.7 | 40 - 120                         | 2.814         | 10.9   | 20        |      |
| Indeno(1,2,3-cd)pyrene      | 3.679  | 0.10                        | 5       | 0              | 73.6 | 41 - 128                         | 3.828         | 3.95   | 20        |      |
| Isophorone                  | 3.262  | 0.20                        | 5       | 0              | 65.2 | 40 - 121                         | 3.289         | 0.811  | 20        |      |
| Naphthalene                 | 3.247  | 0.10                        | 5       | 0              | 64.9 | 45 - 120                         | 3.288         | 1.24   | 20        |      |
| Nitrobenzene                | 3.136  | 0.20                        | 5       | 0              | 62.7 | 44 - 120                         | 3.066         | 2.25   | 20        |      |
| N-Nitrosodi-n-propylamine   | 3.098  | 0.20                        | 5       | 0              | 62.0 | 40 - 120                         | 2.839         | 8.72   | 20        |      |
| N-Nitrosodiphenylamine      | 3.444  | 0.20                        | 5       | 0              | 68.9 | 40 - 125                         | 3.286         | 4.72   | 20        |      |
| Pentachlorophenol           | 3.537  | 0.20                        | 5       | 0              | 70.7 | 19 - 121                         | 3.606         | 1.94   | 20        |      |
| Phenanthrene                | 3.688  | 0.10                        | 5       | 0              | 73.8 | 45 - 121                         | 3.652         | 1      | 20        |      |
| Phenol                      | 3.104  | 0.20                        | 5       | 0              | 62.1 | 20 - 124                         | 2.909         | 6.49   | 20        |      |
| Pyrene                      | 3.79   | 0.10                        | 5       | 0              | 75.8 | 40 - 130                         | 3.757         | 0.882  | 20        |      |
| Surr: 2,4,6-Tribromophenol  | 3.939  | 0.20                        | 5       | 0              | 78.8 | 34 - 129                         | 4.006         | 1.68   |           |      |
| Surr: 2-Fluorobiphenyl      | 3.337  | 0.20                        | 5       | 0              | 66.7 | 40 - 125                         | 3.439         | 3.02   |           |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: 85507                                    |        | Instrument: SV-6                   |               | Method: SW8270               |                                                 |
|----------------------------------------------------|--------|------------------------------------|---------------|------------------------------|-------------------------------------------------|
| <b>MSD</b>                                         |        | Sample ID: <b>HS14080845-21MSD</b> |               | Units: <b>ug/L</b>           |                                                 |
| Client ID: <b>WW-EAST</b>                          |        | Run ID: <b>SV-6_240422</b>         |               | SeqNo: <b>2992949</b>        |                                                 |
|                                                    |        |                                    |               | PrepDate: <b>26-Aug-2014</b> |                                                 |
|                                                    |        |                                    |               | DF: <b>1</b>                 |                                                 |
| Analyte                                            | Result | PQL                                | SPK Val       | SPK Ref Value %REC           | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Surr: 2-Fluorophenol                               | 2.943  | 0.20                               | 5             | 0 58.9                       | 20 - 120 2.936 0.242                            |
| Surr: 4-Terphenyl-d14                              | 3.969  | 0.20                               | 5             | 0 79.4                       | 40 - 135 3.941 0.722                            |
| Surr: Nitrobenzene-d5                              | 3.135  | 0.20                               | 5             | 0 62.7                       | 41 - 120 3.096 1.26                             |
| Surr: Phenol-d6                                    | 3.107  | 0.20                               | 5             | 0 62.1                       | 20 - 120 2.946 5.34                             |
| The following samples were analyzed in this batch: |        |                                    |               |                              |                                                 |
|                                                    |        | HS14080845-08                      | HS14080845-09 | HS14080845-10                | HS14080845-11                                   |
|                                                    |        | HS14080845-12                      | HS14080845-13 | HS14080845-14                | HS14080845-15                                   |
|                                                    |        | HS14080845-16                      | HS14080845-17 | HS14080845-18                | HS14080845-19                                   |
|                                                    |        | HS14080845-20                      | HS14080845-21 | HS14080845-22                | HS14080845-23                                   |
|                                                    |        | HS14080845-24                      | HS14080845-25 |                              |                                                 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: R240062         |                         | Instrument: VOA1 |         | Method: SW8260                   |                                                 |
|---------------------------|-------------------------|------------------|---------|----------------------------------|-------------------------------------------------|
| MBLK                      | Sample ID: VBLKW-140828 | Units: ug/L      |         | Analysis Date: 28-Aug-2014 18:23 |                                                 |
| Client ID:                | Run ID: VOA1_240062     | SeqNo: 2985681   |         | PrepDate:                        | DF: 1                                           |
| Analyte                   | Result                  | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| 1,1,1-Trichloroethane     | ND                      | 5.0              |         |                                  |                                                 |
| 1,1,2,2-Tetrachloroethane | ND                      | 5.0              |         |                                  |                                                 |
| 1,1,2-Trichloroethane     | ND                      | 5.0              |         |                                  |                                                 |
| 1,1-Dichloroethane        | ND                      | 5.0              |         |                                  |                                                 |
| 1,1-Dichloroethene        | ND                      | 5.0              |         |                                  |                                                 |
| 1,2,4-Trimethylbenzene    | ND                      | 5.0              |         |                                  |                                                 |
| 1,2-Dibromoethane         | ND                      | 5.0              |         |                                  |                                                 |
| 1,2-Dichloroethane        | ND                      | 5.0              |         |                                  |                                                 |
| 1,2-Dichloropropane       | ND                      | 5.0              |         |                                  |                                                 |
| 1,3,5-Trimethylbenzene    | ND                      | 5.0              |         |                                  |                                                 |
| 2-Butanone                | ND                      | 10               |         |                                  |                                                 |
| 2-Hexanone                | ND                      | 10               |         |                                  |                                                 |
| 4-Isopropyltoluene        | ND                      | 5.0              |         |                                  |                                                 |
| 4-Methyl-2-pentanone      | ND                      | 10               |         |                                  |                                                 |
| Acetone                   | ND                      | 10               |         |                                  |                                                 |
| Benzene                   | ND                      | 5.0              |         |                                  |                                                 |
| Bromodichloromethane      | ND                      | 5.0              |         |                                  |                                                 |
| Bromoform                 | ND                      | 5.0              |         |                                  |                                                 |
| Bromomethane              | ND                      | 5.0              |         |                                  |                                                 |
| Carbon disulfide          | ND                      | 10               |         |                                  |                                                 |
| Carbon tetrachloride      | ND                      | 5.0              |         |                                  |                                                 |
| Chlorobenzene             | ND                      | 5.0              |         |                                  |                                                 |
| Chloroethane              | ND                      | 5.0              |         |                                  |                                                 |
| Chloroform                | ND                      | 5.0              |         |                                  |                                                 |
| Chloromethane             | ND                      | 5.0              |         |                                  |                                                 |
| cis-1,2-Dichloroethene    | ND                      | 5.0              |         |                                  |                                                 |
| cis-1,3-Dichloropropene   | ND                      | 5.0              |         |                                  |                                                 |
| Dibromochloromethane      | ND                      | 5.0              |         |                                  |                                                 |
| Ethylbenzene              | ND                      | 5.0              |         |                                  |                                                 |
| Isopropylbenzene          | ND                      | 5.0              |         |                                  |                                                 |
| m,p-Xylene                | ND                      | 10               |         |                                  |                                                 |
| Methyl tert-butyl ether   | ND                      | 5.0              |         |                                  |                                                 |
| Methylene chloride        | ND                      | 10               |         |                                  |                                                 |
| Naphthalene               | ND                      | 5.0              |         |                                  |                                                 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240062           |                         | Instrument: VOA1 |         | Method: SW8260                   |      |               |               |      |                |
|-----------------------------|-------------------------|------------------|---------|----------------------------------|------|---------------|---------------|------|----------------|
| <b>MBLK</b>                 | Sample ID: VBLKW-140828 | Units: ug/L      |         | Analysis Date: 28-Aug-2014 18:23 |      |               |               |      |                |
| Client ID:                  | Run ID: VOA1_240062     | SeqNo: 2985681   |         | PrepDate:                        |      | DF: 1         |               |      |                |
| Analyte                     | Result                  | PQL              | SPK Val | SPK Ref Value                    | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |
| n-Butylbenzene              | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| n-Propylbenzene             | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| o-Xylene                    | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| sec-Butylbenzene            | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Styrene                     | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Tetrachloroethene           | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Toluene                     | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| trans-1,2-Dichloroethene    | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| trans-1,3-Dichloropropene   | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Trichloroethene             | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Vinyl chloride              | ND                      | 2.0              |         |                                  |      |               |               |      |                |
| Xylenes, Total              | ND                      | 15               |         |                                  |      |               |               |      |                |
| Surr: 1,2-Dichloroethane-d4 | 51.63                   | 5.0              | 50      | 0                                | 103  | 70 - 125      |               |      |                |
| Surr: 4-Bromofluorobenzene  | 49.9                    | 5.0              | 50      | 0                                | 99.8 | 72 - 125      |               |      |                |
| Surr: Dibromofluoromethane  | 49.15                   | 5.0              | 50      | 0                                | 98.3 | 71 - 125      |               |      |                |
| Surr: Toluene-d8            | 47.95                   | 5.0              | 50      | 0                                | 95.9 | 75 - 125      |               |      |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
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## QC BATCH REPORT

| Batch ID: R240062         |  | Instrument: VOA1        |  | Method: SW8260                   |  |
|---------------------------|--|-------------------------|--|----------------------------------|--|
| LCS                       |  | Sample ID: VLCSW-140828 |  | Units: ug/L                      |  |
| Client ID:                |  | Run ID: VOA1_240062     |  | SeqNo: 2985680                   |  |
| Analyte                   |  | Result                  |  | Analysis Date: 28-Aug-2014 17:25 |  |
|                           |  | PQL                     |  | PrepDate: DF: 1                  |  |
|                           |  | SPK Val                 |  | SPK Ref Value %REC               |  |
|                           |  |                         |  | Control Limit                    |  |
|                           |  |                         |  | RPD Ref Value %RPD               |  |
|                           |  |                         |  | RPD Limit Qual                   |  |
| 1,1,1-Trichloroethane     |  | 47.07                   |  | 80 - 120                         |  |
| 1,1,2,2-Tetrachloroethane |  | 55.75                   |  | 72 - 120                         |  |
| 1,1,2-Trichloroethane     |  | 46.4                    |  | 80 - 120                         |  |
| 1,1-Dichloroethane        |  | 44.82                   |  | 76 - 120                         |  |
| 1,1-Dichloroethene        |  | 50.67                   |  | 73 - 124                         |  |
| 1,2,4-Trimethylbenzene    |  | 46.58                   |  | 68 - 123                         |  |
| 1,2-Dibromoethane         |  | 47.42                   |  | 80 - 120                         |  |
| 1,2-Dichloroethane        |  | 47.07                   |  | 78 - 120                         |  |
| 1,2-Dichloropropane       |  | 51.49                   |  | 80 - 120                         |  |
| 1,3,5-Trimethylbenzene    |  | 48.5                    |  | 80 - 120                         |  |
| 2-Butanone                |  | 90.86                   |  | 58 - 132                         |  |
| 2-Hexanone                |  | 98.38                   |  | 61 - 130                         |  |
| 4-Isopropyltoluene        |  | 49.51                   |  | 79 - 120                         |  |
| 4-Methyl-2-pentanone      |  | 93.01                   |  | 65 - 127                         |  |
| Acetone                   |  | 106.4                   |  | 59 - 137                         |  |
| Benzene                   |  | 46.24                   |  | 73 - 121                         |  |
| Bromodichloromethane      |  | 47.68                   |  | 75 - 125                         |  |
| Bromoform                 |  | 52.68                   |  | 70 - 130                         |  |
| Bromomethane              |  | 57.91                   |  | 60 - 145                         |  |
| Carbon disulfide          |  | 116.4                   |  | 68 - 141                         |  |
| Carbon tetrachloride      |  | 49.32                   |  | 75 - 125                         |  |
| Chlorobenzene             |  | 46.94                   |  | 80 - 120                         |  |
| Chloroethane              |  | 51.63                   |  | 70 - 130                         |  |
| Chloroform                |  | 46.9                    |  | 70 - 130                         |  |
| Chloromethane             |  | 46.64                   |  | 67 - 123                         |  |
| cis-1,2-Dichloroethene    |  | 48.08                   |  | 78 - 120                         |  |
| cis-1,3-Dichloropropene   |  | 48.17                   |  | 80 - 120                         |  |
| Dibromochloromethane      |  | 51.85                   |  | 80 - 120                         |  |
| Ethylbenzene              |  | 48.44                   |  | 80 - 120                         |  |
| Isopropylbenzene          |  | 47.31                   |  | 75 - 130                         |  |
| m,p-Xylene                |  | 96.77                   |  | 78 - 121                         |  |
| Methyl tert-butyl ether   |  | 53.53                   |  | 70 - 125                         |  |
| Methylene chloride        |  | 52.88                   |  | 65 - 133                         |  |
| Naphthalene               |  | 50.04                   |  | 65 - 135                         |  |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: R240062           |  | Instrument: VOA1        |  | Method: SW8260                   |  |
|-----------------------------|--|-------------------------|--|----------------------------------|--|
| LCS                         |  | Sample ID: VLCSW-140828 |  | Units: ug/L                      |  |
| Client ID:                  |  | Run ID: VOA1_240062     |  | SeqNo: 2985680                   |  |
| Analyte                     |  | Result                  |  | Analysis Date: 28-Aug-2014 17:25 |  |
|                             |  | PQL                     |  | PrepDate: DF: 1                  |  |
|                             |  | SPK Val                 |  | SPK Ref Value %REC               |  |
|                             |  |                         |  | Control Limit                    |  |
|                             |  |                         |  | RPD Ref Value %RPD               |  |
|                             |  |                         |  | RPD Limit Qual                   |  |
| n-Butylbenzene              |  | 45.81                   |  | 5.0 50                           |  |
| n-Propylbenzene             |  | 46.3                    |  | 5.0 50                           |  |
| o-Xylene                    |  | 47.26                   |  | 5.0 50                           |  |
| sec-Butylbenzene            |  | 47.08                   |  | 5.0 50                           |  |
| Styrene                     |  | 50.27                   |  | 5.0 50                           |  |
| Tetrachloroethene           |  | 51.3                    |  | 5.0 50                           |  |
| Toluene                     |  | 48.94                   |  | 5.0 50                           |  |
| trans-1,2-Dichloroethene    |  | 48.57                   |  | 5.0 50                           |  |
| trans-1,3-Dichloropropene   |  | 49.19                   |  | 5.0 50                           |  |
| Trichloroethene             |  | 50.56                   |  | 5.0 50                           |  |
| Vinyl chloride              |  | 45.65                   |  | 2.0 50                           |  |
| Xylenes, Total              |  | 144                     |  | 15 150                           |  |
| Surr: 1,2-Dichloroethane-d4 |  | 49.72                   |  | 5.0 50                           |  |
| Surr: 4-Bromofluorobenzene  |  | 50.04                   |  | 5.0 50                           |  |
| Surr: Dibromofluoromethane  |  | 48.41                   |  | 5.0 50                           |  |
| Surr: Toluene-d8            |  | 50.31                   |  | 5.0 50                           |  |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: R240062         |        | Instrument: VOA1           |         | Method: SW8260 |      |                                  |               |       |                |
|---------------------------|--------|----------------------------|---------|----------------|------|----------------------------------|---------------|-------|----------------|
| MS                        |        | Sample ID: HS14080845-21MS |         | Units: ug/L    |      | Analysis Date: 28-Aug-2014 20:16 |               |       |                |
| Client ID: WW-EAST        |        | Run ID: VOA1_240062        |         | SeqNo: 2985685 |      | PrepDate:                        |               | DF: 1 |                |
| Analyte                   | Result | PQL                        | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit Qual |
| 1,1,1-Trichloroethane     | 53.38  | 5.0                        | 50      | 0              | 107  | 80 - 120                         |               |       |                |
| 1,1,2,2-Tetrachloroethane | 55.79  | 5.0                        | 50      | 0              | 112  | 72 - 120                         |               |       |                |
| 1,1,2-Trichloroethane     | 51.89  | 5.0                        | 50      | 0              | 104  | 80 - 120                         |               |       |                |
| 1,1-Dichloroethane        | 49.16  | 5.0                        | 50      | 0              | 98.3 | 76 - 120                         |               |       |                |
| 1,1-Dichloroethene        | 56.97  | 5.0                        | 50      | 0              | 114  | 73 - 124                         |               |       |                |
| 1,2,4-Trimethylbenzene    | 51.29  | 5.0                        | 50      | 0              | 103  | 68 - 123                         |               |       |                |
| 1,2-Dibromoethane         | 52.47  | 5.0                        | 50      | 0              | 105  | 80 - 120                         |               |       |                |
| 1,2-Dichloroethane        | 50.94  | 5.0                        | 50      | 0              | 102  | 78 - 120                         |               |       |                |
| 1,2-Dichloropropane       | 59.6   | 5.0                        | 50      | 0              | 119  | 80 - 120                         |               |       |                |
| 1,3,5-Trimethylbenzene    | 51.46  | 5.0                        | 50      | 0              | 103  | 80 - 120                         |               |       |                |
| 2-Butanone                | 88.95  | 10                         | 100     | 0              | 88.9 | 58 - 132                         |               |       |                |
| 2-Hexanone                | 100.4  | 10                         | 100     | 0              | 100  | 61 - 130                         |               |       |                |
| 4-Isopropyltoluene        | 55.61  | 5.0                        | 50      | 0              | 111  | 79 - 120                         |               |       |                |
| 4-Methyl-2-pentanone      | 99.93  | 10                         | 100     | 0              | 99.9 | 65 - 127                         |               |       |                |
| Acetone                   | 95.66  | 10                         | 100     | 0              | 95.7 | 59 - 137                         |               |       |                |
| Benzene                   | 52.85  | 5.0                        | 50      | 0              | 106  | 73 - 121                         |               |       |                |
| Bromodichloromethane      | 53.12  | 5.0                        | 50      | 0              | 106  | 75 - 125                         |               |       |                |
| Bromoform                 | 57.63  | 5.0                        | 50      | 0              | 115  | 70 - 130                         |               |       |                |
| Bromomethane              | 59.88  | 5.0                        | 50      | 0              | 120  | 60 - 145                         |               |       |                |
| Carbon disulfide          | 120.9  | 10                         | 100     | 0              | 121  | 68 - 141                         |               |       |                |
| Carbon tetrachloride      | 55.28  | 5.0                        | 50      | 0              | 111  | 75 - 125                         |               |       |                |
| Chlorobenzene             | 53.01  | 5.0                        | 50      | 0              | 106  | 80 - 120                         |               |       |                |
| Chloroethane              | 53.9   | 5.0                        | 50      | 0              | 108  | 70 - 130                         |               |       |                |
| Chloroform                | 53.5   | 5.0                        | 50      | 0              | 107  | 70 - 130                         |               |       |                |
| Chloromethane             | 41.19  | 5.0                        | 50      | 0              | 82.4 | 67 - 123                         |               |       |                |
| cis-1,2-Dichloroethene    | 52.94  | 5.0                        | 50      | 0              | 106  | 78 - 120                         |               |       |                |
| cis-1,3-Dichloropropene   | 54.18  | 5.0                        | 50      | 0              | 108  | 80 - 120                         |               |       |                |
| Dibromochloromethane      | 58.02  | 5.0                        | 50      | 0              | 116  | 80 - 120                         |               |       |                |
| Ethylbenzene              | 53.03  | 5.0                        | 50      | 0              | 106  | 80 - 120                         |               |       |                |
| Isopropylbenzene          | 56.78  | 5.0                        | 50      | 0              | 114  | 75 - 130                         |               |       |                |
| m,p-Xylene                | 114.7  | 10                         | 100     | 0              | 115  | 78 - 121                         |               |       |                |
| Methyl tert-butyl ether   | 52.98  | 5.0                        | 50      | 0              | 106  | 70 - 125                         |               |       |                |
| Methylene chloride        | 57.25  | 10                         | 50      | 0              | 115  | 65 - 133                         |               |       |                |
| Naphthalene               | 51.9   | 5.0                        | 50      | 0              | 104  | 65 - 135                         |               |       |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240062           |        | Instrument: VOA1                  |         | Method: SW8260        |                                                 |
|-----------------------------|--------|-----------------------------------|---------|-----------------------|-------------------------------------------------|
| <b>MS</b>                   |        | Sample ID: <b>HS14080845-21MS</b> |         | Units: <b>ug/L</b>    |                                                 |
| Client ID: <b>WW-EAST</b>   |        | Run ID: <b>VOA1_240062</b>        |         | SeqNo: <b>2985685</b> |                                                 |
|                             |        |                                   |         | PrepDate:             |                                                 |
|                             |        |                                   |         | DF: <b>1</b>          |                                                 |
| Analyte                     | Result | PQL                               | SPK Val | SPK Ref Value %REC    | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| n-Butylbenzene              | 53.3   | 5.0                               | 50      | 0 107                 | 77 - 120                                        |
| n-Propylbenzene             | 50.27  | 5.0                               | 50      | 0 101                 | 78 - 120                                        |
| o-Xylene                    | 56.53  | 5.0                               | 50      | 0 113                 | 80 - 120                                        |
| sec-Butylbenzene            | 53.48  | 5.0                               | 50      | 0 107                 | 78 - 120                                        |
| Styrene                     | 59.41  | 5.0                               | 50      | 0 119                 | 80 - 120                                        |
| Tetrachloroethene           | 61.5   | 5.0                               | 50      | 0 123                 | 74 - 125                                        |
| Toluene                     | 53.23  | 5.0                               | 50      | 0 106                 | 80 - 120                                        |
| trans-1,2-Dichloroethene    | 54.64  | 5.0                               | 50      | 0 109                 | 78 - 120                                        |
| trans-1,3-Dichloropropene   | 56.78  | 5.0                               | 50      | 0 114                 | 80 - 120                                        |
| Trichloroethene             | 55.85  | 5.0                               | 50      | 0 112                 | 80 - 120                                        |
| Vinyl chloride              | 43.59  | 2.0                               | 50      | 0 87.2                | 70 - 127                                        |
| Xylenes, Total              | 171.2  | 15                                | 150     | 0 114                 | 80 - 120                                        |
| Surr: 1,2-Dichloroethane-d4 | 49.61  | 5.0                               | 50      | 0 99.2                | 70 - 125                                        |
| Surr: 4-Bromofluorobenzene  | 53.9   | 5.0                               | 50      | 0 108                 | 72 - 125                                        |
| Surr: Dibromofluoromethane  | 48.83  | 5.0                               | 50      | 0 97.7                | 71 - 125                                        |
| Surr: Toluene-d8            | 51.77  | 5.0                               | 50      | 0 104                 | 75 - 125                                        |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: R240062         |        | Instrument: VOA1            |         | Method: SW8260 |      |                                  |               |        |           |      |
|---------------------------|--------|-----------------------------|---------|----------------|------|----------------------------------|---------------|--------|-----------|------|
| MSD                       |        | Sample ID: HS14080845-21MSD |         | Units: ug/L    |      | Analysis Date: 28-Aug-2014 20:44 |               |        |           |      |
| Client ID: WW-EAST        |        | Run ID: VOA1_240062         |         | SeqNo: 2985686 |      | PrepDate:                        |               | DF: 1  |           |      |
| Analyte                   | Result | PQL                         | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD   | RPD Limit | Qual |
| 1,1,1-Trichloroethane     | 52.1   | 5.0                         | 50      | 0              | 104  | 80 - 120                         | 53.38         | 2.44   | 20        |      |
| 1,1,2,2-Tetrachloroethane | 62.06  | 5.0                         | 50      | 0              | 124  | 72 - 120                         | 55.79         | 10.6   | 20        | S    |
| 1,1,2-Trichloroethane     | 51.87  | 5.0                         | 50      | 0              | 104  | 80 - 120                         | 51.89         | 0.0549 | 20        |      |
| 1,1-Dichloroethane        | 49.05  | 5.0                         | 50      | 0              | 98.1 | 76 - 120                         | 49.16         | 0.212  | 20        |      |
| 1,1-Dichloroethene        | 52.85  | 5.0                         | 50      | 0              | 106  | 73 - 124                         | 56.97         | 7.49   | 20        |      |
| 1,2,4-Trimethylbenzene    | 51.14  | 5.0                         | 50      | 0              | 102  | 68 - 123                         | 51.29         | 0.291  | 20        |      |
| 1,2-Dibromoethane         | 52.88  | 5.0                         | 50      | 0              | 106  | 80 - 120                         | 52.47         | 0.768  | 20        |      |
| 1,2-Dichloroethane        | 49.93  | 5.0                         | 50      | 0              | 99.9 | 78 - 120                         | 50.94         | 1.99   | 20        |      |
| 1,2-Dichloropropane       | 58.19  | 5.0                         | 50      | 0              | 116  | 80 - 120                         | 59.6          | 2.39   | 20        |      |
| 1,3,5-Trimethylbenzene    | 51.39  | 5.0                         | 50      | 0              | 103  | 80 - 120                         | 51.46         | 0.131  | 20        |      |
| 2-Butanone                | 88.41  | 10                          | 100     | 0              | 88.4 | 58 - 132                         | 88.95         | 0.606  | 20        |      |
| 2-Hexanone                | 95.81  | 10                          | 100     | 0              | 95.8 | 61 - 130                         | 100.4         | 4.64   | 20        |      |
| 4-Isopropyltoluene        | 52.11  | 5.0                         | 50      | 0              | 104  | 79 - 120                         | 55.61         | 6.49   | 20        |      |
| 4-Methyl-2-pentanone      | 94.94  | 10                          | 100     | 0              | 94.9 | 65 - 127                         | 99.93         | 5.12   | 20        |      |
| Acetone                   | 95.83  | 10                          | 100     | 0              | 95.8 | 59 - 137                         | 95.66         | 0.182  | 20        |      |
| Benzene                   | 51.27  | 5.0                         | 50      | 0              | 103  | 73 - 121                         | 52.85         | 3.05   | 20        |      |
| Bromodichloromethane      | 52.3   | 5.0                         | 50      | 0              | 105  | 75 - 125                         | 53.12         | 1.56   | 20        |      |
| Bromoform                 | 55.01  | 5.0                         | 50      | 0              | 110  | 70 - 130                         | 57.63         | 4.66   | 20        |      |
| Bromomethane              | 56.56  | 5.0                         | 50      | 0              | 113  | 60 - 145                         | 59.88         | 5.71   | 20        |      |
| Carbon disulfide          | 122.4  | 10                          | 100     | 0              | 122  | 68 - 141                         | 120.9         | 1.21   | 20        |      |
| Carbon tetrachloride      | 51.04  | 5.0                         | 50      | 0              | 102  | 75 - 125                         | 55.28         | 7.97   | 20        |      |
| Chlorobenzene             | 53.19  | 5.0                         | 50      | 0              | 106  | 80 - 120                         | 53.01         | 0.344  | 20        |      |
| Chloroethane              | 50.47  | 5.0                         | 50      | 0              | 101  | 76 - 121                         | 53.9          | 6.57   | 20        |      |
| Chloroform                | 51.34  | 5.0                         | 50      | 0              | 103  | 70 - 130                         | 53.5          | 4.11   | 20        |      |
| Chloromethane             | 41.06  | 5.0                         | 50      | 0              | 82.1 | 67 - 123                         | 41.19         | 0.293  | 20        |      |
| cis-1,2-Dichloroethene    | 53.1   | 5.0                         | 50      | 0              | 106  | 78 - 120                         | 52.94         | 0.291  | 20        |      |
| cis-1,3-Dichloropropene   | 50.75  | 5.0                         | 50      | 0              | 102  | 80 - 120                         | 54.18         | 6.54   | 20        |      |
| Dibromochloromethane      | 55.25  | 5.0                         | 50      | 0              | 110  | 80 - 120                         | 58.02         | 4.9    | 20        |      |
| Ethylbenzene              | 52.3   | 5.0                         | 50      | 0              | 105  | 80 - 120                         | 53.03         | 1.38   | 20        |      |
| Isopropylbenzene          | 52.3   | 5.0                         | 50      | 0              | 105  | 75 - 130                         | 56.78         | 8.22   | 20        |      |
| m,p-Xylene                | 109.3  | 10                          | 100     | 0              | 109  | 78 - 121                         | 114.7         | 4.86   | 20        |      |
| Methyl tert-butyl ether   | 50.01  | 5.0                         | 50      | 0              | 100  | 70 - 125                         | 52.98         | 5.76   | 20        |      |
| Methylene chloride        | 57.41  | 10                          | 50      | 0              | 115  | 65 - 133                         | 57.25         | 0.268  | 20        |      |
| Naphthalene               | 53.39  | 5.0                         | 50      | 0              | 107  | 65 - 135                         | 51.9          | 2.84   | 20        |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240062           |        | Instrument: VOA1                   |         | Method: SW8260        |      |                                         |               |              |           |      |
|-----------------------------|--------|------------------------------------|---------|-----------------------|------|-----------------------------------------|---------------|--------------|-----------|------|
| <b>MSD</b>                  |        | Sample ID: <b>HS14080845-21MSD</b> |         | Units: <b>ug/L</b>    |      | Analysis Date: <b>28-Aug-2014 20:44</b> |               |              |           |      |
| Client ID: <b>WW-EAST</b>   |        | Run ID: <b>VOA1_240062</b>         |         | SeqNo: <b>2985686</b> |      | PrepDate:                               |               | DF: <b>1</b> |           |      |
| Analyte                     | Result | PQL                                | SPK Val | SPK Ref Value         | %REC | Control Limit                           | RPD Ref Value | %RPD         | RPD Limit | Qual |
| n-Butylbenzene              | 52.04  | 5.0                                | 50      | 0                     | 104  | 77 - 120                                | 53.3          | 2.4          | 20        |      |
| n-Propylbenzene             | 50.05  | 5.0                                | 50      | 0                     | 100  | 78 - 120                                | 50.27         | 0.445        | 20        |      |
| o-Xylene                    | 51.1   | 5.0                                | 50      | 0                     | 102  | 80 - 120                                | 56.53         | 10.1         | 20        |      |
| sec-Butylbenzene            | 50.93  | 5.0                                | 50      | 0                     | 102  | 78 - 120                                | 53.48         | 4.88         | 20        |      |
| Styrene                     | 54.38  | 5.0                                | 50      | 0                     | 109  | 80 - 120                                | 59.41         | 8.84         | 20        |      |
| Tetrachloroethene           | 57.24  | 5.0                                | 50      | 0                     | 114  | 74 - 125                                | 61.5          | 7.18         | 20        |      |
| Toluene                     | 51.04  | 5.0                                | 50      | 0                     | 102  | 80 - 120                                | 53.23         | 4.19         | 20        |      |
| trans-1,2-Dichloroethene    | 51.2   | 5.0                                | 50      | 0                     | 102  | 78 - 120                                | 54.64         | 6.51         | 20        |      |
| trans-1,3-Dichloropropene   | 54.24  | 5.0                                | 50      | 0                     | 108  | 80 - 120                                | 56.78         | 4.59         | 20        |      |
| Trichloroethene             | 55     | 5.0                                | 50      | 0                     | 110  | 80 - 120                                | 55.85         | 1.54         | 20        |      |
| Vinyl chloride              | 42.37  | 2.0                                | 50      | 0                     | 84.7 | 70 - 127                                | 43.59         | 2.83         | 20        |      |
| Xylenes, Total              | 160.4  | 15                                 | 150     | 0                     | 107  | 78 - 121                                | 171.2         | 6.56         | 20        |      |
| Surr: 1,2-Dichloroethane-d4 | 49.75  | 5.0                                | 50      | 0                     | 99.5 | 70 - 125                                | 49.61         | 0.284        | 20        |      |
| Surr: 4-Bromofluorobenzene  | 51.01  | 5.0                                | 50      | 0                     | 102  | 72 - 125                                | 53.9          | 5.5          | 20        |      |
| Surr: Dibromofluoromethane  | 48.92  | 5.0                                | 50      | 0                     | 97.8 | 71 - 125                                | 48.83         | 0.171        | 20        |      |
| Surr: Toluene-d8            | 51.65  | 5.0                                | 50      | 0                     | 103  | 75 - 125                                | 51.77         | 0.237        | 20        |      |

The following samples were analyzed in this batch:

|               |               |               |               |
|---------------|---------------|---------------|---------------|
| HS14080845-01 | HS14080845-02 | HS14080845-03 | HS14080845-04 |
| HS14080845-05 | HS14080845-06 | HS14080845-07 | HS14080845-08 |
| HS14080845-09 | HS14080845-10 | HS14080845-21 |               |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: R240113         |                         | Instrument: VOA1 |                | Method: SW8260                   |           |               |               |      |                |
|---------------------------|-------------------------|------------------|----------------|----------------------------------|-----------|---------------|---------------|------|----------------|
| MBLK                      | Sample ID: VBLKW-140829 | Units: ug/L      |                | Analysis Date: 29-Aug-2014 12:05 |           |               |               |      |                |
| Client ID:                | Run ID: VOA1_240113     |                  | SeqNo: 2986545 |                                  | PrepDate: |               | DF: 1         |      |                |
| Analyte                   | Result                  | PQL              | SPK Val        | SPK Ref Value                    | %REC      | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |
| 1,1,1-Trichloroethane     | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,1,2,2-Tetrachloroethane | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,1,2-Trichloroethane     | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,1-Dichloroethane        | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,1-Dichloroethene        | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,2,4-Trimethylbenzene    | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,2-Dibromoethane         | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,2-Dichloroethane        | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,2-Dichloropropane       | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 1,3,5-Trimethylbenzene    | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 2-Butanone                | ND                      | 10               |                |                                  |           |               |               |      |                |
| 2-Hexanone                | ND                      | 10               |                |                                  |           |               |               |      |                |
| 4-Isopropyltoluene        | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| 4-Methyl-2-pentanone      | ND                      | 10               |                |                                  |           |               |               |      |                |
| Acetone                   | ND                      | 10               |                |                                  |           |               |               |      |                |
| Benzene                   | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Bromodichloromethane      | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Bromoform                 | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Bromomethane              | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Carbon disulfide          | ND                      | 10               |                |                                  |           |               |               |      |                |
| Carbon tetrachloride      | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Chlorobenzene             | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Chloroethane              | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Chloroform                | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Chloromethane             | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| cis-1,2-Dichloroethene    | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| cis-1,3-Dichloropropene   | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Dibromochloromethane      | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Ethylbenzene              | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Isopropylbenzene          | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| m,p-Xylene                | ND                      | 10               |                |                                  |           |               |               |      |                |
| Methyl tert-butyl ether   | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Methylene chloride        | ND                      | 10               |                |                                  |           |               |               |      |                |
| Naphthalene               | ND                      | 5.0              |                |                                  |           |               |               |      |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: R240113           |                         | Instrument: VOA1 |                | Method: SW8260                   |           |               |               |      |                |
|-----------------------------|-------------------------|------------------|----------------|----------------------------------|-----------|---------------|---------------|------|----------------|
| MBLK                        | Sample ID: VBLKW-140829 | Units: ug/L      |                | Analysis Date: 29-Aug-2014 12:05 |           |               |               |      |                |
| Client ID:                  | Run ID: VOA1_240113     |                  | SeqNo: 2986545 |                                  | PrepDate: |               | DF: 1         |      |                |
| Analyte                     | Result                  | PQL              | SPK Val        | SPK Ref Value                    | %REC      | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |
| n-Butylbenzene              | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| n-Propylbenzene             | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| o-Xylene                    | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| sec-Butylbenzene            | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Styrene                     | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Tetrachloroethene           | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Toluene                     | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| trans-1,2-Dichloroethene    | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| trans-1,3-Dichloropropene   | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Trichloroethene             | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Vinyl chloride              | ND                      | 2.0              |                |                                  |           |               |               |      |                |
| Xylenes, Total              | ND                      | 15               |                |                                  |           |               |               |      |                |
| Surr: 1,2-Dichloroethane-d4 | 48.46                   | 5.0              | 50             | 0                                | 96.9      | 70 - 125      |               |      |                |
| Surr: 4-Bromofluorobenzene  | 51.92                   | 5.0              | 50             | 0                                | 104       | 72 - 125      |               |      |                |
| Surr: Dibromofluoromethane  | 48.18                   | 5.0              | 50             | 0                                | 96.4      | 71 - 125      |               |      |                |
| Surr: Toluene-d8            | 52.74                   | 5.0              | 50             | 0                                | 105       | 75 - 125      |               |      |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: R240113         |        | Instrument: VOA1        |         | Method: SW8260 |      |                                  |               |       |                |
|---------------------------|--------|-------------------------|---------|----------------|------|----------------------------------|---------------|-------|----------------|
| LCS                       |        | Sample ID: VLCSW-140829 |         | Units: ug/L    |      | Analysis Date: 29-Aug-2014 11:09 |               |       |                |
| Client ID:                |        | Run ID: VOA1_240113     |         | SeqNo: 2986544 |      | PrepDate:                        |               | DF: 1 |                |
| Analyte                   | Result | PQL                     | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit Qual |
| 1,1,1-Trichloroethane     | 44.73  | 5.0                     | 50      | 0              | 89.5 | 80 - 120                         |               |       |                |
| 1,1,2,2-Tetrachloroethane | 51.25  | 5.0                     | 50      | 0              | 103  | 72 - 120                         |               |       |                |
| 1,1,2-Trichloroethane     | 46.29  | 5.0                     | 50      | 0              | 92.6 | 80 - 120                         |               |       |                |
| 1,1-Dichloroethane        | 43.98  | 5.0                     | 50      | 0              | 88.0 | 76 - 120                         |               |       |                |
| 1,1-Dichloroethene        | 48.37  | 5.0                     | 50      | 0              | 96.7 | 73 - 124                         |               |       |                |
| 1,2,4-Trimethylbenzene    | 47.05  | 5.0                     | 50      | 0              | 94.1 | 68 - 123                         |               |       |                |
| 1,2-Dibromoethane         | 45.21  | 5.0                     | 50      | 0              | 90.4 | 80 - 120                         |               |       |                |
| 1,2-Dichloroethane        | 43.56  | 5.0                     | 50      | 0              | 87.1 | 78 - 120                         |               |       |                |
| 1,2-Dichloropropane       | 55.44  | 5.0                     | 50      | 0              | 111  | 80 - 120                         |               |       |                |
| 1,3,5-Trimethylbenzene    | 50.02  | 5.0                     | 50      | 0              | 100  | 80 - 120                         |               |       |                |
| 2-Butanone                | 82     | 10                      | 100     | 0              | 82.0 | 58 - 132                         |               |       |                |
| 2-Hexanone                | 87.39  | 10                      | 100     | 0              | 87.4 | 61 - 130                         |               |       |                |
| 4-Isopropyltoluene        | 50.03  | 5.0                     | 50      | 0              | 100  | 79 - 120                         |               |       |                |
| 4-Methyl-2-pentanone      | 85.32  | 10                      | 100     | 0              | 85.3 | 65 - 127                         |               |       |                |
| Acetone                   | 94.11  | 10                      | 100     | 0              | 94.1 | 59 - 137                         |               |       |                |
| Benzene                   | 46.02  | 5.0                     | 50      | 0              | 92.0 | 73 - 121                         |               |       |                |
| Bromodichloromethane      | 45.04  | 5.0                     | 50      | 0              | 90.1 | 75 - 125                         |               |       |                |
| Bromoform                 | 49.77  | 5.0                     | 50      | 0              | 99.5 | 70 - 130                         |               |       |                |
| Bromomethane              | 43.15  | 5.0                     | 50      | 0              | 86.3 | 60 - 145                         |               |       |                |
| Carbon disulfide          | 114.5  | 10                      | 100     | 0              | 114  | 68 - 141                         |               |       |                |
| Carbon tetrachloride      | 48.25  | 5.0                     | 50      | 0              | 96.5 | 75 - 125                         |               |       |                |
| Chlorobenzene             | 47.79  | 5.0                     | 50      | 0              | 95.6 | 80 - 120                         |               |       |                |
| Chloroethane              | 47.6   | 5.0                     | 50      | 0              | 95.2 | 70 - 130                         |               |       |                |
| Chloroform                | 44.34  | 5.0                     | 50      | 0              | 88.7 | 70 - 130                         |               |       |                |
| Chloromethane             | 40.94  | 5.0                     | 50      | 0              | 81.9 | 67 - 123                         |               |       |                |
| cis-1,2-Dichloroethene    | 47.59  | 5.0                     | 50      | 0              | 95.2 | 78 - 120                         |               |       |                |
| cis-1,3-Dichloropropene   | 48.86  | 5.0                     | 50      | 0              | 97.7 | 80 - 120                         |               |       |                |
| Dibromochloromethane      | 49.68  | 5.0                     | 50      | 0              | 99.4 | 80 - 120                         |               |       |                |
| Ethylbenzene              | 49.62  | 5.0                     | 50      | 0              | 99.2 | 80 - 120                         |               |       |                |
| Isopropylbenzene          | 49.07  | 5.0                     | 50      | 0              | 98.1 | 75 - 130                         |               |       |                |
| m,p-Xylene                | 98.28  | 10                      | 100     | 0              | 98.3 | 78 - 121                         |               |       |                |
| Methyl tert-butyl ether   | 49.42  | 5.0                     | 50      | 0              | 98.8 | 70 - 125                         |               |       |                |
| Methylene chloride        | 49.27  | 10                      | 50      | 0              | 98.5 | 65 - 133                         |               |       |                |
| Naphthalene               | 51.92  | 5.0                     | 50      | 0              | 104  | 65 - 135                         |               |       |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: R240113           |  | Instrument: VOA1        |  | Method: SW8260                   |  |
|-----------------------------|--|-------------------------|--|----------------------------------|--|
| LCS                         |  | Sample ID: VLCSW-140829 |  | Units: ug/L                      |  |
| Client ID:                  |  | Run ID: VOA1_240113     |  | SeqNo: 2986544                   |  |
| Analyte                     |  | Result                  |  | Analysis Date: 29-Aug-2014 11:09 |  |
|                             |  | PQL                     |  | PrepDate: DF: 1                  |  |
|                             |  | SPK Val                 |  | SPK Ref Value %REC               |  |
|                             |  |                         |  | Control Limit                    |  |
|                             |  |                         |  | RPD Ref Value %RPD               |  |
|                             |  |                         |  | RPD Limit Qual                   |  |
| n-Butylbenzene              |  | 48.38                   |  | 50 0 96.8 77 - 120               |  |
| n-Propylbenzene             |  | 48.74                   |  | 50 0 97.5 78 - 120               |  |
| o-Xylene                    |  | 47.7                    |  | 50 0 95.4 80 - 120               |  |
| sec-Butylbenzene            |  | 50.15                   |  | 50 0 100 78 - 120                |  |
| Styrene                     |  | 50.21                   |  | 50 0 100 80 - 120                |  |
| Tetrachloroethene           |  | 50.92                   |  | 50 0 102 74 - 125                |  |
| Toluene                     |  | 47.64                   |  | 50 0 95.3 80 - 120               |  |
| trans-1,2-Dichloroethene    |  | 45.82                   |  | 50 0 91.6 78 - 120               |  |
| trans-1,3-Dichloropropene   |  | 51.89                   |  | 50 0 104 80 - 120                |  |
| Trichloroethene             |  | 48.48                   |  | 50 0 97.0 80 - 120               |  |
| Vinyl chloride              |  | 44.06                   |  | 50 0 88.1 70 - 127               |  |
| Xylenes, Total              |  | 146                     |  | 150 0 97.3 80 - 120              |  |
| Surr: 1,2-Dichloroethane-d4 |  | 44.69                   |  | 50 0 89.4 70 - 125               |  |
| Surr: 4-Bromofluorobenzene  |  | 51.67                   |  | 50 0 103 72 - 125                |  |
| Surr: Dibromofluoromethane  |  | 44.97                   |  | 50 0 89.9 71 - 125               |  |
| Surr: Toluene-d8            |  | 48.78                   |  | 50 0 97.6 75 - 125               |  |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: R240113         |                            | Instrument: VOA1 |                | Method: SW8260                   |                                                 |
|---------------------------|----------------------------|------------------|----------------|----------------------------------|-------------------------------------------------|
| MS                        | Sample ID: HS14080845-11MS | Units: ug/L      |                | Analysis Date: 29-Aug-2014 15:47 |                                                 |
| Client ID: RW-1           | Run ID: VOA1_240113        |                  | SeqNo: 2986550 | PrepDate:                        | DF: 1                                           |
| Analyte                   | Result                     | PQL              | SPK Val        | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| 1,1,1-Trichloroethane     | 45.66                      | 5.0              | 50             | 0 91.3                           | 80 - 120                                        |
| 1,1,2,2-Tetrachloroethane | 56.27                      | 5.0              | 50             | 0 113                            | 72 - 120                                        |
| 1,1,2-Trichloroethane     | 46.53                      | 5.0              | 50             | 0 93.1                           | 80 - 120                                        |
| 1,1-Dichloroethane        | 44.08                      | 5.0              | 50             | 0 88.2                           | 76 - 120                                        |
| 1,1-Dichloroethene        | 50.06                      | 5.0              | 50             | 0 100                            | 73 - 124                                        |
| 1,2,4-Trimethylbenzene    | 44.2                       | 5.0              | 50             | 0 88.4                           | 68 - 123                                        |
| 1,2-Dibromoethane         | 47.81                      | 5.0              | 50             | 0 95.6                           | 80 - 120                                        |
| 1,2-Dichloroethane        | 48.1                       | 5.0              | 50             | 0 96.2                           | 78 - 120                                        |
| 1,2-Dichloropropane       | 59.88                      | 5.0              | 50             | 0 120                            | 80 - 120                                        |
| 1,3,5-Trimethylbenzene    | 46.64                      | 5.0              | 50             | 0 93.3                           | 80 - 120                                        |
| 2-Butanone                | 84.83                      | 10               | 100            | 0 84.8                           | 58 - 132                                        |
| 2-Hexanone                | 93.66                      | 10               | 100            | 0 93.7                           | 61 - 130                                        |
| 4-Isopropyltoluene        | 46.8                       | 5.0              | 50             | 0 93.6                           | 79 - 120                                        |
| 4-Methyl-2-pentanone      | 92.41                      | 10               | 100            | 0 92.4                           | 65 - 127                                        |
| Acetone                   | 91.76                      | 10               | 100            | 0 91.8                           | 59 - 137                                        |
| Benzene                   | 47.2                       | 5.0              | 50             | 0 94.4                           | 73 - 121                                        |
| Bromodichloromethane      | 49.86                      | 5.0              | 50             | 0 99.7                           | 75 - 125                                        |
| Bromoform                 | 52.47                      | 5.0              | 50             | 0 105                            | 70 - 130                                        |
| Bromomethane              | 47.88                      | 5.0              | 50             | 0 95.8                           | 60 - 145                                        |
| Carbon disulfide          | 103.8                      | 10               | 100            | 0 104                            | 68 - 141                                        |
| Carbon tetrachloride      | 49.79                      | 5.0              | 50             | 0 99.6                           | 75 - 125                                        |
| Chlorobenzene             | 46.17                      | 5.0              | 50             | 0 92.3                           | 80 - 120                                        |
| Chloroethane              | 41.22                      | 5.0              | 50             | 0 82.4                           | 70 - 130                                        |
| Chloroform                | 46.18                      | 5.0              | 50             | 0 92.4                           | 70 - 130                                        |
| Chloromethane             | 29.19                      | 5.0              | 50             | 0 58.4                           | 67 - 123 S                                      |
| cis-1,2-Dichloroethene    | 48.38                      | 5.0              | 50             | 0 96.8                           | 78 - 120                                        |
| cis-1,3-Dichloropropene   | 49.89                      | 5.0              | 50             | 0 99.8                           | 80 - 120                                        |
| Dibromochloromethane      | 49.82                      | 5.0              | 50             | 0 99.6                           | 80 - 120                                        |
| Ethylbenzene              | 49.07                      | 5.0              | 50             | 0 98.1                           | 80 - 120                                        |
| Isopropylbenzene          | 46.94                      | 5.0              | 50             | 0 93.9                           | 75 - 130                                        |
| m,p-Xylene                | 98.55                      | 10               | 100            | 0 98.6                           | 78 - 121                                        |
| Methyl tert-butyl ether   | 50.99                      | 5.0              | 50             | 0 102                            | 70 - 125                                        |
| Methylene chloride        | 53.48                      | 10               | 50             | 0 107                            | 65 - 133                                        |
| Naphthalene               | 52.16                      | 5.0              | 50             | 0 104                            | 65 - 135                                        |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: R240113           |        | Instrument: VOA1           |         | Method: SW8260     |                                                 |
|-----------------------------|--------|----------------------------|---------|--------------------|-------------------------------------------------|
| MS                          |        | Sample ID: HS14080845-11MS |         | Units: ug/L        |                                                 |
| Client ID: RW-1             |        | Run ID: VOA1_240113        |         | SeqNo: 2986550     |                                                 |
|                             |        |                            |         | PrepDate:          |                                                 |
|                             |        |                            |         | DF: 1              |                                                 |
| Analyte                     | Result | PQL                        | SPK Val | SPK Ref Value %REC | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| n-Butylbenzene              | 45.6   | 5.0                        | 50      | 0 91.2             | 77 - 120                                        |
| n-Propylbenzene             | 47.09  | 5.0                        | 50      | 0 94.2             | 78 - 120                                        |
| o-Xylene                    | 47.48  | 5.0                        | 50      | 0 95.0             | 80 - 120                                        |
| sec-Butylbenzene            | 45.71  | 5.0                        | 50      | 0 91.4             | 78 - 120                                        |
| Styrene                     | 49.86  | 5.0                        | 50      | 0 99.7             | 80 - 120                                        |
| Tetrachloroethene           | 49.35  | 5.0                        | 50      | 0 98.7             | 74 - 125                                        |
| Toluene                     | 45.56  | 5.0                        | 50      | 0 91.1             | 80 - 120                                        |
| trans-1,2-Dichloroethene    | 47.42  | 5.0                        | 50      | 0 94.8             | 78 - 120                                        |
| trans-1,3-Dichloropropene   | 53.19  | 5.0                        | 50      | 0 106              | 80 - 120                                        |
| Trichloroethene             | 52.35  | 5.0                        | 50      | 0 105              | 80 - 120                                        |
| Vinyl chloride              | 33.79  | 2.0                        | 50      | 0 67.6             | 70 - 127 S                                      |
| Xylenes, Total              | 146    | 15                         | 150     | 0 97.4             | 80 - 120                                        |
| Surr: 1,2-Dichloroethane-d4 | 47.13  | 5.0                        | 50      | 0 94.3             | 70 - 125                                        |
| Surr: 4-Bromofluorobenzene  | 50.82  | 5.0                        | 50      | 0 102              | 72 - 125                                        |
| Surr: Dibromofluoromethane  | 47.49  | 5.0                        | 50      | 0 95.0             | 71 - 125                                        |
| Surr: Toluene-d8            | 49.25  | 5.0                        | 50      | 0 98.5             | 75 - 125                                        |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: R240113         |        | Instrument: VOA1            |         | Method: SW8260 |      |                                  |               |       |           |      |
|---------------------------|--------|-----------------------------|---------|----------------|------|----------------------------------|---------------|-------|-----------|------|
| MSD                       |        | Sample ID: HS14080845-11MSD |         | Units: ug/L    |      | Analysis Date: 29-Aug-2014 16:14 |               |       |           |      |
| Client ID: RW-1           |        | Run ID: VOA1_240113         |         | SeqNo: 2986551 |      | PrepDate:                        |               | DF: 1 |           |      |
| Analyte                   | Result | PQL                         | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit | Qual |
| 1,1,1-Trichloroethane     | 47.14  | 5.0                         | 50      | 0              | 94.3 | 80 - 120                         | 45.66         | 3.19  | 20        |      |
| 1,1,2,2-Tetrachloroethane | 57.55  | 5.0                         | 50      | 0              | 115  | 72 - 120                         | 56.27         | 2.25  | 20        |      |
| 1,1,2-Trichloroethane     | 48.92  | 5.0                         | 50      | 0              | 97.8 | 80 - 120                         | 46.53         | 5.01  | 20        |      |
| 1,1-Dichloroethane        | 45.12  | 5.0                         | 50      | 0              | 90.2 | 76 - 120                         | 44.08         | 2.31  | 20        |      |
| 1,1-Dichloroethene        | 48.7   | 5.0                         | 50      | 0              | 97.4 | 73 - 124                         | 50.06         | 2.75  | 20        |      |
| 1,2,4-Trimethylbenzene    | 46.53  | 5.0                         | 50      | 0              | 93.1 | 68 - 123                         | 44.2          | 5.14  | 20        |      |
| 1,2-Dibromoethane         | 52.81  | 5.0                         | 50      | 0              | 106  | 80 - 120                         | 47.81         | 9.94  | 20        |      |
| 1,2-Dichloroethane        | 45.14  | 5.0                         | 50      | 0              | 90.3 | 78 - 120                         | 48.1          | 6.34  | 20        |      |
| 1,2-Dichloropropane       | 55.9   | 5.0                         | 50      | 0              | 112  | 80 - 120                         | 59.88         | 6.88  | 20        |      |
| 1,3,5-Trimethylbenzene    | 50.03  | 5.0                         | 50      | 0              | 100  | 80 - 120                         | 46.64         | 7.02  | 20        |      |
| 2-Butanone                | 87.46  | 10                          | 100     | 0              | 87.5 | 58 - 132                         | 84.83         | 3.06  | 20        |      |
| 2-Hexanone                | 96.34  | 10                          | 100     | 0              | 96.3 | 61 - 130                         | 93.66         | 2.82  | 20        |      |
| 4-Isopropyltoluene        | 49.13  | 5.0                         | 50      | 0              | 98.3 | 79 - 120                         | 46.8          | 4.86  | 20        |      |
| 4-Methyl-2-pentanone      | 92.93  | 10                          | 100     | 0              | 92.9 | 65 - 127                         | 92.41         | 0.558 | 20        |      |
| Acetone                   | 92.7   | 10                          | 100     | 0              | 92.7 | 59 - 137                         | 91.76         | 1.02  | 20        |      |
| Benzene                   | 44.82  | 5.0                         | 50      | 0              | 89.6 | 73 - 121                         | 47.2          | 5.19  | 20        |      |
| Bromodichloromethane      | 47.69  | 5.0                         | 50      | 0              | 95.4 | 75 - 125                         | 49.86         | 4.45  | 20        |      |
| Bromoform                 | 52.35  | 5.0                         | 50      | 0              | 105  | 70 - 130                         | 52.47         | 0.246 | 20        |      |
| Bromomethane              | 42     | 5.0                         | 50      | 0              | 84.0 | 60 - 145                         | 47.88         | 13.1  | 20        |      |
| Carbon disulfide          | 112.3  | 10                          | 100     | 0              | 112  | 68 - 141                         | 103.8         | 7.81  | 20        |      |
| Carbon tetrachloride      | 48.2   | 5.0                         | 50      | 0              | 96.4 | 75 - 125                         | 49.79         | 3.24  | 20        |      |
| Chlorobenzene             | 49.36  | 5.0                         | 50      | 0              | 98.7 | 80 - 120                         | 46.17         | 6.68  | 20        |      |
| Chloroethane              | 48.15  | 5.0                         | 50      | 0              | 96.3 | 76 - 121                         | 41.22         | 15.5  | 20        |      |
| Chloroform                | 44.54  | 5.0                         | 50      | 0              | 89.1 | 70 - 130                         | 46.18         | 3.61  | 20        |      |
| Chloromethane             | 29.11  | 5.0                         | 50      | 0              | 58.2 | 67 - 123                         | 29.19         | 0.273 | 20        | S    |
| cis-1,2-Dichloroethene    | 50.02  | 5.0                         | 50      | 0              | 100  | 78 - 120                         | 48.38         | 3.33  | 20        |      |
| cis-1,3-Dichloropropene   | 49     | 5.0                         | 50      | 0              | 98.0 | 80 - 120                         | 49.89         | 1.81  | 20        |      |
| Dibromochloromethane      | 52.91  | 5.0                         | 50      | 0              | 106  | 80 - 120                         | 49.82         | 6.02  | 20        |      |
| Ethylbenzene              | 50.53  | 5.0                         | 50      | 0              | 101  | 80 - 120                         | 49.07         | 2.92  | 20        |      |
| Isopropylbenzene          | 49.65  | 5.0                         | 50      | 0              | 99.3 | 75 - 130                         | 46.94         | 5.62  | 20        |      |
| m,p-Xylene                | 100.9  | 10                          | 100     | 0              | 101  | 78 - 121                         | 98.55         | 2.33  | 20        |      |
| Methyl tert-butyl ether   | 53.36  | 5.0                         | 50      | 0              | 107  | 70 - 125                         | 50.99         | 4.54  | 20        |      |
| Methylene chloride        | 55.5   | 10                          | 50      | 0              | 111  | 65 - 133                         | 53.48         | 3.7   | 20        |      |
| Naphthalene               | 53.64  | 5.0                         | 50      | 0              | 107  | 65 - 135                         | 52.16         | 2.79  | 20        |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240113                                 |        | Instrument: VOA1            |         | Method: SW8260 |      |                                  |               |        |                |
|---------------------------------------------------|--------|-----------------------------|---------|----------------|------|----------------------------------|---------------|--------|----------------|
| MSD                                               |        | Sample ID: HS14080845-11MSD |         | Units: ug/L    |      | Analysis Date: 29-Aug-2014 16:14 |               |        |                |
| Client ID: RW-1                                   |        | Run ID: VOA1_240113         |         | SeqNo: 2986551 |      | PrepDate:                        |               | DF: 1  |                |
| Analyte                                           | Result | PQL                         | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD   | RPD Limit Qual |
| n-Butylbenzene                                    | 44.99  | 5.0                         | 50      | 0              | 90.0 | 77 - 120                         | 45.6          | 1.33   | 20             |
| n-Propylbenzene                                   | 47.72  | 5.0                         | 50      | 0              | 95.4 | 78 - 120                         | 47.09         | 1.32   | 20             |
| o-Xylene                                          | 47.47  | 5.0                         | 50      | 0              | 94.9 | 80 - 120                         | 47.48         | 0.0307 | 20             |
| sec-Butylbenzene                                  | 49.44  | 5.0                         | 50      | 0              | 98.9 | 78 - 120                         | 45.71         | 7.83   | 20             |
| Styrene                                           | 52.45  | 5.0                         | 50      | 0              | 105  | 80 - 120                         | 49.86         | 5.06   | 20             |
| Tetrachloroethene                                 | 51.58  | 5.0                         | 50      | 0              | 103  | 74 - 125                         | 49.35         | 4.42   | 20             |
| Toluene                                           | 49.21  | 5.0                         | 50      | 0              | 98.4 | 80 - 120                         | 45.56         | 7.7    | 20             |
| trans-1,2-Dichloroethene                          | 48.84  | 5.0                         | 50      | 0              | 97.7 | 78 - 120                         | 47.42         | 2.95   | 20             |
| trans-1,3-Dichloropropene                         | 51.46  | 5.0                         | 50      | 0              | 103  | 80 - 120                         | 53.19         | 3.3    | 20             |
| Trichloroethene                                   | 50.01  | 5.0                         | 50      | 0              | 100  | 80 - 120                         | 52.35         | 4.56   | 20             |
| Vinyl chloride                                    | 34.58  | 2.0                         | 50      | 0              | 69.2 | 70 - 127                         | 33.79         | 2.32   | 20 S           |
| Xylenes, Total                                    | 148.3  | 15                          | 150     | 0              | 98.9 | 78 - 121                         | 146           | 1.57   | 20             |
| Surr: 1,2-Dichloroethane-d4                       | 46.12  | 5.0                         | 50      | 0              | 92.2 | 70 - 125                         | 47.13         | 2.16   | 20             |
| Surr: 4-Bromofluorobenzene                        | 52.1   | 5.0                         | 50      | 0              | 104  | 72 - 125                         | 50.82         | 2.49   | 20             |
| Surr: Dibromofluoromethane                        | 47.35  | 5.0                         | 50      | 0              | 94.7 | 71 - 125                         | 47.49         | 0.304  | 20             |
| Surr: Toluene-d8                                  | 50.6   | 5.0                         | 50      | 0              | 101  | 75 - 125                         | 49.25         | 2.7    | 20             |
| The following samples were anayzed in this batch: |        |                             |         |                |      |                                  |               |        |                |
| HS14080845-11                                     |        | HS14080845-12               |         | HS14080845-26  |      |                                  |               |        |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: R240229         |                         | Instrument: VOA1 |         | Method: SW8260                   |      |               |               |      |                |
|---------------------------|-------------------------|------------------|---------|----------------------------------|------|---------------|---------------|------|----------------|
| MBLK                      | Sample ID: VBLKW-140902 | Units: ug/L      |         | Analysis Date: 02-Sep-2014 12:27 |      |               |               |      |                |
| Client ID:                | Run ID: VOA1_240229     | SeqNo: 2989185   |         | PrepDate:                        |      | DF: 1         |               |      |                |
| Analyte                   | Result                  | PQL              | SPK Val | SPK Ref Value                    | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |
| 1,1,1-Trichloroethane     | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,1,2,2-Tetrachloroethane | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,1,2-Trichloroethane     | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,1-Dichloroethane        | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,1-Dichloroethene        | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,2,4-Trimethylbenzene    | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,2-Dibromoethane         | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,2-Dichloroethane        | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,2-Dichloropropane       | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,3,5-Trimethylbenzene    | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 2-Butanone                | ND                      | 10               |         |                                  |      |               |               |      |                |
| 2-Hexanone                | ND                      | 10               |         |                                  |      |               |               |      |                |
| 4-Isopropyltoluene        | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 4-Methyl-2-pentanone      | ND                      | 10               |         |                                  |      |               |               |      |                |
| Acetone                   | ND                      | 10               |         |                                  |      |               |               |      |                |
| Benzene                   | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Bromodichloromethane      | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Bromoform                 | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Bromomethane              | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Carbon disulfide          | ND                      | 10               |         |                                  |      |               |               |      |                |
| Carbon tetrachloride      | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Chlorobenzene             | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Chloroethane              | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Chloroform                | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Chloromethane             | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| cis-1,2-Dichloroethene    | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| cis-1,3-Dichloropropene   | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Dibromochloromethane      | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Ethylbenzene              | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Isopropylbenzene          | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| m,p-Xylene                | ND                      | 10               |         |                                  |      |               |               |      |                |
| Methyl tert-butyl ether   | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Methylene chloride        | ND                      | 10               |         |                                  |      |               |               |      |                |
| Naphthalene               | ND                      | 5.0              |         |                                  |      |               |               |      |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240229           |                         | Instrument: VOA1 |         | Method: SW8260                   |      |               |               |      |                |
|-----------------------------|-------------------------|------------------|---------|----------------------------------|------|---------------|---------------|------|----------------|
| <b>MBLK</b>                 | Sample ID: VBLKW-140902 | Units: ug/L      |         | Analysis Date: 02-Sep-2014 12:27 |      |               |               |      |                |
| Client ID:                  | Run ID: VOA1_240229     | SeqNo: 2989185   |         | PrepDate:                        |      | DF: 1         |               |      |                |
| Analyte                     | Result                  | PQL              | SPK Val | SPK Ref Value                    | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |
| n-Butylbenzene              | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| n-Propylbenzene             | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| o-Xylene                    | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| sec-Butylbenzene            | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Styrene                     | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Tetrachloroethene           | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Toluene                     | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| trans-1,2-Dichloroethene    | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| trans-1,3-Dichloropropene   | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Trichloroethene             | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Vinyl chloride              | ND                      | 2.0              |         |                                  |      |               |               |      |                |
| Xylenes, Total              | ND                      | 15               |         |                                  |      |               |               |      |                |
| Surr: 1,2-Dichloroethane-d4 | 51.15                   | 5.0              | 50      | 0                                | 102  | 70 - 125      |               |      |                |
| Surr: 4-Bromofluorobenzene  | 50.99                   | 5.0              | 50      | 0                                | 102  | 72 - 125      |               |      |                |
| Surr: Dibromofluoromethane  | 50.93                   | 5.0              | 50      | 0                                | 102  | 71 - 125      |               |      |                |
| Surr: Toluene-d8            | 51.1                    | 5.0              | 50      | 0                                | 102  | 75 - 125      |               |      |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: R240229         |        | Instrument: VOA1        |         | Method: SW8260 |      |                                  |               |       |                |
|---------------------------|--------|-------------------------|---------|----------------|------|----------------------------------|---------------|-------|----------------|
| LCS                       |        | Sample ID: VLCSW-140902 |         | Units: ug/L    |      | Analysis Date: 02-Sep-2014 11:31 |               |       |                |
| Client ID:                |        | Run ID: VOA1_240229     |         | SeqNo: 2989184 |      | PrepDate:                        |               | DF: 1 |                |
| Analyte                   | Result | PQL                     | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit Qual |
| 1,1,1-Trichloroethane     | 50.06  | 5.0                     | 50      | 0              | 100  | 80 - 120                         |               |       |                |
| 1,1,2,2-Tetrachloroethane | 57.92  | 5.0                     | 50      | 0              | 116  | 72 - 120                         |               |       |                |
| 1,1,2-Trichloroethane     | 48.42  | 5.0                     | 50      | 0              | 96.8 | 80 - 120                         |               |       |                |
| 1,1-Dichloroethane        | 43.95  | 5.0                     | 50      | 0              | 87.9 | 76 - 120                         |               |       |                |
| 1,1-Dichloroethene        | 49.46  | 5.0                     | 50      | 0              | 98.9 | 73 - 124                         |               |       |                |
| 1,2,4-Trimethylbenzene    | 48.28  | 5.0                     | 50      | 0              | 96.6 | 68 - 123                         |               |       |                |
| 1,2-Dibromoethane         | 49.25  | 5.0                     | 50      | 0              | 98.5 | 80 - 120                         |               |       |                |
| 1,2-Dichloroethane        | 45.58  | 5.0                     | 50      | 0              | 91.2 | 78 - 120                         |               |       |                |
| 1,2-Dichloropropane       | 55.59  | 5.0                     | 50      | 0              | 111  | 80 - 120                         |               |       |                |
| 1,3,5-Trimethylbenzene    | 48.7   | 5.0                     | 50      | 0              | 97.4 | 80 - 120                         |               |       |                |
| 2-Butanone                | 82.91  | 10                      | 100     | 0              | 82.9 | 58 - 132                         |               |       |                |
| 2-Hexanone                | 93.07  | 10                      | 100     | 0              | 93.1 | 61 - 130                         |               |       |                |
| 4-Isopropyltoluene        | 49.8   | 5.0                     | 50      | 0              | 99.6 | 79 - 120                         |               |       |                |
| 4-Methyl-2-pentanone      | 90.09  | 10                      | 100     | 0              | 90.1 | 65 - 127                         |               |       |                |
| Acetone                   | 103    | 10                      | 100     | 0              | 103  | 59 - 137                         |               |       |                |
| Benzene                   | 47.8   | 5.0                     | 50      | 0              | 95.6 | 73 - 121                         |               |       |                |
| Bromodichloromethane      | 47.89  | 5.0                     | 50      | 0              | 95.8 | 75 - 125                         |               |       |                |
| Bromoform                 | 54.08  | 5.0                     | 50      | 0              | 108  | 70 - 130                         |               |       |                |
| Bromomethane              | 43.69  | 5.0                     | 50      | 0              | 87.4 | 60 - 145                         |               |       |                |
| Carbon disulfide          | 116.8  | 10                      | 100     | 0              | 117  | 68 - 141                         |               |       |                |
| Carbon tetrachloride      | 50.19  | 5.0                     | 50      | 0              | 100  | 75 - 125                         |               |       |                |
| Chlorobenzene             | 48.39  | 5.0                     | 50      | 0              | 96.8 | 80 - 120                         |               |       |                |
| Chloroethane              | 45.8   | 5.0                     | 50      | 0              | 91.6 | 70 - 130                         |               |       |                |
| Chloroform                | 46.32  | 5.0                     | 50      | 0              | 92.6 | 70 - 130                         |               |       |                |
| Chloromethane             | 39.6   | 5.0                     | 50      | 0              | 79.2 | 67 - 123                         |               |       |                |
| cis-1,2-Dichloroethene    | 49.84  | 5.0                     | 50      | 0              | 99.7 | 78 - 120                         |               |       |                |
| cis-1,3-Dichloropropene   | 49.63  | 5.0                     | 50      | 0              | 99.3 | 80 - 120                         |               |       |                |
| Dibromochloromethane      | 53.59  | 5.0                     | 50      | 0              | 107  | 80 - 120                         |               |       |                |
| Ethylbenzene              | 49.11  | 5.0                     | 50      | 0              | 98.2 | 80 - 120                         |               |       |                |
| Isopropylbenzene          | 51.06  | 5.0                     | 50      | 0              | 102  | 75 - 130                         |               |       |                |
| m,p-Xylene                | 94.57  | 10                      | 100     | 0              | 94.6 | 78 - 121                         |               |       |                |
| Methyl tert-butyl ether   | 55.48  | 5.0                     | 50      | 0              | 111  | 70 - 125                         |               |       |                |
| Methylene chloride        | 54.87  | 10                      | 50      | 0              | 110  | 65 - 133                         |               |       |                |
| Naphthalene               | 51.25  | 5.0                     | 50      | 0              | 103  | 65 - 135                         |               |       |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240229           |  | Instrument: VOA1        |  | Method: SW8260                   |  |
|-----------------------------|--|-------------------------|--|----------------------------------|--|
| LCS                         |  | Sample ID: VLCSW-140902 |  | Units: ug/L                      |  |
| Client ID:                  |  | Run ID: VOA1_240229     |  | SeqNo: 2989184                   |  |
| Analyte                     |  | Result                  |  | Analysis Date: 02-Sep-2014 11:31 |  |
|                             |  | PQL                     |  | PrepDate: DF: 1                  |  |
|                             |  | SPK Val                 |  | SPK Ref Value %REC               |  |
|                             |  |                         |  | Control Limit                    |  |
|                             |  |                         |  | RPD Ref Value %RPD               |  |
|                             |  |                         |  | RPD Limit Qual                   |  |
| n-Butylbenzene              |  | 46.26                   |  | 5.0 50 0 92.5 77 - 120           |  |
| n-Propylbenzene             |  | 47.78                   |  | 5.0 50 0 95.6 78 - 120           |  |
| o-Xylene                    |  | 48.26                   |  | 5.0 50 0 96.5 80 - 120           |  |
| sec-Butylbenzene            |  | 49.64                   |  | 5.0 50 0 99.3 78 - 120           |  |
| Styrene                     |  | 50.27                   |  | 5.0 50 0 101 80 - 120            |  |
| Tetrachloroethene           |  | 52.57                   |  | 5.0 50 0 105 74 - 125            |  |
| Toluene                     |  | 47.21                   |  | 5.0 50 0 94.4 80 - 120           |  |
| trans-1,2-Dichloroethene    |  | 49.72                   |  | 5.0 50 0 99.4 78 - 120           |  |
| trans-1,3-Dichloropropene   |  | 54.1                    |  | 5.0 50 0 108 80 - 120            |  |
| Trichloroethene             |  | 54.83                   |  | 5.0 50 0 110 80 - 120            |  |
| Vinyl chloride              |  | 43.58                   |  | 2.0 50 0 87.2 70 - 127           |  |
| Xylenes, Total              |  | 142.8                   |  | 15 150 0 95.2 80 - 120           |  |
| Surr: 1,2-Dichloroethane-d4 |  | 46.45                   |  | 5.0 50 0 92.9 70 - 125           |  |
| Surr: 4-Bromofluorobenzene  |  | 47.38                   |  | 5.0 50 0 94.8 72 - 125           |  |
| Surr: Dibromofluoromethane  |  | 47.82                   |  | 5.0 50 0 95.6 71 - 125           |  |
| Surr: Toluene-d8            |  | 49.15                   |  | 5.0 50 0 98.3 75 - 125           |  |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240229         |        | Instrument: VOA1           |         | Method: SW8260 |      |                                  |               |        |           |      |
|---------------------------|--------|----------------------------|---------|----------------|------|----------------------------------|---------------|--------|-----------|------|
| MS                        |        | Sample ID: HS14090013-01MS |         | Units: ug/L    |      | Analysis Date: 02-Sep-2014 16:45 |               |        |           |      |
| Client ID:                |        | Run ID: VOA1_240229        |         | SeqNo: 2989192 |      | PrepDate:                        |               | DF: 25 |           |      |
| Analyte                   | Result | PQL                        | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD   | RPD Limit | Qual |
| 1,1,1-Trichloroethane     | 1265   | 120                        | 1250    | 0              | 101  | 80 - 120                         |               |        |           |      |
| 1,1,2,2-Tetrachloroethane | 1406   | 120                        | 1250    | 0              | 112  | 72 - 120                         |               |        |           |      |
| 1,1,2-Trichloroethane     | 1157   | 120                        | 1250    | 0              | 92.6 | 80 - 120                         |               |        |           |      |
| 1,1-Dichloroethane        | 1215   | 120                        | 1250    | 0              | 97.2 | 76 - 120                         |               |        |           |      |
| 1,1-Dichloroethene        | 1275   | 120                        | 1250    | 0              | 102  | 73 - 124                         |               |        |           |      |
| 1,2,4-Trimethylbenzene    | 1089   | 120                        | 1250    | 0              | 87.1 | 68 - 123                         |               |        |           |      |
| 1,2-Dibromoethane         | 1205   | 120                        | 1250    | 0              | 96.4 | 80 - 120                         |               |        |           |      |
| 1,2-Dichloroethane        | 1228   | 120                        | 1250    | 0              | 98.2 | 78 - 120                         |               |        |           |      |
| 1,2-Dichloropropane       | 1415   | 120                        | 1250    | 0              | 113  | 80 - 120                         |               |        |           |      |
| 1,3,5-Trimethylbenzene    | 1099   | 120                        | 1250    | 0              | 87.9 | 80 - 120                         |               |        |           |      |
| 2-Butanone                | 2623   | 250                        | 2500    | 0              | 105  | 58 - 132                         |               |        |           |      |
| 2-Hexanone                | 2359   | 250                        | 2500    | 0              | 94.4 | 61 - 130                         |               |        |           |      |
| 4-Isopropyltoluene        | 1077   | 120                        | 1250    | 0              | 86.2 | 79 - 120                         |               |        |           |      |
| 4-Methyl-2-pentanone      | 2343   | 250                        | 2500    | 0              | 93.7 | 65 - 127                         |               |        |           |      |
| Acetone                   | 3107   | 250                        | 2500    | 0              | 124  | 59 - 137                         |               |        |           |      |
| Benzene                   | 1178   | 120                        | 1250    | 0              | 94.2 | 73 - 121                         |               |        |           |      |
| Bromodichloromethane      | 1225   | 120                        | 1250    | 0              | 98.0 | 75 - 125                         |               |        |           |      |
| Bromoform                 | 1344   | 120                        | 1250    | 0              | 108  | 70 - 130                         |               |        |           |      |
| Bromomethane              | 948.9  | 120                        | 1250    | 0              | 75.9 | 60 - 145                         |               |        |           |      |
| Carbon disulfide          | 2705   | 250                        | 2500    | 0              | 108  | 68 - 141                         |               |        |           |      |
| Carbon tetrachloride      | 1211   | 120                        | 1250    | 0              | 96.9 | 75 - 125                         |               |        |           |      |
| Chlorobenzene             | 1163   | 120                        | 1250    | 14.55          | 91.9 | 80 - 120                         |               |        |           |      |
| Chloroethane              | 1202   | 120                        | 1250    | 0              | 96.2 | 70 - 130                         |               |        |           |      |
| Chloroform                | 1771   | 120                        | 1250    | 653.3          | 89.4 | 70 - 130                         |               |        |           |      |
| Chloromethane             | 797.6  | 120                        | 1250    | 0              | 63.8 | 67 - 123                         |               |        |           | S    |
| cis-1,2-Dichloroethene    | 1277   | 120                        | 1250    | 0              | 102  | 78 - 120                         |               |        |           |      |
| cis-1,3-Dichloropropene   | 1218   | 120                        | 1250    | 0              | 97.4 | 80 - 120                         |               |        |           |      |
| Dibromochloromethane      | 1261   | 120                        | 1250    | 0              | 101  | 80 - 120                         |               |        |           |      |
| Ethylbenzene              | 1133   | 120                        | 1250    | 0              | 90.7 | 80 - 120                         |               |        |           |      |
| Isopropylbenzene          | 1083   | 120                        | 1250    | 0              | 86.6 | 75 - 130                         |               |        |           |      |
| m,p-Xylene                | 2259   | 250                        | 2500    | 0              | 90.4 | 78 - 121                         |               |        |           |      |
| Methyl tert-butyl ether   | 1345   | 120                        | 1250    | 0              | 108  | 70 - 125                         |               |        |           |      |
| Methylene chloride        | 1473   | 250                        | 1250    | 0              | 118  | 65 - 133                         |               |        |           |      |
| Naphthalene               | 1279   | 120                        | 1250    | 0              | 102  | 65 - 135                         |               |        |           |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240229           |                            | Instrument: VOA1 |         | Method: SW8260                   |                                                 |
|-----------------------------|----------------------------|------------------|---------|----------------------------------|-------------------------------------------------|
| <b>MS</b>                   | Sample ID: HS14090013-01MS | Units: ug/L      |         | Analysis Date: 02-Sep-2014 16:45 |                                                 |
| Client ID:                  | Run ID: VOA1_240229        | SeqNo: 2989192   |         | PrepDate:                        | DF: 25                                          |
| Analyte                     | Result                     | PQL              | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| n-Butylbenzene              | 1095                       | 120              | 1250    | 0 87.6                           | 77 - 120                                        |
| n-Propylbenzene             | 1072                       | 120              | 1250    | 0 85.8                           | 78 - 120                                        |
| o-Xylene                    | 1131                       | 120              | 1250    | 0 90.5                           | 80 - 120                                        |
| sec-Butylbenzene            | 1064                       | 120              | 1250    | 0 85.1                           | 78 - 120                                        |
| Styrene                     | 1234                       | 120              | 1250    | 0 98.7                           | 80 - 120                                        |
| Tetrachloroethene           | 1140                       | 120              | 1250    | 0 91.2                           | 74 - 125                                        |
| Toluene                     | 1133                       | 120              | 1250    | 0 90.7                           | 80 - 120                                        |
| trans-1,2-Dichloroethene    | 1251                       | 120              | 1250    | 0 100                            | 78 - 120                                        |
| trans-1,3-Dichloropropene   | 1318                       | 120              | 1250    | 0 105                            | 80 - 120                                        |
| Trichloroethene             | 1242                       | 120              | 1250    | 0 99.4                           | 80 - 120                                        |
| Vinyl chloride              | 896.7                      | 50               | 1250    | 0 71.7                           | 70 - 127                                        |
| Xylenes, Total              | 3391                       | 380              | 3750    | 0 90.4                           | 80 - 120                                        |
| Surr: 1,2-Dichloroethane-d4 | 1321                       | 120              | 1250    | 0 106                            | 70 - 125                                        |
| Surr: 4-Bromofluorobenzene  | 1189                       | 120              | 1250    | 0 95.1                           | 72 - 125                                        |
| Surr: Dibromofluoromethane  | 1386                       | 120              | 1250    | 0 111                            | 71 - 125                                        |
| Surr: Toluene-d8            | 1193                       | 120              | 1250    | 0 95.4                           | 75 - 125                                        |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: R240229         |        | Instrument: VOA1            |         | Method: SW8260 |      |                                  |               |        |           |      |
|---------------------------|--------|-----------------------------|---------|----------------|------|----------------------------------|---------------|--------|-----------|------|
| MSD                       |        | Sample ID: HS14090013-01MSD |         | Units: ug/L    |      | Analysis Date: 02-Sep-2014 17:15 |               |        |           |      |
| Client ID:                |        | Run ID: VOA1_240229         |         | SeqNo: 2989193 |      | PrepDate:                        |               | DF: 25 |           |      |
| Analyte                   | Result | PQL                         | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD   | RPD Limit | Qual |
| 1,1,1-Trichloroethane     | 1093   | 120                         | 1250    | 0              | 87.4 | 80 - 120                         | 1265          | 14.6   | 20        |      |
| 1,1,2,2-Tetrachloroethane | 1319   | 120                         | 1250    | 0              | 105  | 72 - 120                         | 1406          | 6.43   | 20        |      |
| 1,1,2-Trichloroethane     | 1163   | 120                         | 1250    | 0              | 93.1 | 80 - 120                         | 1157          | 0.513  | 20        |      |
| 1,1-Dichloroethane        | 1117   | 120                         | 1250    | 0              | 89.3 | 76 - 120                         | 1215          | 8.45   | 20        |      |
| 1,1-Dichloroethene        | 1172   | 120                         | 1250    | 0              | 93.8 | 73 - 124                         | 1275          | 8.44   | 20        |      |
| 1,2,4-Trimethylbenzene    | 1046   | 120                         | 1250    | 0              | 83.7 | 68 - 123                         | 1089          | 4.07   | 20        |      |
| 1,2-Dibromoethane         | 1099   | 120                         | 1250    | 0              | 87.9 | 80 - 120                         | 1205          | 9.18   | 20        |      |
| 1,2-Dichloroethane        | 1090   | 120                         | 1250    | 0              | 87.2 | 78 - 120                         | 1228          | 11.9   | 20        |      |
| 1,2-Dichloropropane       | 1275   | 120                         | 1250    | 0              | 102  | 80 - 120                         | 1415          | 10.4   | 20        |      |
| 1,3,5-Trimethylbenzene    | 1001   | 120                         | 1250    | 0              | 80.1 | 80 - 120                         | 1099          | 9.26   | 20        |      |
| 2-Butanone                | 2401   | 250                         | 2500    | 0              | 96.0 | 58 - 132                         | 2623          | 8.86   | 20        |      |
| 2-Hexanone                | 2258   | 250                         | 2500    | 0              | 90.3 | 61 - 130                         | 2359          | 4.4    | 20        |      |
| 4-Isopropyltoluene        | 1016   | 120                         | 1250    | 0              | 81.2 | 79 - 120                         | 1077          | 5.86   | 20        |      |
| 4-Methyl-2-pentanone      | 2142   | 250                         | 2500    | 0              | 85.7 | 65 - 127                         | 2343          | 8.95   | 20        |      |
| Acetone                   | 2800   | 250                         | 2500    | 0              | 112  | 59 - 137                         | 3107          | 10.4   | 20        |      |
| Benzene                   | 1019   | 120                         | 1250    | 0              | 81.5 | 73 - 121                         | 1178          | 14.4   | 20        |      |
| Bromodichloromethane      | 1196   | 120                         | 1250    | 0              | 95.7 | 75 - 125                         | 1225          | 2.37   | 20        |      |
| Bromoform                 | 1220   | 120                         | 1250    | 0              | 97.6 | 70 - 130                         | 1344          | 9.72   | 20        |      |
| Bromomethane              | 934.7  | 120                         | 1250    | 0              | 74.8 | 60 - 145                         | 948.9         | 1.51   | 20        |      |
| Carbon disulfide          | 2603   | 250                         | 2500    | 0              | 104  | 68 - 141                         | 2705          | 3.85   | 20        |      |
| Carbon tetrachloride      | 1090   | 120                         | 1250    | 0              | 87.2 | 75 - 125                         | 1211          | 10.5   | 20        |      |
| Chlorobenzene             | 1085   | 120                         | 1250    | 14.55          | 85.6 | 80 - 120                         | 1163          | 6.91   | 20        |      |
| Chloroethane              | 1010   | 120                         | 1250    | 0              | 80.8 | 76 - 121                         | 1202          | 17.4   | 20        |      |
| Chloroform                | 1680   | 120                         | 1250    | 653.3          | 82.1 | 70 - 130                         | 1771          | 5.29   | 20        |      |
| Chloromethane             | 747.2  | 120                         | 1250    | 0              | 59.8 | 67 - 123                         | 797.6         | 6.54   | 20        | S    |
| cis-1,2-Dichloroethene    | 1308   | 120                         | 1250    | 0              | 105  | 78 - 120                         | 1277          | 2.35   | 20        |      |
| cis-1,3-Dichloropropene   | 1148   | 120                         | 1250    | 0              | 91.8 | 80 - 120                         | 1218          | 5.91   | 20        |      |
| Dibromochloromethane      | 1156   | 120                         | 1250    | 0              | 92.5 | 80 - 120                         | 1261          | 8.65   | 20        |      |
| Ethylbenzene              | 1063   | 120                         | 1250    | 0              | 85.0 | 80 - 120                         | 1133          | 6.41   | 20        |      |
| Isopropylbenzene          | 1049   | 120                         | 1250    | 0              | 83.9 | 75 - 130                         | 1083          | 3.16   | 20        |      |
| m,p-Xylene                | 2143   | 250                         | 2500    | 0              | 85.7 | 78 - 121                         | 2259          | 5.28   | 20        |      |
| Methyl tert-butyl ether   | 1336   | 120                         | 1250    | 0              | 107  | 70 - 125                         | 1345          | 0.671  | 20        |      |
| Methylene chloride        | 1360   | 250                         | 1250    | 0              | 109  | 65 - 133                         | 1473          | 7.96   | 20        |      |
| Naphthalene               | 1165   | 120                         | 1250    | 0              | 93.2 | 65 - 135                         | 1279          | 9.3    | 20        |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240229           |                                    | Instrument: VOA1   |                       | Method: SW8260                          |           |               |               |      |           |      |
|-----------------------------|------------------------------------|--------------------|-----------------------|-----------------------------------------|-----------|---------------|---------------|------|-----------|------|
| <b>MSD</b>                  | Sample ID: <b>HS14090013-01MSD</b> | Units: <b>ug/L</b> |                       | Analysis Date: <b>02-Sep-2014 17:15</b> |           |               |               |      |           |      |
| Client ID:                  | Run ID: <b>VOA1_240229</b>         |                    | SeqNo: <b>2989193</b> |                                         | PrepDate: |               | DF: <b>25</b> |      |           |      |
| Analyte                     | Result                             | PQL                | SPK Val               | SPK Ref Value                           | %REC      | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
| n-Butylbenzene              | 986.4                              | 120                | 1250                  | 0                                       | 78.9      | 77 - 120      | 1095          | 10.4 | 20        |      |
| n-Propylbenzene             | 1042                               | 120                | 1250                  | 0                                       | 83.4      | 78 - 120      | 1072          | 2.83 | 20        |      |
| o-Xylene                    | 1015                               | 120                | 1250                  | 0                                       | 81.2      | 80 - 120      | 1131          | 10.8 | 20        |      |
| sec-Butylbenzene            | 1018                               | 120                | 1250                  | 0                                       | 81.5      | 78 - 120      | 1064          | 4.43 | 20        |      |
| Styrene                     | 1077                               | 120                | 1250                  | 0                                       | 86.1      | 80 - 120      | 1234          | 13.6 | 20        |      |
| Tetrachloroethene           | 1048                               | 120                | 1250                  | 0                                       | 83.8      | 74 - 125      | 1140          | 8.45 | 20        |      |
| Toluene                     | 1033                               | 120                | 1250                  | 0                                       | 82.6      | 80 - 120      | 1133          | 9.26 | 20        |      |
| trans-1,2-Dichloroethene    | 1213                               | 120                | 1250                  | 0                                       | 97.0      | 78 - 120      | 1251          | 3.09 | 20        |      |
| trans-1,3-Dichloropropene   | 1240                               | 120                | 1250                  | 0                                       | 99.2      | 80 - 120      | 1318          | 6.07 | 20        |      |
| Trichloroethene             | 1155                               | 120                | 1250                  | 0                                       | 92.4      | 80 - 120      | 1242          | 7.23 | 20        |      |
| Vinyl chloride              | 831.7                              | 50                 | 1250                  | 0                                       | 66.5      | 70 - 127      | 896.7         | 7.52 | 20        | S    |
| Xylenes, Total              | 3158                               | 380                | 3750                  | 0                                       | 84.2      | 78 - 121      | 3391          | 7.11 | 20        |      |
| Surr: 1,2-Dichloroethane-d4 | 1281                               | 120                | 1250                  | 0                                       | 102       | 70 - 125      | 1321          | 3.14 | 20        |      |
| Surr: 4-Bromofluorobenzene  | 1204                               | 120                | 1250                  | 0                                       | 96.3      | 72 - 125      | 1189          | 1.26 | 20        |      |
| Surr: Dibromofluoromethane  | 1337                               | 120                | 1250                  | 0                                       | 107       | 71 - 125      | 1386          | 3.61 | 20        |      |
| Surr: Toluene-d8            | 1224                               | 120                | 1250                  | 0                                       | 97.9      | 75 - 125      | 1193          | 2.56 | 20        |      |

The following samples were analyzed in this batch:

|               |               |                   |               |
|---------------|---------------|-------------------|---------------|
| HS14080845-13 | HS14080845-14 | HS14080845-15     | HS14080845-16 |
| HS14080845-17 | HS14080845-18 | HS14080845-19-OTT |               |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: R240325         |                         | Instrument: VOA1 |         | Method: SW8260                   |      |               |               |      |                |
|---------------------------|-------------------------|------------------|---------|----------------------------------|------|---------------|---------------|------|----------------|
| MBLK                      | Sample ID: VBLKW-140903 | Units: ug/L      |         | Analysis Date: 03-Sep-2014 11:50 |      |               |               |      |                |
| Client ID:                | Run ID: VOA1_240325     | SeqNo: 2990973   |         | PrepDate:                        |      | DF: 1         |               |      |                |
| Analyte                   | Result                  | PQL              | SPK Val | SPK Ref Value                    | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |
| 1,1,1-Trichloroethane     | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,1,2,2-Tetrachloroethane | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,1,2-Trichloroethane     | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,1-Dichloroethane        | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,1-Dichloroethene        | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,2,4-Trimethylbenzene    | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,2-Dibromoethane         | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,2-Dichloroethane        | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,2-Dichloropropane       | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 1,3,5-Trimethylbenzene    | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 2-Butanone                | ND                      | 10               |         |                                  |      |               |               |      |                |
| 2-Hexanone                | ND                      | 10               |         |                                  |      |               |               |      |                |
| 4-Isopropyltoluene        | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| 4-Methyl-2-pentanone      | ND                      | 10               |         |                                  |      |               |               |      |                |
| Acetone                   | ND                      | 10               |         |                                  |      |               |               |      |                |
| Benzene                   | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Bromodichloromethane      | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Bromoform                 | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Bromomethane              | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Carbon disulfide          | ND                      | 10               |         |                                  |      |               |               |      |                |
| Carbon tetrachloride      | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Chlorobenzene             | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Chloroethane              | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Chloroform                | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Chloromethane             | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| cis-1,2-Dichloroethene    | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| cis-1,3-Dichloropropene   | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Dibromochloromethane      | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Ethylbenzene              | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Isopropylbenzene          | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| m,p-Xylene                | ND                      | 10               |         |                                  |      |               |               |      |                |
| Methyl tert-butyl ether   | ND                      | 5.0              |         |                                  |      |               |               |      |                |
| Methylene chloride        | ND                      | 10               |         |                                  |      |               |               |      |                |
| Naphthalene               | ND                      | 5.0              |         |                                  |      |               |               |      |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: R240325           |                         | Instrument: VOA1 |                | Method: SW8260                   |           |               |               |      |                |
|-----------------------------|-------------------------|------------------|----------------|----------------------------------|-----------|---------------|---------------|------|----------------|
| MBLK                        | Sample ID: VBLKW-140903 | Units: ug/L      |                | Analysis Date: 03-Sep-2014 11:50 |           |               |               |      |                |
| Client ID:                  | Run ID: VOA1_240325     |                  | SeqNo: 2990973 |                                  | PrepDate: |               | DF: 1         |      |                |
| Analyte                     | Result                  | PQL              | SPK Val        | SPK Ref Value                    | %REC      | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |
| n-Butylbenzene              | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| n-Propylbenzene             | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| o-Xylene                    | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| sec-Butylbenzene            | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Styrene                     | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Tetrachloroethene           | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Toluene                     | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| trans-1,2-Dichloroethene    | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| trans-1,3-Dichloropropene   | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Trichloroethene             | ND                      | 5.0              |                |                                  |           |               |               |      |                |
| Vinyl chloride              | ND                      | 2.0              |                |                                  |           |               |               |      |                |
| Xylenes, Total              | ND                      | 15               |                |                                  |           |               |               |      |                |
| Surr: 1,2-Dichloroethane-d4 | 48.87                   | 5.0              | 50             | 0                                | 97.7      | 70 - 125      |               |      |                |
| Surr: 4-Bromofluorobenzene  | 48.3                    | 5.0              | 50             | 0                                | 96.6      | 72 - 125      |               |      |                |
| Surr: Dibromofluoromethane  | 50.14                   | 5.0              | 50             | 0                                | 100       | 71 - 125      |               |      |                |
| Surr: Toluene-d8            | 49.95                   | 5.0              | 50             | 0                                | 99.9      | 75 - 125      |               |      |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: R240325         |  | Instrument: VOA1        |  | Method: SW8260                   |  |
|---------------------------|--|-------------------------|--|----------------------------------|--|
| LCS                       |  | Sample ID: VLCSW-140903 |  | Units: ug/L                      |  |
| Client ID:                |  | Run ID: VOA1_240325     |  | SeqNo: 2990972                   |  |
| Analyte                   |  | Result                  |  | Analysis Date: 03-Sep-2014 10:54 |  |
|                           |  | PQL                     |  | PrepDate: DF: 1                  |  |
|                           |  | SPK Val                 |  | SPK Ref Value %REC               |  |
|                           |  |                         |  | Control Limit                    |  |
|                           |  |                         |  | RPD Ref Value %RPD               |  |
|                           |  |                         |  | RPD Limit Qual                   |  |
| 1,1,1-Trichloroethane     |  | 45.63                   |  | 80 - 120                         |  |
| 1,1,2,2-Tetrachloroethane |  | 52.77                   |  | 72 - 120                         |  |
| 1,1,2-Trichloroethane     |  | 45.9                    |  | 80 - 120                         |  |
| 1,1-Dichloroethane        |  | 44.09                   |  | 76 - 120                         |  |
| 1,1-Dichloroethene        |  | 48.62                   |  | 73 - 124                         |  |
| 1,2,4-Trimethylbenzene    |  | 45.15                   |  | 68 - 123                         |  |
| 1,2-Dibromoethane         |  | 46.09                   |  | 80 - 120                         |  |
| 1,2-Dichloroethane        |  | 42.19                   |  | 78 - 120                         |  |
| 1,2-Dichloropropane       |  | 55.52                   |  | 80 - 120                         |  |
| 1,3,5-Trimethylbenzene    |  | 46.04                   |  | 80 - 120                         |  |
| 2-Butanone                |  | 86.9                    |  | 58 - 132                         |  |
| 2-Hexanone                |  | 91.02                   |  | 61 - 130                         |  |
| 4-Isopropyltoluene        |  | 45.65                   |  | 79 - 120                         |  |
| 4-Methyl-2-pentanone      |  | 88.26                   |  | 65 - 127                         |  |
| Acetone                   |  | 95.94                   |  | 59 - 137                         |  |
| Benzene                   |  | 44.97                   |  | 73 - 121                         |  |
| Bromodichloromethane      |  | 46.54                   |  | 75 - 125                         |  |
| Bromoform                 |  | 50.02                   |  | 70 - 130                         |  |
| Bromomethane              |  | 44.66                   |  | 60 - 145                         |  |
| Carbon disulfide          |  | 112.3                   |  | 68 - 141                         |  |
| Carbon tetrachloride      |  | 44.82                   |  | 75 - 125                         |  |
| Chlorobenzene             |  | 45.9                    |  | 80 - 120                         |  |
| Chloroethane              |  | 48.04                   |  | 70 - 130                         |  |
| Chloroform                |  | 45.16                   |  | 70 - 130                         |  |
| Chloromethane             |  | 40.79                   |  | 67 - 123                         |  |
| cis-1,2-Dichloroethene    |  | 48.33                   |  | 78 - 120                         |  |
| cis-1,3-Dichloropropene   |  | 46.73                   |  | 80 - 120                         |  |
| Dibromochloromethane      |  | 48.31                   |  | 80 - 120                         |  |
| Ethylbenzene              |  | 45.12                   |  | 80 - 120                         |  |
| Isopropylbenzene          |  | 44.75                   |  | 75 - 130                         |  |
| m,p-Xylene                |  | 89.33                   |  | 78 - 121                         |  |
| Methyl tert-butyl ether   |  | 51.41                   |  | 70 - 125                         |  |
| Methylene chloride        |  | 53.77                   |  | 65 - 133                         |  |
| Naphthalene               |  | 50.16                   |  | 65 - 135                         |  |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240325           |  | Instrument: VOA1        |  | Method: SW8260                   |  |
|-----------------------------|--|-------------------------|--|----------------------------------|--|
| LCS                         |  | Sample ID: VLCSW-140903 |  | Units: ug/L                      |  |
| Client ID:                  |  | Run ID: VOA1_240325     |  | SeqNo: 2990972                   |  |
| Analyte                     |  | Result                  |  | Analysis Date: 03-Sep-2014 10:54 |  |
|                             |  | PQL                     |  | PrepDate: DF: 1                  |  |
|                             |  | SPK Val                 |  | SPK Ref Value %REC               |  |
|                             |  |                         |  | Control Limit                    |  |
|                             |  |                         |  | RPD Ref Value %RPD               |  |
|                             |  |                         |  | RPD Limit Qual                   |  |
| n-Butylbenzene              |  | 43.9                    |  | 50 0 87.8 77 - 120               |  |
| n-Propylbenzene             |  | 46.05                   |  | 50 0 92.1 78 - 120               |  |
| o-Xylene                    |  | 43.04                   |  | 50 0 86.1 80 - 120               |  |
| sec-Butylbenzene            |  | 44.5                    |  | 50 0 89.0 78 - 120               |  |
| Styrene                     |  | 45.54                   |  | 50 0 91.1 80 - 120               |  |
| Tetrachloroethene           |  | 48.05                   |  | 50 0 96.1 74 - 125               |  |
| Toluene                     |  | 44.31                   |  | 50 0 88.6 80 - 120               |  |
| trans-1,2-Dichloroethene    |  | 45.98                   |  | 50 0 92.0 78 - 120               |  |
| trans-1,3-Dichloropropene   |  | 51.72                   |  | 50 0 103 80 - 120                |  |
| Trichloroethene             |  | 46.99                   |  | 50 0 94.0 80 - 120               |  |
| Vinyl chloride              |  | 42.98                   |  | 50 0 86.0 70 - 127               |  |
| Xylenes, Total              |  | 132.4                   |  | 15 0 88.2 80 - 120               |  |
| Surr: 1,2-Dichloroethane-d4 |  | 48.76                   |  | 50 0 97.5 70 - 125               |  |
| Surr: 4-Bromofluorobenzene  |  | 48.51                   |  | 50 0 97.0 72 - 125               |  |
| Surr: Dibromofluoromethane  |  | 48.21                   |  | 50 0 96.4 71 - 125               |  |
| Surr: Toluene-d8            |  | 47.88                   |  | 50 0 95.8 75 - 125               |  |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: R240325         |        | Instrument: VOA1           |         | Method: SW8260 |      |
|---------------------------|--------|----------------------------|---------|----------------|------|
| MS                        |        | Sample ID: HS14080845-20MS |         | Units: ug/L    |      |
| Client ID: DUP-4          |        | Run ID: VOA1_240325        |         | SeqNo: 2990980 |      |
|                           |        |                            |         | PrepDate:      |      |
|                           |        |                            |         | DF: 1          |      |
| Analyte                   | Result | PQL                        | SPK Val | SPK Ref Value  | %REC |
| 1,1,1-Trichloroethane     | 45.43  | 5.0                        | 50      | 0              | 90.9 |
| 1,1,2,2-Tetrachloroethane | 58.7   | 5.0                        | 50      | 0              | 117  |
| 1,1,2-Trichloroethane     | 51.34  | 5.0                        | 50      | 0              | 103  |
| 1,1-Dichloroethane        | 46.89  | 5.0                        | 50      | 0              | 93.8 |
| 1,1-Dichloroethene        | 47.35  | 5.0                        | 50      | 0              | 94.7 |
| 1,2,4-Trimethylbenzene    | 44.31  | 5.0                        | 50      | 0              | 88.6 |
| 1,2-Dibromoethane         | 48.84  | 5.0                        | 50      | 0              | 97.7 |
| 1,2-Dichloroethane        | 49.34  | 5.0                        | 50      | 0              | 98.7 |
| 1,2-Dichloropropane       | 59.24  | 5.0                        | 50      | 0              | 118  |
| 1,3,5-Trimethylbenzene    | 44.24  | 5.0                        | 50      | 0              | 88.5 |
| 2-Butanone                | 98.92  | 10                         | 100     | 0              | 98.9 |
| 2-Hexanone                | 101.3  | 10                         | 100     | 0              | 101  |
| 4-Isopropyltoluene        | 43.75  | 5.0                        | 50      | 0              | 87.5 |
| 4-Methyl-2-pentanone      | 98.22  | 10                         | 100     | 0              | 98.2 |
| Acetone                   | 107.1  | 10                         | 100     | 0              | 107  |
| Benzene                   | 49.51  | 5.0                        | 50      | 2.421          | 94.2 |
| Bromodichloromethane      | 52.03  | 5.0                        | 50      | 0              | 104  |
| Bromoform                 | 55.52  | 5.0                        | 50      | 0              | 111  |
| Bromomethane              | 38.77  | 5.0                        | 50      | 0              | 77.5 |
| Carbon disulfide          | 101.8  | 10                         | 100     | 0              | 102  |
| Carbon tetrachloride      | 46.65  | 5.0                        | 50      | 0              | 93.3 |
| Chlorobenzene             | 47.79  | 5.0                        | 50      | 0              | 95.6 |
| Chloroethane              | 45.44  | 5.0                        | 50      | 0              | 90.9 |
| Chloroform                | 47.99  | 5.0                        | 50      | 0.6834         | 94.6 |
| Chloromethane             | 31.5   | 5.0                        | 50      | 0              | 63.0 |
| cis-1,2-Dichloroethene    | 48.92  | 5.0                        | 50      | 0              | 97.8 |
| cis-1,3-Dichloropropene   | 51.86  | 5.0                        | 50      | 0              | 104  |
| Dibromochloromethane      | 53.6   | 5.0                        | 50      | 0              | 107  |
| Ethylbenzene              | 46.24  | 5.0                        | 50      | 0              | 92.5 |
| Isopropylbenzene          | 45.14  | 5.0                        | 50      | 0              | 90.3 |
| m,p-Xylene                | 97.4   | 10                         | 100     | 0              | 97.4 |
| Methyl tert-butyl ether   | 53.53  | 5.0                        | 50      | 0              | 107  |
| Methylene chloride        | 56.99  | 10                         | 50      | 0              | 114  |
| Naphthalene               | 50.63  | 5.0                        | 50      | 0              | 101  |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: R240325           |        | Instrument: VOA1           |         | Method: SW8260     |                                                 |
|-----------------------------|--------|----------------------------|---------|--------------------|-------------------------------------------------|
| MS                          |        | Sample ID: HS14080845-20MS |         | Units: ug/L        |                                                 |
| Client ID: DUP-4            |        | Run ID: VOA1_240325        |         | SeqNo: 2990980     |                                                 |
|                             |        |                            |         | PrepDate:          |                                                 |
|                             |        |                            |         | DF: 1              |                                                 |
| Analyte                     | Result | PQL                        | SPK Val | SPK Ref Value %REC | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| n-Butylbenzene              | 40.76  | 5.0                        | 50      | 0 81.5             | 77 - 120                                        |
| n-Propylbenzene             | 41.88  | 5.0                        | 50      | 0 83.8             | 78 - 120                                        |
| o-Xylene                    | 47.71  | 5.0                        | 50      | 0 95.4             | 80 - 120                                        |
| sec-Butylbenzene            | 42.11  | 5.0                        | 50      | 0 84.2             | 78 - 120                                        |
| Styrene                     | 51.9   | 5.0                        | 50      | 0 104              | 80 - 120                                        |
| Tetrachloroethene           | 48.73  | 5.0                        | 50      | 0 97.5             | 74 - 125                                        |
| Toluene                     | 45.15  | 5.0                        | 50      | 0 90.3             | 80 - 120                                        |
| trans-1,2-Dichloroethene    | 47.5   | 5.0                        | 50      | 0 95.0             | 78 - 120                                        |
| trans-1,3-Dichloropropene   | 55.61  | 5.0                        | 50      | 0 111              | 80 - 120                                        |
| Trichloroethene             | 50.23  | 5.0                        | 50      | 0 100              | 80 - 120                                        |
| Vinyl chloride              | 35.14  | 2.0                        | 50      | 0 70.3             | 70 - 127                                        |
| Xylenes, Total              | 145.1  | 15                         | 150     | 0 96.7             | 80 - 120                                        |
| Surr: 1,2-Dichloroethane-d4 | 47.09  | 5.0                        | 50      | 0 94.2             | 70 - 125                                        |
| Surr: 4-Bromofluorobenzene  | 49.43  | 5.0                        | 50      | 0 98.9             | 72 - 125                                        |
| Surr: Dibromofluoromethane  | 49.14  | 5.0                        | 50      | 0 98.3             | 71 - 125                                        |
| Surr: Toluene-d8            | 47.6   | 5.0                        | 50      | 0 95.2             | 75 - 125                                        |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

## QC BATCH REPORT

| Batch ID: R240325         |        | Instrument: VOA1            |         | Method: SW8260 |      |                                  |               |       |                |
|---------------------------|--------|-----------------------------|---------|----------------|------|----------------------------------|---------------|-------|----------------|
| MSD                       |        | Sample ID: HS14080845-20MSD |         | Units: ug/L    |      | Analysis Date: 03-Sep-2014 16:07 |               |       |                |
| Client ID: DUP-4          |        | Run ID: VOA1_240325         |         | SeqNo: 2990981 |      | PrepDate:                        |               | DF: 1 |                |
| Analyte                   | Result | PQL                         | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD  | RPD Limit Qual |
| 1,1,1-Trichloroethane     | 46.3   | 5.0                         | 50      | 0              | 92.6 | 80 - 120                         | 45.43         | 1.88  | 20             |
| 1,1,2,2-Tetrachloroethane | 52.69  | 5.0                         | 50      | 0              | 105  | 72 - 120                         | 58.7          | 10.8  | 20             |
| 1,1,2-Trichloroethane     | 46.85  | 5.0                         | 50      | 0              | 93.7 | 80 - 120                         | 51.34         | 9.14  | 20             |
| 1,1-Dichloroethane        | 44.18  | 5.0                         | 50      | 0              | 88.4 | 76 - 120                         | 46.89         | 5.96  | 20             |
| 1,1-Dichloroethene        | 46.98  | 5.0                         | 50      | 0              | 94.0 | 73 - 124                         | 47.35         | 0.792 | 20             |
| 1,2,4-Trimethylbenzene    | 40.48  | 5.0                         | 50      | 0              | 81.0 | 68 - 123                         | 44.31         | 9.02  | 20             |
| 1,2-Dibromoethane         | 45.45  | 5.0                         | 50      | 0              | 90.9 | 80 - 120                         | 48.84         | 7.2   | 20             |
| 1,2-Dichloroethane        | 43.62  | 5.0                         | 50      | 0              | 87.2 | 78 - 120                         | 49.34         | 12.3  | 20             |
| 1,2-Dichloropropane       | 55.07  | 5.0                         | 50      | 0              | 110  | 80 - 120                         | 59.24         | 7.29  | 20             |
| 1,3,5-Trimethylbenzene    | 43.05  | 5.0                         | 50      | 0              | 86.1 | 80 - 120                         | 44.24         | 2.73  | 20             |
| 2-Butanone                | 92.04  | 10                          | 100     | 0              | 92.0 | 58 - 132                         | 98.92         | 7.21  | 20             |
| 2-Hexanone                | 84.93  | 10                          | 100     | 0              | 84.9 | 61 - 130                         | 101.3         | 17.6  | 20             |
| 4-Isopropyltoluene        | 43.42  | 5.0                         | 50      | 0              | 86.8 | 79 - 120                         | 43.75         | 0.743 | 20             |
| 4-Methyl-2-pentanone      | 84.78  | 10                          | 100     | 0              | 84.8 | 65 - 127                         | 98.22         | 14.7  | 20             |
| Acetone                   | 92.01  | 10                          | 100     | 0              | 92.0 | 59 - 137                         | 107.1         | 15.2  | 20             |
| Benzene                   | 46.09  | 5.0                         | 50      | 2.421          | 87.3 | 73 - 121                         | 49.51         | 7.15  | 20             |
| Bromodichloromethane      | 47.77  | 5.0                         | 50      | 0              | 95.5 | 75 - 125                         | 52.03         | 8.54  | 20             |
| Bromoform                 | 50.86  | 5.0                         | 50      | 0              | 102  | 70 - 130                         | 55.52         | 8.75  | 20             |
| Bromomethane              | 41.5   | 5.0                         | 50      | 0              | 83.0 | 60 - 145                         | 38.77         | 6.8   | 20             |
| Carbon disulfide          | 105.1  | 10                          | 100     | 0              | 105  | 68 - 141                         | 101.8         | 3.1   | 20             |
| Carbon tetrachloride      | 45.59  | 5.0                         | 50      | 0              | 91.2 | 75 - 125                         | 46.65         | 2.28  | 20             |
| Chlorobenzene             | 44.66  | 5.0                         | 50      | 0              | 89.3 | 80 - 120                         | 47.79         | 6.77  | 20             |
| Chloroethane              | 40.65  | 5.0                         | 50      | 0              | 81.3 | 76 - 121                         | 45.44         | 11.1  | 20             |
| Chloroform                | 45.54  | 5.0                         | 50      | 0.6834         | 89.7 | 70 - 130                         | 47.99         | 5.24  | 20             |
| Chloromethane             | 30.59  | 5.0                         | 50      | 0              | 61.2 | 67 - 123                         | 31.5          | 2.92  | 20 S           |
| cis-1,2-Dichloroethene    | 49.68  | 5.0                         | 50      | 0              | 99.4 | 78 - 120                         | 48.92         | 1.54  | 20             |
| cis-1,3-Dichloropropene   | 45.84  | 5.0                         | 50      | 0              | 91.7 | 80 - 120                         | 51.86         | 12.3  | 20             |
| Dibromochloromethane      | 47.65  | 5.0                         | 50      | 0              | 95.3 | 80 - 120                         | 53.6          | 11.8  | 20             |
| Ethylbenzene              | 46.55  | 5.0                         | 50      | 0              | 93.1 | 80 - 120                         | 46.24         | 0.687 | 20             |
| Isopropylbenzene          | 45.3   | 5.0                         | 50      | 0              | 90.6 | 75 - 130                         | 45.14         | 0.36  | 20             |
| m,p-Xylene                | 86.08  | 10                          | 100     | 0              | 86.1 | 78 - 121                         | 97.4          | 12.3  | 20             |
| Methyl tert-butyl ether   | 50.2   | 5.0                         | 50      | 0              | 100  | 70 - 125                         | 53.53         | 6.43  | 20             |
| Methylene chloride        | 54.38  | 10                          | 50      | 0              | 109  | 65 - 133                         | 56.99         | 4.68  | 20             |
| Naphthalene               | 47.53  | 5.0                         | 50      | 0              | 95.1 | 65 - 135                         | 50.63         | 6.31  | 20             |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240325                                  |        | Instrument: VOA1            |         | Method: SW8260 |      |                                  |               |               |           |      |
|----------------------------------------------------|--------|-----------------------------|---------|----------------|------|----------------------------------|---------------|---------------|-----------|------|
| MSD                                                |        | Sample ID: HS14080845-20MSD |         | Units: ug/L    |      | Analysis Date: 03-Sep-2014 16:07 |               |               |           |      |
| Client ID: DUP-4                                   |        | Run ID: VOA1_240325         |         | SeqNo: 2990981 |      | PrepDate:                        |               | DF: 1         |           |      |
| Analyte                                            | Result | PQL                         | SPK Val | SPK Ref Value  | %REC | Control Limit                    | RPD Ref Value | %RPD          | RPD Limit | Qual |
| n-Butylbenzene                                     | 41.55  | 5.0                         | 50      | 0              | 83.1 | 77 - 120                         | 40.76         | 1.94          | 20        |      |
| n-Propylbenzene                                    | 41.53  | 5.0                         | 50      | 0              | 83.1 | 78 - 120                         | 41.88         | 0.834         | 20        |      |
| o-Xylene                                           | 44.97  | 5.0                         | 50      | 0              | 89.9 | 80 - 120                         | 47.71         | 5.92          | 20        |      |
| sec-Butylbenzene                                   | 41.21  | 5.0                         | 50      | 0              | 82.4 | 78 - 120                         | 42.11         | 2.17          | 20        |      |
| Styrene                                            | 48.95  | 5.0                         | 50      | 0              | 97.9 | 80 - 120                         | 51.9          | 5.84          | 20        |      |
| Tetrachloroethene                                  | 47.62  | 5.0                         | 50      | 0              | 95.2 | 74 - 125                         | 48.73         | 2.3           | 20        |      |
| Toluene                                            | 45.22  | 5.0                         | 50      | 0              | 90.4 | 80 - 120                         | 45.15         | 0.14          | 20        |      |
| trans-1,2-Dichloroethene                           | 47.34  | 5.0                         | 50      | 0              | 94.7 | 78 - 120                         | 47.5          | 0.333         | 20        |      |
| trans-1,3-Dichloropropene                          | 51.31  | 5.0                         | 50      | 0              | 103  | 80 - 120                         | 55.61         | 8.04          | 20        |      |
| Trichloroethene                                    | 47.32  | 5.0                         | 50      | 0              | 94.6 | 80 - 120                         | 50.23         | 5.97          | 20        |      |
| Vinyl chloride                                     | 32.48  | 2.0                         | 50      | 0              | 65.0 | 70 - 127                         | 35.14         | 7.88          | 20        | S    |
| Xylenes, Total                                     | 131    | 15                          | 150     | 0              | 87.4 | 78 - 121                         | 145.1         | 10.2          | 20        |      |
| Surr: 1,2-Dichloroethane-d4                        | 46.79  | 5.0                         | 50      | 0              | 93.6 | 70 - 125                         | 47.09         | 0.627         | 20        |      |
| Surr: 4-Bromofluorobenzene                         | 50.61  | 5.0                         | 50      | 0              | 101  | 72 - 125                         | 49.43         | 2.36          | 20        |      |
| Surr: Dibromofluoromethane                         | 49.6   | 5.0                         | 50      | 0              | 99.2 | 71 - 125                         | 49.14         | 0.927         | 20        |      |
| Surr: Toluene-d8                                   | 46.46  | 5.0                         | 50      | 0              | 92.9 | 75 - 125                         | 47.6          | 2.43          | 20        |      |
| The following samples were analyzed in this batch: |        |                             |         |                |      |                                  |               |               |           |      |
|                                                    |        | HS14080845-19               |         | HS14080845-20  |      | HS14080845-22                    |               | HS14080845-23 |           |      |
|                                                    |        | HS14080845-24               |         | HS14080845-25  |      |                                  |               |               |           |      |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R239983                                  |                             | Instrument: Balance1 |         | Method: M2540C                   |      |               |               |               |                |
|----------------------------------------------------|-----------------------------|----------------------|---------|----------------------------------|------|---------------|---------------|---------------|----------------|
| MBLK                                               | Sample ID: WBLK-082614      | Units: mg/L          |         | Analysis Date: 26-Aug-2014 18:00 |      |               |               |               |                |
| Client ID:                                         | Run ID: Balance1_239983     | SeqNo: 2983799       |         | PrepDate:                        |      | DF: 1         |               |               |                |
| Analyte                                            | Result                      | PQL                  | SPK Val | SPK Ref Value                    | %REC | Control Limit | RPD Ref Value | %RPD          | RPD Limit Qual |
| Total Dissolved Solids (Residue, Filterable)       |                             | ND                   | 10.0    |                                  |      |               |               |               |                |
| LCS                                                | Sample ID: WLCS-082614      | Units: mg/L          |         | Analysis Date: 26-Aug-2014 18:00 |      |               |               |               |                |
| Client ID:                                         | Run ID: Balance1_239983     | SeqNo: 2983800       |         | PrepDate:                        |      | DF: 1         |               |               |                |
| Analyte                                            | Result                      | PQL                  | SPK Val | SPK Ref Value                    | %REC | Control Limit | RPD Ref Value | %RPD          | RPD Limit Qual |
| Total Dissolved Solids (Residue, Filterable)       |                             | 964                  | 10.0    | 1000                             | 0    | 96.4          | 85 - 115      |               |                |
| DUP                                                | Sample ID: HS14080747-12DUP | Units: mg/L          |         | Analysis Date: 26-Aug-2014 18:00 |      |               |               |               |                |
| Client ID:                                         | Run ID: Balance1_239983     | SeqNo: 2983789       |         | PrepDate:                        |      | DF: 1         |               |               |                |
| Analyte                                            | Result                      | PQL                  | SPK Val | SPK Ref Value                    | %REC | Control Limit | RPD Ref Value | %RPD          | RPD Limit Qual |
| Total Dissolved Solids (Residue, Filterable)       |                             | 418                  | 10.0    |                                  |      | 410           | 1.93          | 10            |                |
| DUP                                                | Sample ID: HS14080673-01DUP | Units: mg/L          |         | Analysis Date: 26-Aug-2014 18:00 |      |               |               |               |                |
| Client ID:                                         | Run ID: Balance1_239983     | SeqNo: 2983778       |         | PrepDate:                        |      | DF: 1         |               |               |                |
| Analyte                                            | Result                      | PQL                  | SPK Val | SPK Ref Value                    | %REC | Control Limit | RPD Ref Value | %RPD          | RPD Limit Qual |
| Total Dissolved Solids (Residue, Filterable)       |                             | 534                  | 10.0    |                                  |      | 520           | 2.66          | 10            |                |
| The following samples were analyzed in this batch: |                             |                      |         | HS14080845-01                    |      | HS14080845-02 |               | HS14080845-03 |                |
|                                                    |                             |                      |         | HS14080845-05                    |      | HS14080845-06 |               | HS14080845-04 |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240114                                  |                             | Instrument: Balance1 |               | Method: M2540C                   |               |               |               |      |                |
|----------------------------------------------------|-----------------------------|----------------------|---------------|----------------------------------|---------------|---------------|---------------|------|----------------|
| MBLK                                               | Sample ID: WBLK-082814      | Units: mg/L          |               | Analysis Date: 28-Aug-2014 16:30 |               |               |               |      |                |
| Client ID:                                         | Run ID: Balance1_240114     | SeqNo: 2986593       |               | PrepDate:                        |               | DF: 1         |               |      |                |
| Analyte                                            | Result                      | PQL                  | SPK Val       | SPK Ref Value                    | %REC          | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |
| Total Dissolved Solids (Residue, Filterable)       |                             | ND                   | 10.0          |                                  |               |               |               |      |                |
| LCS                                                | Sample ID: WLCS-082814      | Units: mg/L          |               | Analysis Date: 28-Aug-2014 16:30 |               |               |               |      |                |
| Client ID:                                         | Run ID: Balance1_240114     | SeqNo: 2986594       |               | PrepDate:                        |               | DF: 1         |               |      |                |
| Analyte                                            | Result                      | PQL                  | SPK Val       | SPK Ref Value                    | %REC          | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |
| Total Dissolved Solids (Residue, Filterable)       |                             | 984                  | 10.0          | 1000                             | 0             | 98.4          | 85 - 115      |      |                |
| DUP                                                | Sample ID: HS14080845-11DUP | Units: mg/L          |               | Analysis Date: 28-Aug-2014 16:30 |               |               |               |      |                |
| Client ID: RW-1                                    | Run ID: Balance1_240114     | SeqNo: 2986893       |               | PrepDate:                        |               | DF: 1         |               |      |                |
| Analyte                                            | Result                      | PQL                  | SPK Val       | SPK Ref Value                    | %REC          | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |
| Total Dissolved Solids (Residue, Filterable)       |                             | 358                  | 10.0          |                                  |               | 368           | 2.75          | 10   |                |
| DUP                                                | Sample ID: HS14080814-01DUP | Units: mg/L          |               | Analysis Date: 28-Aug-2014 16:30 |               |               |               |      |                |
| Client ID:                                         | Run ID: Balance1_240114     | SeqNo: 2986586       |               | PrepDate:                        |               | DF: 1         |               |      |                |
| Analyte                                            | Result                      | PQL                  | SPK Val       | SPK Ref Value                    | %REC          | Control Limit | RPD Ref Value | %RPD | RPD Limit Qual |
| Total Dissolved Solids (Residue, Filterable)       |                             | 1958                 | 10.0          |                                  |               | 1940          | 0.924         | 10   |                |
| The following samples were analyzed in this batch: |                             |                      |               |                                  |               |               |               |      |                |
|                                                    |                             | HS14080845-07        | HS14080845-08 | HS14080845-09                    | HS14080845-10 |               |               |      |                |
|                                                    |                             | HS14080845-11        |               |                                  |               |               |               |      |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240131                                  |                             | Instrument: Balance1 |         | Method: M2540C                   |      |               |               |               |                |
|----------------------------------------------------|-----------------------------|----------------------|---------|----------------------------------|------|---------------|---------------|---------------|----------------|
| MBLK                                               | Sample ID: WBLK-082814      | Units: mg/L          |         | Analysis Date: 28-Aug-2014 18:00 |      |               |               |               |                |
| Client ID:                                         | Run ID: Balance1_240131     | SeqNo: 2986902       |         | PrepDate:                        |      | DF: 1         |               |               |                |
| Analyte                                            | Result                      | PQL                  | SPK Val | SPK Ref Value                    | %REC | Control Limit | RPD Ref Value | %RPD          | RPD Limit Qual |
| Total Dissolved Solids (Residue, Filterable)       |                             | ND                   | 10.0    |                                  |      |               |               |               |                |
| LCS                                                | Sample ID: WLCS-082814      | Units: mg/L          |         | Analysis Date: 28-Aug-2014 18:00 |      |               |               |               |                |
| Client ID:                                         | Run ID: Balance1_240131     | SeqNo: 2986903       |         | PrepDate:                        |      | DF: 1         |               |               |                |
| Analyte                                            | Result                      | PQL                  | SPK Val | SPK Ref Value                    | %REC | Control Limit | RPD Ref Value | %RPD          | RPD Limit Qual |
| Total Dissolved Solids (Residue, Filterable)       |                             | 942                  | 10.0    | 1000                             | 0    | 94.2          | 85 - 115      |               |                |
| DUP                                                | Sample ID: HS14080845-12DUP | Units: mg/L          |         | Analysis Date: 28-Aug-2014 18:00 |      |               |               |               |                |
| Client ID: MW-1                                    | Run ID: Balance1_240131     | SeqNo: 2986895       |         | PrepDate:                        |      | DF: 1         |               |               |                |
| Analyte                                            | Result                      | PQL                  | SPK Val | SPK Ref Value                    | %REC | Control Limit | RPD Ref Value | %RPD          | RPD Limit Qual |
| Total Dissolved Solids (Residue, Filterable)       |                             | 408                  | 10.0    |                                  |      | 395.2         | 3.19          | 10            |                |
| The following samples were analyzed in this batch: |                             | HS14080845-12        |         | HS14080845-13                    |      | HS14080845-14 |               | HS14080845-15 |                |
|                                                    |                             | HS14080845-16        |         | HS14080845-17                    |      | HS14080845-18 |               |               |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240150                                         |                                    | Instrument: Balance1  |         | Method: M2540C                          |                                                 |
|-----------------------------------------------------------|------------------------------------|-----------------------|---------|-----------------------------------------|-------------------------------------------------|
| <b>MBLK</b>                                               | Sample ID: <b>WBLK-082914</b>      | Units: <b>mg/L</b>    |         | Analysis Date: <b>29-Aug-2014 15:30</b> |                                                 |
| Client ID:                                                | Run ID: <b>Balance1_240150</b>     | SeqNo: <b>2987352</b> |         | PrepDate:                               | DF: <b>1</b>                                    |
| Analyte                                                   | Result                             | PQL                   | SPK Val | SPK Ref Value %REC                      | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Total Dissolved Solids (Residue, Filterable)              |                                    | ND                    | 10.0    |                                         |                                                 |
| <b>LCS</b>                                                | Sample ID: <b>WLCS-082914</b>      | Units: <b>mg/L</b>    |         | Analysis Date: <b>29-Aug-2014 15:30</b> |                                                 |
| Client ID:                                                | Run ID: <b>Balance1_240150</b>     | SeqNo: <b>2987353</b> |         | PrepDate:                               | DF: <b>1</b>                                    |
| Analyte                                                   | Result                             | PQL                   | SPK Val | SPK Ref Value %REC                      | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Total Dissolved Solids (Residue, Filterable)              |                                    | 956                   | 10.0    | 1000                                    | 0 95.6 85 - 115                                 |
| <b>DUP</b>                                                | Sample ID: <b>HS14080845-25DUP</b> | Units: <b>mg/L</b>    |         | Analysis Date: <b>29-Aug-2014 15:30</b> |                                                 |
| Client ID: <b>EB-8-22-14-A</b>                            | Run ID: <b>Balance1_240150</b>     | SeqNo: <b>2987351</b> |         | PrepDate:                               | DF: <b>1</b>                                    |
| Analyte                                                   | Result                             | PQL                   | SPK Val | SPK Ref Value %REC                      | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Total Dissolved Solids (Residue, Filterable)              |                                    | ND                    | 10.0    | 8                                       | 0 10                                            |
| <b>The following samples were analyzed in this batch:</b> |                                    |                       |         |                                         |                                                 |
| HS14080845-19                                             |                                    | HS14080845-20         |         | HS14080845-21                           |                                                 |
| HS14080845-23                                             |                                    | HS14080845-24         |         | HS14080845-25                           |                                                 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240187                                         |                             | Instrument: ManTech01 |         | Method: M2510 B                  |                                                 |
|-----------------------------------------------------------|-----------------------------|-----------------------|---------|----------------------------------|-------------------------------------------------|
| <b>MBLK</b>                                               | Sample ID: WBLKW1-140902    | Units: umhos/cm       |         | Analysis Date: 02-Sep-2014 11:13 |                                                 |
| Client ID:                                                | Run ID: ManTech01_240187    | SeqNo: 2988151        |         | PrepDate:                        | DF: 1                                           |
| Analyte                                                   | Result                      | PQL                   | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Specific Conductivity                                     | ND                          | 5.00                  |         |                                  |                                                 |
| <b>LCS</b>                                                | Sample ID: LCS-COND-140902  | Units: umhos/cm       |         | Analysis Date: 02-Sep-2014 11:22 |                                                 |
| Client ID:                                                | Run ID: ManTech01_240187    | SeqNo: 2988154        |         | PrepDate:                        | DF: 1                                           |
| Analyte                                                   | Result                      | PQL                   | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Specific Conductivity                                     | 1334                        | 5.00                  | 1413    | 0 94.4                           | 80 - 120                                        |
| <b>DUP</b>                                                | Sample ID: HS14080845-01DUP | Units: umhos/cm       |         | Analysis Date: 02-Sep-2014 12:13 |                                                 |
| Client ID: MW-29                                          | Run ID: ManTech01_240187    | SeqNo: 2988164        |         | PrepDate:                        | DF: 1                                           |
| Analyte                                                   | Result                      | PQL                   | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Specific Conductivity                                     | 1143                        | 5.00                  |         |                                  | 1141 0.174 20                                   |
| <b>The following samples were analyzed in this batch:</b> |                             |                       |         |                                  |                                                 |
| HS14080845-01                                             |                             | HS14080845-02         |         | HS14080845-03                    |                                                 |
| HS14080845-05                                             |                             | HS14080845-06         |         | HS14080845-07                    |                                                 |
| HS14080845-09                                             |                             | HS14080845-10         |         | HS14080845-11                    |                                                 |
| HS14080845-13                                             |                             | HS14080845-14         |         | HS14080845-12                    |                                                 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240188                                  |                             | Instrument: ManTech01    |                | Method: SM2320B |                                  |               |               |       |                |
|----------------------------------------------------|-----------------------------|--------------------------|----------------|-----------------|----------------------------------|---------------|---------------|-------|----------------|
|                                                    |                             |                          |                |                 |                                  |               |               |       |                |
| MBLK                                               | Sample ID: WBLKW1-140902    | Units: mg/L              |                |                 | Analysis Date: 02-Sep-2014 11:13 |               |               |       |                |
| Client ID:                                         |                             | Run ID: ManTech01_240188 | SeqNo: 2988207 |                 | PrepDate:                        |               |               | DF: 1 |                |
| Analyte                                            | Result                      | PQL                      | SPK Val        | SPK Ref Value   | %REC                             | Control Limit | RPD Ref Value | %RPD  | RPD Limit Qual |
|                                                    |                             |                          |                |                 |                                  |               |               |       |                |
| Alkalinity, Bicarbonate (As CaCO3)                 | ND                          | 5.00                     |                |                 |                                  |               |               |       |                |
| Alkalinity, Carbonate (As CaCO3)                   | ND                          | 5.00                     |                |                 |                                  |               |               |       |                |
| Alkalinity, Hydroxide (As CaCO3)                   | ND                          | 5.00                     |                |                 |                                  |               |               |       |                |
| Alkalinity, Total (As CaCO3)                       | ND                          | 5.00                     |                |                 |                                  |               |               |       |                |
|                                                    |                             |                          |                |                 |                                  |               |               |       |                |
| LCS                                                | Sample ID: LCS-ALK-140902   | Units: mg/L              |                |                 | Analysis Date: 02-Sep-2014 11:18 |               |               |       |                |
| Client ID:                                         |                             | Run ID: ManTech01_240188 | SeqNo: 2988208 |                 | PrepDate:                        |               |               | DF: 1 |                |
| Analyte                                            | Result                      | PQL                      | SPK Val        | SPK Ref Value   | %REC                             | Control Limit | RPD Ref Value | %RPD  | RPD Limit Qual |
|                                                    |                             |                          |                |                 |                                  |               |               |       |                |
| Alkalinity, Total (As CaCO3)                       | 993.3                       | 5.00                     | 1000           | 0               | 99.3                             | 80 - 120      |               |       |                |
|                                                    |                             |                          |                |                 |                                  |               |               |       |                |
| LCSD                                               | Sample ID: ALK-LCSD         | Units: mg/L              |                |                 | Analysis Date: 02-Sep-2014 13:59 |               |               |       |                |
| Client ID:                                         |                             | Run ID: ManTech01_240188 | SeqNo: 2988240 |                 | PrepDate:                        |               |               | DF: 1 |                |
| Analyte                                            | Result                      | PQL                      | SPK Val        | SPK Ref Value   | %REC                             | Control Limit | RPD Ref Value | %RPD  | RPD Limit Qual |
|                                                    |                             |                          |                |                 |                                  |               |               |       |                |
| Alkalinity, Total (As CaCO3)                       | 983.3                       | 5.00                     | 1000           | 0               | 98.3                             | 80 - 120      | 993.3         | 1.01  | 20             |
|                                                    |                             |                          |                |                 |                                  |               |               |       |                |
| DUP                                                | Sample ID: HS14080845-01DUP | Units: mg/L              |                |                 | Analysis Date: 02-Sep-2014 12:13 |               |               |       |                |
| Client ID: MW-29                                   |                             | Run ID: ManTech01_240188 | SeqNo: 2988220 |                 | PrepDate:                        |               |               | DF: 1 |                |
| Analyte                                            | Result                      | PQL                      | SPK Val        | SPK Ref Value   | %REC                             | Control Limit | RPD Ref Value | %RPD  | RPD Limit Qual |
|                                                    |                             |                          |                |                 |                                  |               |               |       |                |
| Alkalinity, Bicarbonate (As CaCO3)                 | 247.3                       | 5.00                     |                |                 |                                  |               | 249.6         | 0.91  |                |
| Alkalinity, Carbonate (As CaCO3)                   | ND                          | 5.00                     |                |                 |                                  |               | 0             | 0     |                |
| Alkalinity, Hydroxide (As CaCO3)                   | ND                          | 5.00                     |                |                 |                                  |               | 0             | 0     |                |
| Alkalinity, Total (As CaCO3)                       | 247.3                       | 5.00                     |                |                 |                                  |               | 249.6         | 0.91  | 20             |
|                                                    |                             |                          |                |                 |                                  |               |               |       |                |
| The following samples were analyzed in this batch: |                             | HS14080845-01            | HS14080845-02  | HS14080845-03   | HS14080845-04                    |               |               |       |                |
|                                                    |                             | HS14080845-05            | HS14080845-06  | HS14080845-07   | HS14080845-08                    |               |               |       |                |
|                                                    |                             | HS14080845-09            | HS14080845-10  | HS14080845-11   | HS14080845-12                    |               |               |       |                |
|                                                    |                             | HS14080845-13            | HS14080845-14  |                 |                                  |               |               |       |                |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240189 |                          | Instrument: ManTech01 |         | Method: SM4500H+ B               |                                                 |
|-------------------|--------------------------|-----------------------|---------|----------------------------------|-------------------------------------------------|
| <b>LCS</b>        | Sample ID: LCS-PH-140902 | Units: pH Units       |         | Analysis Date: 02-Sep-2014 11:21 |                                                 |
| Client ID:        | Run ID: ManTech01_240189 | SeqNo: 2988250        |         | PrepDate:                        | DF: 1                                           |
| Analyte           | Result                   | PQL                   | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |

pH 6.04 0.100 6 0 101 98 - 102

|                  |                             |                 |         |                                  |                                                 |
|------------------|-----------------------------|-----------------|---------|----------------------------------|-------------------------------------------------|
| <b>DUP</b>       | Sample ID: HS14080845-01DUP | Units: pH Units |         | Analysis Date: 02-Sep-2014 12:13 |                                                 |
| Client ID: MW-29 | Run ID: ManTech01_240189    | SeqNo: 2988261  |         | PrepDate:                        | DF: 1                                           |
| Analyte          | Result                      | PQL             | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |

pH 7.72 0.100 7.71 0.13 10

|                                                    |               |               |               |               |
|----------------------------------------------------|---------------|---------------|---------------|---------------|
| The following samples were analyzed in this batch: | HS14080845-01 | HS14080845-02 | HS14080845-03 | HS14080845-04 |
|                                                    | HS14080845-05 | HS14080845-06 | HS14080845-07 | HS14080845-08 |
|                                                    | HS14080845-09 | HS14080845-10 | HS14080845-11 | HS14080845-12 |
|                                                    | HS14080845-13 | HS14080845-14 |               |               |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240329                                         |                                    | Instrument: ManTech01  |         | Method: M2510 B                         |                                                 |
|-----------------------------------------------------------|------------------------------------|------------------------|---------|-----------------------------------------|-------------------------------------------------|
| <b>MBLK</b>                                               | Sample ID: <b>WBLKW1-140903</b>    | Units: <b>umhos/cm</b> |         | Analysis Date: <b>03-Sep-2014 10:53</b> |                                                 |
| Client ID:                                                | Run ID: <b>ManTech01_240329</b>    | SeqNo: <b>2991103</b>  |         | PrepDate:                               | DF: <b>1</b>                                    |
| Analyte                                                   | Result                             | PQL                    | SPK Val | SPK Ref Value %REC                      | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Specific Conductivity                                     | ND                                 | 5.00                   |         |                                         |                                                 |
| <b>LCS</b>                                                | Sample ID: <b>LCS-COND-140903</b>  | Units: <b>umhos/cm</b> |         | Analysis Date: <b>03-Sep-2014 11:03</b> |                                                 |
| Client ID:                                                | Run ID: <b>ManTech01_240329</b>    | SeqNo: <b>2991106</b>  |         | PrepDate:                               | DF: <b>1</b>                                    |
| Analyte                                                   | Result                             | PQL                    | SPK Val | SPK Ref Value %REC                      | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Specific Conductivity                                     | 1330                               | 5.00                   | 1413    | 0 94.1                                  | 80 - 120                                        |
| <b>DUP</b>                                                | Sample ID: <b>HS14080845-21DUP</b> | Units: <b>umhos/cm</b> |         | Analysis Date: <b>03-Sep-2014 12:02</b> |                                                 |
| Client ID: <b>WW-EAST</b>                                 | Run ID: <b>ManTech01_240329</b>    | SeqNo: <b>2991116</b>  |         | PrepDate:                               | DF: <b>1</b>                                    |
| Analyte                                                   | Result                             | PQL                    | SPK Val | SPK Ref Value %REC                      | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Specific Conductivity                                     | 885.1                              | 5.00                   |         |                                         | 879.2 0.672 20                                  |
| <b>The following samples were analyzed in this batch:</b> |                                    |                        |         |                                         |                                                 |
| HS14080845-15                                             |                                    | HS14080845-16          |         | HS14080845-17                           |                                                 |
| HS14080845-19                                             |                                    | HS14080845-20          |         | HS14080845-21                           |                                                 |
| HS14080845-23                                             |                                    | HS14080845-24          |         | HS14080845-25                           |                                                 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240330                  |                          | Instrument: ManTech01 |         | Method: SM2320B                  |      |               |               |      |           |      |
|------------------------------------|--------------------------|-----------------------|---------|----------------------------------|------|---------------|---------------|------|-----------|------|
| MBLK                               | Sample ID: WBLKW1-140903 | Units: mg/L           |         | Analysis Date: 03-Sep-2014 10:53 |      |               |               |      |           |      |
| Client ID:                         | Run ID: ManTech01_240330 | SeqNo: 2991139        |         | PrepDate:                        |      | DF: 1         |               |      |           |      |
| Analyte                            | Result                   | PQL                   | SPK Val | SPK Ref Value                    | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|                                    |                          |                       |         |                                  |      |               |               |      |           |      |
| Alkalinity, Bicarbonate (As CaCO3) | ND                       | 5.00                  |         |                                  |      |               |               |      |           |      |
| Alkalinity, Carbonate (As CaCO3)   | ND                       | 5.00                  |         |                                  |      |               |               |      |           |      |
| Alkalinity, Hydroxide (As CaCO3)   | ND                       | 5.00                  |         |                                  |      |               |               |      |           |      |
| Alkalinity, Total (As CaCO3)       | ND                       | 5.00                  |         |                                  |      |               |               |      |           |      |

|                              |                           |                |         |                                  |      |               |               |      |           |      |
|------------------------------|---------------------------|----------------|---------|----------------------------------|------|---------------|---------------|------|-----------|------|
| LCS                          | Sample ID: LCS-ALK-140903 | Units: mg/L    |         | Analysis Date: 03-Sep-2014 10:59 |      |               |               |      |           |      |
| Client ID:                   | Run ID: ManTech01_240330  | SeqNo: 2991140 |         | PrepDate:                        |      | DF: 1         |               |      |           |      |
| Analyte                      | Result                    | PQL            | SPK Val | SPK Ref Value                    | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|                              |                           |                |         |                                  |      |               |               |      |           |      |
| Alkalinity, Total (As CaCO3) | 963.9                     | 5.00           | 1000    | 0                                | 96.4 | 80 - 120      |               |      |           |      |

|                              |                          |                |         |                                  |      |               |               |      |           |      |
|------------------------------|--------------------------|----------------|---------|----------------------------------|------|---------------|---------------|------|-----------|------|
| LCSD                         | Sample ID: ALK-LCSD      | Units: mg/L    |         | Analysis Date: 03-Sep-2014 13:48 |      |               |               |      |           |      |
| Client ID:                   | Run ID: ManTech01_240330 | SeqNo: 2991172 |         | PrepDate:                        |      | DF: 1         |               |      |           |      |
| Analyte                      | Result                   | PQL            | SPK Val | SPK Ref Value                    | %REC | Control Limit | RPD Ref Value | %RPD | RPD Limit | Qual |
|                              |                          |                |         |                                  |      |               |               |      |           |      |
| Alkalinity, Total (As CaCO3) | 980.5                    | 5.00           | 1000    | 0                                | 98.0 | 80 - 120      | 963.9         | 1.71 | 20        |      |

|                                    |                             |                |         |                                  |      |               |               |         |           |      |
|------------------------------------|-----------------------------|----------------|---------|----------------------------------|------|---------------|---------------|---------|-----------|------|
| DUP                                | Sample ID: HS14080845-21DUP | Units: mg/L    |         | Analysis Date: 03-Sep-2014 12:02 |      |               |               |         |           |      |
| Client ID: WW-EAST                 | Run ID: ManTech01_240330    | SeqNo: 2991152 |         | PrepDate:                        |      | DF: 1         |               |         |           |      |
| Analyte                            | Result                      | PQL            | SPK Val | SPK Ref Value                    | %REC | Control Limit | RPD Ref Value | %RPD    | RPD Limit | Qual |
|                                    |                             |                |         |                                  |      |               |               |         |           |      |
| Alkalinity, Bicarbonate (As CaCO3) | 177.9                       | 5.00           |         |                                  |      |               | 177.9         | 0.00562 |           |      |
| Alkalinity, Carbonate (As CaCO3)   | ND                          | 5.00           |         |                                  |      |               | 0             | 0       |           |      |
| Alkalinity, Hydroxide (As CaCO3)   | ND                          | 5.00           |         |                                  |      |               | 0             | 0       |           |      |
| Alkalinity, Total (As CaCO3)       | 177.9                       | 5.00           |         |                                  |      |               | 177.9         | 0.00562 | 20        |      |

|                                                   |  |  |  |  |               |  |               |  |               |  |               |  |
|---------------------------------------------------|--|--|--|--|---------------|--|---------------|--|---------------|--|---------------|--|
| The following samples were anayzed in this batch: |  |  |  |  | HS14080845-15 |  | HS14080845-16 |  | HS14080845-17 |  | HS14080845-18 |  |
|                                                   |  |  |  |  | HS14080845-19 |  | HS14080845-20 |  | HS14080845-21 |  | HS14080845-22 |  |
|                                                   |  |  |  |  | HS14080845-23 |  | HS14080845-24 |  | HS14080845-25 |  |               |  |

Note: See Qualifiers Page for a list of qualifiers and their explanation.



Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240333 |                          | Instrument: ManTech01 |         | Method: SM4500H+ B               |                                                 |
|-------------------|--------------------------|-----------------------|---------|----------------------------------|-------------------------------------------------|
| <b>LCS</b>        | Sample ID: LCS-PH-140903 | Units: pH Units       |         | Analysis Date: 03-Sep-2014 11:01 |                                                 |
| Client ID:        | Run ID: ManTech01_240333 | SeqNo: 2991200        |         | PrepDate:                        | DF: 1                                           |
| Analyte           | Result                   | PQL                   | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |

pH 5.99 0.100 6 0 99.8 98 - 102

|                    |                             |                 |         |                                  |                                                 |
|--------------------|-----------------------------|-----------------|---------|----------------------------------|-------------------------------------------------|
| <b>DUP</b>         | Sample ID: HS14080845-21DUP | Units: pH Units |         | Analysis Date: 03-Sep-2014 12:02 |                                                 |
| Client ID: WW-EAST | Run ID: ManTech01_240333    | SeqNo: 2991211  |         | PrepDate:                        | DF: 1                                           |
| Analyte            | Result                      | PQL             | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |

pH 7.89 0.100 7.88 0.127 10

The following samples were analyzed in this batch:

|               |               |               |               |
|---------------|---------------|---------------|---------------|
| HS14080845-15 | HS14080845-16 | HS14080845-17 | HS14080845-18 |
| HS14080845-19 | HS14080845-20 | HS14080845-21 | HS14080845-22 |
| HS14080845-23 | HS14080845-24 | HS14080845-25 |               |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240459 |                        | Instrument: ICS3000 |         | Method: E300                     |                                                 |
|-------------------|------------------------|---------------------|---------|----------------------------------|-------------------------------------------------|
| <b>MBLK</b>       | Sample ID: WBLKW2      | Units: mg/L         |         | Analysis Date: 06-Sep-2014 13:29 |                                                 |
| Client ID:        | Run ID: ICS3000_240459 | SeqNo: 2993978      |         | PrepDate:                        | DF: 1                                           |
| Analyte           | Result                 | PQL                 | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |

|          |    |       |
|----------|----|-------|
| Chloride | ND | 0.500 |
| Fluoride | ND | 0.100 |
| Sulfate  | ND | 0.500 |

|            |                        |                |         |                                  |                                                 |
|------------|------------------------|----------------|---------|----------------------------------|-------------------------------------------------|
| <b>LCS</b> | Sample ID: WLCSW2      | Units: mg/L    |         | Analysis Date: 06-Sep-2014 13:51 |                                                 |
| Client ID: | Run ID: ICS3000_240459 | SeqNo: 2993979 |         | PrepDate:                        | DF: 1                                           |
| Analyte    | Result                 | PQL            | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |

|          |       |       |    |   |       |          |
|----------|-------|-------|----|---|-------|----------|
| Chloride | 19.63 | 0.500 | 20 | 0 | 98.2  | 90 - 110 |
| Fluoride | 4.115 | 0.100 | 4  | 0 | 103   | 90 - 110 |
| Sulfate  | 19.99 | 0.500 | 20 | 0 | 100.0 | 90 - 110 |

|                    |                            |                |         |                                  |                                                 |
|--------------------|----------------------------|----------------|---------|----------------------------------|-------------------------------------------------|
| <b>MS</b>          | Sample ID: HS14080845-21MS | Units: mg/L    |         | Analysis Date: 06-Sep-2014 22:53 |                                                 |
| Client ID: WW-EAST | Run ID: ICS3000_240459     | SeqNo: 2994004 |         | PrepDate:                        | DF: 2                                           |
| Analyte            | Result                     | PQL            | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |

|          |       |       |    |       |     |          |   |
|----------|-------|-------|----|-------|-----|----------|---|
| Chloride | 147.1 | 1.00  | 20 | 123.7 | 117 | 80 - 120 | O |
| Fluoride | 5.64  | 0.200 | 4  | 0.914 | 118 | 80 - 120 |   |
| Sulfate  | 102.5 | 1.00  | 20 | 78.46 | 120 | 80 - 120 | S |

|                    |                             |                |         |                                  |                                                 |
|--------------------|-----------------------------|----------------|---------|----------------------------------|-------------------------------------------------|
| <b>MSD</b>         | Sample ID: HS14080845-21MSD | Units: mg/L    |         | Analysis Date: 06-Sep-2014 23:15 |                                                 |
| Client ID: WW-EAST | Run ID: ICS3000_240459      | SeqNo: 2994005 |         | PrepDate:                        | DF: 2                                           |
| Analyte            | Result                      | PQL            | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |

|          |       |       |    |       |     |          |       |      |    |   |
|----------|-------|-------|----|-------|-----|----------|-------|------|----|---|
| Chloride | 144.4 | 1.00  | 20 | 123.7 | 104 | 80 - 120 | 147.1 | 1.88 | 20 | O |
| Fluoride | 4.923 | 0.200 | 4  | 0.914 | 100 | 80 - 120 | 5.64  | 13.6 | 20 |   |
| Sulfate  | 99.31 | 1.00  | 20 | 78.46 | 104 | 80 - 120 | 102.5 | 3.14 | 20 |   |

The following samples were analyzed in this batch: HS14080845-21 HS14080845-22 HS14080845-23 HS14080845-24  
 HS14080845-25

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240464 |                        | Instrument: ICS3000 |         | Method: E300                     |                                                 |
|-------------------|------------------------|---------------------|---------|----------------------------------|-------------------------------------------------|
| <b>MBLK</b>       | Sample ID: WBLKW5      | Units: mg/L         |         | Analysis Date: 07-Sep-2014 01:47 |                                                 |
| Client ID:        | Run ID: ICS3000_240464 | SeqNo: 2994050      |         | PrepDate:                        | DF: 1                                           |
| Analyte           | Result                 | PQL                 | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |

|          |    |       |
|----------|----|-------|
| Chloride | ND | 0.500 |
| Fluoride | ND | 0.100 |
| Sulfate  | ND | 0.500 |

|            |                        |                |         |                                  |                                                 |
|------------|------------------------|----------------|---------|----------------------------------|-------------------------------------------------|
| <b>LCS</b> | Sample ID: WLCSW5      | Units: mg/L    |         | Analysis Date: 07-Sep-2014 02:09 |                                                 |
| Client ID: | Run ID: ICS3000_240464 | SeqNo: 2994051 |         | PrepDate:                        | DF: 1                                           |
| Analyte    | Result                 | PQL            | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |

|          |       |       |    |   |      |          |
|----------|-------|-------|----|---|------|----------|
| Chloride | 19.64 | 0.500 | 20 | 0 | 98.2 | 90 - 110 |
| Fluoride | 4.104 | 0.100 | 4  | 0 | 103  | 90 - 110 |
| Sulfate  | 20.03 | 0.500 | 20 | 0 | 100  | 90 - 110 |

|                          |                            |                |         |                                  |                                                 |
|--------------------------|----------------------------|----------------|---------|----------------------------------|-------------------------------------------------|
| <b>MS</b>                | Sample ID: HS14080845-09MS | Units: mg/L    |         | Analysis Date: 07-Sep-2014 07:56 |                                                 |
| Client ID: EB-08-21-14-A | Run ID: ICS3000_240464     | SeqNo: 2994067 |         | PrepDate:                        | DF: 1                                           |
| Analyte                  | Result                     | PQL            | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |

|          |       |       |    |      |      |          |
|----------|-------|-------|----|------|------|----------|
| Chloride | 9.48  | 0.500 | 10 | 0.02 | 94.6 | 80 - 120 |
| Fluoride | 1.986 | 0.100 | 2  | 0    | 99.3 | 80 - 120 |
| Sulfate  | 9.447 | 0.500 | 10 | 0    | 94.5 | 80 - 120 |

|                          |                             |                |         |                                  |                                                 |
|--------------------------|-----------------------------|----------------|---------|----------------------------------|-------------------------------------------------|
| <b>MSD</b>               | Sample ID: HS14080845-09MSD | Units: mg/L    |         | Analysis Date: 07-Sep-2014 08:17 |                                                 |
| Client ID: EB-08-21-14-A | Run ID: ICS3000_240464      | SeqNo: 2994068 |         | PrepDate:                        | DF: 1                                           |
| Analyte                  | Result                      | PQL            | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |

|          |       |       |    |      |      |          |       |      |    |
|----------|-------|-------|----|------|------|----------|-------|------|----|
| Chloride | 9.744 | 0.500 | 10 | 0.02 | 97.2 | 80 - 120 | 9.48  | 2.75 | 20 |
| Fluoride | 2.041 | 0.100 | 2  | 0    | 102  | 80 - 120 | 1.986 | 2.73 | 20 |
| Sulfate  | 9.721 | 0.500 | 10 | 0    | 97.2 | 80 - 120 | 9.447 | 2.86 | 20 |

|                                                           |  |  |  |               |               |               |               |
|-----------------------------------------------------------|--|--|--|---------------|---------------|---------------|---------------|
| <b>The following samples were analyzed in this batch:</b> |  |  |  | HS14080845-01 | HS14080845-02 | HS14080845-03 | HS14080845-04 |
|                                                           |  |  |  | HS14080845-05 | HS14080845-06 | HS14080845-07 | HS14080845-08 |
|                                                           |  |  |  | HS14080845-09 | HS14080845-10 | HS14080845-11 | HS14080845-12 |
|                                                           |  |  |  | HS14080845-13 | HS14080845-14 | HS14080845-15 | HS14080845-16 |
|                                                           |  |  |  | HS14080845-17 | HS14080845-18 | HS14080845-19 | HS14080845-20 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240466 |                        | Instrument: ICS3000 |         | Method: E300                     |                                                 |
|-------------------|------------------------|---------------------|---------|----------------------------------|-------------------------------------------------|
| <b>MBLK</b>       | Sample ID: WBLKW6      | Units: mg/L         |         | Analysis Date: 07-Sep-2014 17:20 |                                                 |
| Client ID:        | Run ID: ICS3000_240466 | SeqNo: 2994106      |         | PrepDate:                        | DF: 1                                           |
| Analyte           | Result                 | PQL                 | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |

Nitrate/Nitrite (as N) ND 0.200

|            |                        |                |         |                                  |                                                 |
|------------|------------------------|----------------|---------|----------------------------------|-------------------------------------------------|
| <b>LCS</b> | Sample ID: WLCSW6      | Units: mg/L    |         | Analysis Date: 07-Sep-2014 17:42 |                                                 |
| Client ID: | Run ID: ICS3000_240466 | SeqNo: 2994107 |         | PrepDate:                        | DF: 1                                           |
| Analyte    | Result                 | PQL            | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |

Nitrate/Nitrite (as N) 8 0.200 8 0 100 90 - 110

|                    |                            |                |         |                                  |                                                 |
|--------------------|----------------------------|----------------|---------|----------------------------------|-------------------------------------------------|
| <b>MS</b>          | Sample ID: HS14080845-21MS | Units: mg/L    |         | Analysis Date: 08-Sep-2014 00:56 |                                                 |
| Client ID: WW-EAST | Run ID: ICS3000_240466     | SeqNo: 2994127 |         | PrepDate:                        | DF: 5                                           |
| Analyte            | Result                     | PQL            | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |

Nitrate/Nitrite (as N) 16.07 1.00 20 2.707 66.8 80 - 120 S

|                    |                             |                |         |                                  |                                                 |
|--------------------|-----------------------------|----------------|---------|----------------------------------|-------------------------------------------------|
| <b>MSD</b>         | Sample ID: HS14080845-21MSD | Units: mg/L    |         | Analysis Date: 08-Sep-2014 02:01 |                                                 |
| Client ID: WW-EAST | Run ID: ICS3000_240466      | SeqNo: 2994130 |         | PrepDate:                        | DF: 5                                           |
| Analyte            | Result                      | PQL            | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |

Nitrate/Nitrite (as N) 15.58 1.00 20 2.707 64.4 80 - 120 16.07 3.13 20 S

|                                                           |               |               |               |
|-----------------------------------------------------------|---------------|---------------|---------------|
| <b>The following samples were analyzed in this batch:</b> |               |               |               |
| HS14080845-01                                             | HS14080845-02 | HS14080845-03 | HS14080845-04 |
| HS14080845-06                                             | HS14080845-07 | HS14080845-08 | HS14080845-09 |
| HS14080845-10                                             | HS14080845-11 | HS14080845-12 | HS14080845-13 |
| HS14080845-17                                             | HS14080845-18 | HS14080845-19 | HS14080845-20 |
| HS14080845-21                                             | HS14080845-22 | HS14080845-23 | HS14080845-24 |
| HS14080845-25                                             |               |               |               |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240509 |                        | Instrument: ICS3000 |         | Method: E300                     |                                                 |
|-------------------|------------------------|---------------------|---------|----------------------------------|-------------------------------------------------|
| <b>MBLK</b>       | Sample ID: WBLKW1      | Units: mg/L         |         | Analysis Date: 08-Sep-2014 10:22 |                                                 |
| Client ID:        | Run ID: ICS3000_240509 | SeqNo: 2995243      |         | PrepDate:                        | DF: 1                                           |
| Analyte           | Result                 | PQL                 | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Chloride          | ND                     | 0.500               |         |                                  |                                                 |
| Sulfate           | ND                     | 0.500               |         |                                  |                                                 |

|            |                        |                |         |                                  |                                                 |
|------------|------------------------|----------------|---------|----------------------------------|-------------------------------------------------|
| <b>LCS</b> | Sample ID: WLCSW1      | Units: mg/L    |         | Analysis Date: 08-Sep-2014 10:44 |                                                 |
| Client ID: | Run ID: ICS3000_240509 | SeqNo: 2995244 |         | PrepDate:                        | DF: 1                                           |
| Analyte    | Result                 | PQL            | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Chloride   | 19.73                  | 0.500          | 20      | 0 98.6                           | 90 - 110                                        |
| Sulfate    | 20.12                  | 0.500          | 20      | 0 101                            | 90 - 110                                        |

|                 |                            |                |         |                                  |                                                 |
|-----------------|----------------------------|----------------|---------|----------------------------------|-------------------------------------------------|
| <b>MS</b>       | Sample ID: HS14080845-05MS | Units: mg/L    |         | Analysis Date: 08-Sep-2014 15:05 |                                                 |
| Client ID: MW-3 | Run ID: ICS3000_240509     | SeqNo: 2995249 |         | PrepDate:                        | DF: 5                                           |
| Analyte         | Result                     | PQL            | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Chloride        | 77.44                      | 2.50           | 50      | 28.59 97.7                       | 80 - 120                                        |
| Sulfate         | 4518                       | 2.50           | 50      | 7271 - 5510                      | 80 - 120 SEO                                    |

|                 |                             |                |         |                                  |                                                 |
|-----------------|-----------------------------|----------------|---------|----------------------------------|-------------------------------------------------|
| <b>MSD</b>      | Sample ID: HS14080845-05MSD | Units: mg/L    |         | Analysis Date: 08-Sep-2014 15:27 |                                                 |
| Client ID: MW-3 | Run ID: ICS3000_240509      | SeqNo: 2995250 |         | PrepDate:                        | DF: 5                                           |
| Analyte         | Result                      | PQL            | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Chloride        | 81.22                       | 2.50           | 50      | 28.59 105                        | 80 - 120 77.44 4.76 20                          |
| Sulfate         | 5727                        | 2.50           | 50      | 7271 - 3090                      | 80 - 120 4518 23.6 20 SREO                      |

The following samples were analyzed in this batch: HS14080845-05 HS14080845-20 HS14080845-24

Note: See Qualifiers Page for a list of qualifiers and their explanation.

Client: Navajo Refining Company  
 WorkOrder: HS14080845  
 Project: Lovington Lea Refining - SA

**QC BATCH REPORT**

| Batch ID: R240510                                  |                             | Instrument: ICS3000 |         | Method: E300                     |                                                 |
|----------------------------------------------------|-----------------------------|---------------------|---------|----------------------------------|-------------------------------------------------|
| <b>MBLK</b>                                        | Sample ID: WBLKW1           | Units: mg/L         |         | Analysis Date: 08-Sep-2014 10:22 |                                                 |
| Client ID:                                         | Run ID: ICS3000_240510      | SeqNo: 2995255      |         | PrepDate:                        | DF: 1                                           |
| Analyte                                            | Result                      | PQL                 | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Nitrate/Nitrite (as N)                             | ND                          | 0.200               |         |                                  |                                                 |
| <b>LCS</b>                                         | Sample ID: WLCSW1           | Units: mg/L         |         | Analysis Date: 08-Sep-2014 10:44 |                                                 |
| Client ID:                                         | Run ID: ICS3000_240510      | SeqNo: 2995256      |         | PrepDate:                        | DF: 1                                           |
| Analyte                                            | Result                      | PQL                 | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Nitrate/Nitrite (as N)                             | 8.065                       | 0.200               | 8       | 0 101                            | 90 - 110                                        |
| <b>MS</b>                                          | Sample ID: HS14080845-05MS  | Units: mg/L         |         | Analysis Date: 08-Sep-2014 15:05 |                                                 |
| Client ID: MW-3                                    | Run ID: ICS3000_240510      | SeqNo: 2995258      |         | PrepDate:                        | DF: 5                                           |
| Analyte                                            | Result                      | PQL                 | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Nitrate/Nitrite (as N)                             | 21.02                       | 1.00                | 4       | 1.529 487                        | 80 - 120 S                                      |
| <b>MSD</b>                                         | Sample ID: HS14080845-05MSD | Units: mg/L         |         | Analysis Date: 08-Sep-2014 15:27 |                                                 |
| Client ID: MW-3                                    | Run ID: ICS3000_240510      | SeqNo: 2995259      |         | PrepDate:                        | DF: 5                                           |
| Analyte                                            | Result                      | PQL                 | SPK Val | SPK Ref Value %REC               | Control Limit RPD Ref Value %RPD RPD Limit Qual |
| Nitrate/Nitrite (as N)                             | 21.89                       | 1.00                | 4       | 1.529 509                        | 80 - 120 21.02 4.07 20 S                        |
| The following samples were analyzed in this batch: |                             |                     |         |                                  |                                                 |
| HS14080845-05                                      |                             | HS14080845-14       |         | HS14080845-15                    |                                                 |
|                                                    |                             |                     |         | HS14080845-16                    |                                                 |

Note: See Qualifiers Page for a list of qualifiers and their explanation.

**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining - SA  
**WorkOrder:** HS14080845

**QUALIFIERS,  
ACRONYMS, UNITS**

| <b>Qualifier</b> | <b>Description</b>                                                        |
|------------------|---------------------------------------------------------------------------|
| *                | Value exceeds Regulatory Limit                                            |
| a                | Not accredited                                                            |
| B                | Analyte detected in the associated Method Blank above the Reporting Limit |
| E                | Value above quantitation range                                            |
| H                | Analyzed outside of Holding Time                                          |
| J                | Analyte detected below quantitation limit                                 |
| M                | Manually integrated, see raw data for justification                       |
| n                | Not offered for accreditation                                             |
| ND               | Not Detected at the Reporting Limit                                       |
| O                | Sample amount is > 4 times amount spiked                                  |
| P                | Dual Column results percent difference > 40%                              |
| R                | RPD above laboratory control limit                                        |
| S                | Spike Recovery outside laboratory control limits                          |
| U                | Analyzed but not detected above the MDL/SDL                               |

| <b>Acronym</b> | <b>Description</b>                  |
|----------------|-------------------------------------|
| DCS            | Detectability Check Study           |
| DUP            | Method Duplicate                    |
| LCS            | Laboratory Control Sample           |
| LCSD           | Laboratory Control Sample Duplicate |
| MBLK           | Method Blank                        |
| MDL            | Method Detection Limit              |
| MQL            | Method Quantitation Limit           |
| MS             | Matrix Spike                        |
| MSD            | Matrix Spike Duplicate              |
| PDS            | Post Digestion Spike                |
| PQL            | Practical Quantitation Limit        |
| SD             | Serial Dilution                     |
| SDL            | Sample Detection Limit              |
| TRRP           | Texas Risk Reduction Program        |

| <b>Unit Reported</b> | <b>Description</b>   |
|----------------------|----------------------|
| µg/L                 | Micrograms per Liter |
| µmhos/cm             |                      |
| Date                 |                      |
| mg/L                 | Milligrams per Liter |
| pH units             |                      |

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**CERTIFICATIONS,ACCREDITATIONS & LICENSES**

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| Agency          | Number                 | Expire Date |
|-----------------|------------------------|-------------|
| Arkansas        | AR - 2014              | 27-Mar-2015 |
| California      | 2919                   | 31-Jul-2015 |
| Dept of Defense | L2231 Rev 3-20-2014    | 22-Dec-2015 |
| Illinois        | 003403                 | 09-May-2015 |
| Kansas          | E-10352 8/15/2013-2014 | 01-Oct-2014 |
| Kentucky        | KY 2014-2015           | 30-Apr-2015 |
| Louisiana       | 03087 2014/2015        | 30-Jun-2015 |
| North Carolina  | 624 - 2014             | 31-Dec-2014 |
| North Dakota    | R-193 2025             | 30-Apr-2015 |
| Oklahoma        | 2014-128               | 31-Aug-2015 |
| Texas           | TX104704231-14-13      | 30-Apr-2015 |



**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining - SA  
**Work Order:** HS14080845

**SAMPLE TRACKING**

| Lab Samp ID   | Client Sample ID | Action | Date                 | Person | New Location |
|---------------|------------------|--------|----------------------|--------|--------------|
| HS14080845-01 | MW-29            | Login  | 8/23/2014 1:45:08 PM | MES    | 22A          |
| HS14080845-01 | MW-29            | Login  | 8/23/2014 1:45:08 PM | MES    | 22A          |
| HS14080845-01 | MW-29            | Login  | 8/23/2014 1:45:08 PM | MES    | 22A          |
| HS14080845-01 | MW-29            | Login  | 8/23/2014 1:45:08 PM | MES    | 22A          |
| HS14080845-01 | MW-29            | Login  | 8/23/2014 1:45:08 PM | MES    | 22A          |
| HS14080845-01 | MW-29            | Login  | 8/23/2014 1:45:08 PM | MES    | VW-3         |
| HS14080845-02 | MW-4             | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-02 | MW-4             | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-02 | MW-4             | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-02 | MW-4             | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-02 | MW-4             | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-02 | MW-4             | Login  | 8/23/2014 2:00:18 PM | MES    | VW-3         |
| HS14080845-03 | MW-23            | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-03 | MW-23            | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-03 | MW-23            | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-03 | MW-23            | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-03 | MW-23            | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-03 | MW-23            | Login  | 8/23/2014 2:00:18 PM | MES    | VW-3         |
| HS14080845-04 | MW-24            | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-04 | MW-24            | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-04 | MW-24            | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-04 | MW-24            | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-04 | MW-24            | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-04 | MW-24            | Login  | 8/23/2014 2:00:18 PM | MES    | VW-3         |
| HS14080845-05 | MW-3             | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-05 | MW-3             | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-05 | MW-3             | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-05 | MW-3             | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-05 | MW-3             | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-05 | MW-3             | Login  | 8/23/2014 2:00:18 PM | MES    | VW-3         |
| HS14080845-06 | MW-26            | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-06 | MW-26            | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-06 | MW-26            | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-06 | MW-26            | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-06 | MW-26            | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-06 | MW-26            | Login  | 8/23/2014 2:00:18 PM | MES    | VW-3         |
| HS14080845-07 | MW-9             | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-07 | MW-9             | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-07 | MW-9             | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |
| HS14080845-07 | MW-9             | Login  | 8/23/2014 2:00:18 PM | MES    | 22A          |

**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining - SA  
**Work Order:** HS14080845

**SAMPLE TRACKING**

|               |               |       |                      |     |      |
|---------------|---------------|-------|----------------------|-----|------|
| HS14080845-07 | MW-9          | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-07 | MW-9          | Login | 8/23/2014 2:00:18 PM | MES | VW-3 |
| HS14080845-08 | MW-10         | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-08 | MW-10         | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-08 | MW-10         | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-08 | MW-10         | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-08 | MW-10         | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-08 | MW-10         | Login | 8/23/2014 2:00:18 PM | MES | VW-3 |
| HS14080845-09 | EB-08-21-14-A | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-09 | EB-08-21-14-A | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-09 | EB-08-21-14-A | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-09 | EB-08-21-14-A | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-09 | EB-08-21-14-A | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-09 | EB-08-21-14-A | Login | 8/23/2014 2:00:18 PM | MES | VW-3 |
| HS14080845-10 | MW-7          | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-10 | MW-7          | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-10 | MW-7          | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-10 | MW-7          | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-10 | MW-7          | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-10 | MW-7          | Login | 8/23/2014 2:00:18 PM | MES | VW-3 |
| HS14080845-11 | RW-1          | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-11 | RW-1          | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-11 | RW-1          | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-11 | RW-1          | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-11 | RW-1          | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-11 | RW-1          | Login | 8/23/2014 2:00:18 PM | MES | VW-3 |
| HS14080845-12 | MW-1          | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-12 | MW-1          | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-12 | MW-1          | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-12 | MW-1          | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-12 | MW-1          | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-12 | MW-1          | Login | 8/23/2014 2:00:18 PM | MES | VW-3 |
| HS14080845-13 | MW-6          | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-13 | MW-6          | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-13 | MW-6          | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-13 | MW-6          | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-13 | MW-6          | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-13 | MW-6          | Login | 8/23/2014 2:00:18 PM | MES | VW-3 |
| HS14080845-14 | MW-15         | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-14 | MW-15         | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-14 | MW-15         | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-14 | MW-15         | Login | 8/23/2014 2:00:18 PM | MES | 22A  |

**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining - SA  
**Work Order:** HS14080845

**SAMPLE TRACKING**

|               |          |       |                      |     |      |
|---------------|----------|-------|----------------------|-----|------|
| HS14080845-14 | MW-15    | Login | 8/23/2014 2:00:18 PM | MES | 22A  |
| HS14080845-14 | MW-15    | Login | 8/23/2014 2:00:18 PM | MES | VW-3 |
| HS14080845-15 | DUP-3    | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-15 | DUP-3    | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-15 | DUP-3    | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-15 | DUP-3    | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-15 | DUP-3    | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-15 | DUP-3    | Login | 8/23/2014 2:21:15 PM | MES | VW-3 |
| HS14080845-16 | MW-2     | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-16 | MW-2     | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-16 | MW-2     | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-16 | MW-2     | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-16 | MW-2     | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-16 | MW-2     | Login | 8/23/2014 2:21:15 PM | MES | VW-3 |
| HS14080845-17 | MW-27    | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-17 | MW-27    | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-17 | MW-27    | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-17 | MW-27    | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-17 | MW-27    | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-17 | MW-27    | Login | 8/23/2014 2:21:15 PM | MES | VW-3 |
| HS14080845-18 | MW-8     | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-18 | MW-8     | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-18 | MW-8     | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-18 | MW-8     | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-18 | MW-8     | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-18 | MW-8     | Login | 8/23/2014 2:21:15 PM | MES | VW-3 |
| HS14080845-19 | WW-SOUTH | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-19 | WW-SOUTH | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-19 | WW-SOUTH | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-19 | WW-SOUTH | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-19 | WW-SOUTH | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-19 | WW-SOUTH | Login | 8/23/2014 2:21:15 PM | MES | VW-3 |
| HS14080845-20 | DUP-4    | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-20 | DUP-4    | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-20 | DUP-4    | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-20 | DUP-4    | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-20 | DUP-4    | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-20 | DUP-4    | Login | 8/23/2014 2:21:15 PM | MES | VW-3 |
| HS14080845-21 | WW-EAST  | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-21 | WW-EAST  | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-21 | WW-EAST  | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-21 | WW-EAST  | Login | 8/23/2014 2:21:15 PM | MES | 22A  |

**Client:** Navajo Refining Company  
**Project:** Lovington Lea Refining - SA  
**Work Order:** HS14080845

**SAMPLE TRACKING**

|               |               |       |                      |     |      |
|---------------|---------------|-------|----------------------|-----|------|
| HS14080845-21 | WW-EAST       | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-21 | WW-EAST       | Login | 8/23/2014 2:21:15 PM | MES | VW-3 |
| HS14080845-22 | WW-NORTH      | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-22 | WW-NORTH      | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-22 | WW-NORTH      | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-22 | WW-NORTH      | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-22 | WW-NORTH      | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-22 | WW-NORTH      | Login | 8/23/2014 2:21:15 PM | MES | VW-3 |
| HS14080845-23 | MW-30         | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-23 | MW-30         | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-23 | MW-30         | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-23 | MW-30         | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-23 | MW-30         | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-23 | MW-30         | Login | 8/23/2014 2:21:15 PM | MES | VW-3 |
| HS14080845-24 | MW-17R        | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-24 | MW-17R        | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-24 | MW-17R        | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-24 | MW-17R        | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-24 | MW-17R        | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-24 | MW-17R        | Login | 8/23/2014 2:21:15 PM | MES | VW-3 |
| HS14080845-25 | EB-8-22-14-A  | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-25 | EB-8-22-14-A  | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-25 | EB-8-22-14-A  | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-25 | EB-8-22-14-A  | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-25 | EB-8-22-14-A  | Login | 8/23/2014 2:21:15 PM | MES | 22A  |
| HS14080845-25 | EB-8-22-14-A  | Login | 8/23/2014 2:21:15 PM | MES | VW-3 |
| HS14080845-26 | TB-08-22-14-A | Login | 8/23/2014 2:33:23 PM | MES | VW-3 |

## Sample Receipt Checklist

Client Name: Navajo Refining  
Work Order: HS14080845

Date/Time Received: **23-Aug-2014 09:15**  
Received by: **MES**

Checklist completed by: Michael E. Schepcoff 23-Aug-2014  
eSignature Date

Reviewed by: Bethany McDaniel 25-Aug-2014  
eSignature Date

Matrices: **Water**Carrier name: **FedEx**

|                                                         |                                         |                             |                                                 |
|---------------------------------------------------------|-----------------------------------------|-----------------------------|-------------------------------------------------|
| Shipping container/cooler in good condition?            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/>            |
| Custody seals intact on shipping container/cooler?      | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> | Not Present <input type="checkbox"/>            |
| Custody seals intact on sample bottles?                 | Yes <input type="checkbox"/>            | No <input type="checkbox"/> | Not Present <input checked="" type="checkbox"/> |
| Chain of custody present?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |                                                 |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |                                                 |
| Chain of custody agrees with sample labels?             | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |                                                 |
| Samples in proper container/bottle?                     | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |                                                 |
| Sample containers intact?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |                                                 |
| Sufficient sample volume for indicated test?            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |                                                 |
| All samples received within holding time?               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |                                                 |
| Container/Temp Blank temperature in compliance?         | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/> |                                                 |

Temperature(s)/Thermometer(s):  
1.7C/1.7C 3.2C/3.2C 2.1C/2.1C 1.2C/1.2C 3  
2.2C/2.2C 2.4C/2.4C 3.6C/3.6C  
Cooler(s)/Kit(s):  
4292 6100 4672 5999 7035 7156 5990 5160  
Date/Time sample(s) sent to storage:  
8/23/2014 16:00

|                                        |                                         |                                        |                                                 |
|----------------------------------------|-----------------------------------------|----------------------------------------|-------------------------------------------------|
| Water - VOA vials have zero headspace? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | No VOA vials submitted <input type="checkbox"/> |
| Water - pH acceptable upon receipt?    | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | N/A <input type="checkbox"/>                    |
| pH adjusted?                           | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> | N/A <input type="checkbox"/>                    |
| pH adjusted by:                        |                                         |                                        |                                                 |

Login Notes: 1 cooler not received from fedex with the shipment, will receive Monday.

Client Contacted: Date Contacted: Person Contacted:

Contacted By: 0 Regarding:

Comments: Corrective Action:

## Sample Receipt Checklist

Client Name: Navajo Refining  
Work Order: HS14080845

Date/Time Received: **23-Aug-2014 09:15**  
Received by: **MES**

Checklist completed by: Paresh M. Giga 25-Aug-2014  
eSignature Date

Reviewed by: Bethany McDaniel 25-Aug-2014  
eSignature Date

Matrices: **Water**Carrier name: **FedEx**

|                                                         |                                         |                                        |                                      |
|---------------------------------------------------------|-----------------------------------------|----------------------------------------|--------------------------------------|
| Shipping container/cooler in good condition?            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Not Present <input type="checkbox"/> |
| Custody seals intact on shipping container/cooler?      | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            | Not Present <input type="checkbox"/> |
| Custody seals intact on sample bottles?                 | Yes <input type="checkbox"/>            | No <input checked="" type="checkbox"/> | Not Present <input type="checkbox"/> |
| Chain of custody present?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                      |
| Chain of custody signed when relinquished and received? | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                      |
| Chain of custody agrees with sample labels?             | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                      |
| Samples in proper container/bottle?                     | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                      |
| Sample containers intact?                               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                      |
| Sufficient sample volume for indicated test?            | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                      |
| All samples received within holding time?               | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                      |
| Container/Temp Blank temperature in compliance?         | Yes <input checked="" type="checkbox"/> | No <input type="checkbox"/>            |                                      |

Temperature(s)/Thermometer(s): 1.0c/1.0c C/U IR3

Cooler(s)/Kit(s): 5989

Date/Time sample(s) sent to storage: 08/25/2014 13:20

Water - VOA vials have zero headspace?  
Yes ☐ No ☐ No VOA vials submitted ☒

Water - pH acceptable upon receipt?  
Yes ☒ No ☐ N/A ☐

pH adjusted?  
Yes ☐ No ☒ N/A ☐

pH adjusted by:

Login Notes: Cooler rec on 8/25/2014. All bottles except VOCs for Sx Dup-3 & MW-15 & all bottle for MW-2 except VOC & Ambers received in this cooler

Client Contacted: Date Contacted: Person Contacted:

Contacted By: 0 Regarding:

Comments:

Corrective Action:





Environmental

Cincinnati, OH  
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Chain of Custody Form

Page 1 of 3

COC ID: 9843

HS14080845

Navajo Refining Company  
Lovington Lea Refining - SA

Weston, WV  
3168

5280

ALS Project Manager:



| Customer Information                                                                                                                                                         |                             |         |       | Project Information       |                                    |                                                                                                                                                           |   | ALS Project Manager: |                                                   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------|---------|-------|---------------------------|------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---|----------------------|---------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|------|--|--|--|
| Purchase Order                                                                                                                                                               | 171658                      |         |       | Project Name              | Lovington Lea Refining Semi-Annual |                                                                                                                                                           |   | A                    | VOC (8260) Select                                 |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| Work Order                                                                                                                                                                   |                             |         |       | Project Number            |                                    |                                                                                                                                                           |   | B                    | SVOC LI (8270) TCL+1-Methylnaphthalene            |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| Company Name                                                                                                                                                                 | Navajo Refining Company     |         |       | Bill To Company           | Navajo Refining Company            |                                                                                                                                                           |   | C                    | Total Hg only (7470) Lab Filter 10 micron         |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| Send Report To                                                                                                                                                               | Robert Combs                |         |       | Invoice Attn              | Robert Combs                       |                                                                                                                                                           |   | D                    | Dissolved Metals (8020/7000) Select Lab Filter 45 |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| Address                                                                                                                                                                      | PO Box 159<br>501 East Main |         |       | Address                   | PO Box 159<br>501 East Main        |                                                                                                                                                           |   | E                    | Anions (300) Cl, F, SO4                           |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| City/State/Zip                                                                                                                                                               | Artesia, NM 88211           |         |       | City/State/Zip            | Artesia, NM 88211                  |                                                                                                                                                           |   | F                    | Alkalinity (Carbonate/Bicarbonate)                |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| Phone                                                                                                                                                                        | (575) 748-8733              |         |       | Phone                     | (575) 748-8733                     |                                                                                                                                                           |   | G                    | pH                                                |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| Fax                                                                                                                                                                          | (575) 748-5421              |         |       | Fax                       | (575) 748-5421                     |                                                                                                                                                           |   | H                    | Specific Conductance                              |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| e-Mail Address                                                                                                                                                               | jspeer@trcsolutions.com     |         |       | e-Mail Address            | robert.combs@chellyfrontier.com    |                                                                                                                                                           |   | I                    | TDS                                               |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
|                                                                                                                                                                              |                             |         |       |                           |                                    |                                                                                                                                                           |   | J                    | Nitrate/Nitrite (300)                             |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| No.                                                                                                                                                                          | Sample Description          | Date    | Time  | Matrix                    | Pres.                              | # Bottles                                                                                                                                                 | A | B                    | C                                                 | D                                                                                                                                                                                                                                                                    | E | F | G | H | I | J | Hold |  |  |  |
| 1                                                                                                                                                                            | MW-29                       | 8-20-14 | 1900  | GLW                       | 1,3,8                              | 9                                                                                                                                                         | X | X                    | X                                                 | X                                                                                                                                                                                                                                                                    | X | X | X | X | X | X |      |  |  |  |
| 2                                                                                                                                                                            | MW-4                        | 8-20-14 | 1915  | GLW                       | 1,3,8                              | 9                                                                                                                                                         | X | X                    | X                                                 | X                                                                                                                                                                                                                                                                    | X | X | X | X | X | X |      |  |  |  |
| 3                                                                                                                                                                            | MW-23                       | 8-21-14 | 835   |                           |                                    | 9                                                                                                                                                         | X | X                    | X                                                 | X                                                                                                                                                                                                                                                                    | X | X | X | X | X | X |      |  |  |  |
| 4                                                                                                                                                                            | MW-24                       |         | 1030  |                           |                                    | 9                                                                                                                                                         | X | X                    | X                                                 | X                                                                                                                                                                                                                                                                    | X | X | X | X | X | X |      |  |  |  |
| 5                                                                                                                                                                            | MW-3                        |         | 1220  |                           |                                    | 9                                                                                                                                                         | X | X                    | X                                                 | X                                                                                                                                                                                                                                                                    | X | X | X | X | X | X |      |  |  |  |
| 6                                                                                                                                                                            | MW-26                       |         | 1405  |                           |                                    | 9                                                                                                                                                         | X | X                    | X                                                 | X                                                                                                                                                                                                                                                                    | X | X | X | X | X | X |      |  |  |  |
| 7                                                                                                                                                                            | MW-9                        |         | 1610  |                           |                                    | 9                                                                                                                                                         | X | X                    | X                                                 | X                                                                                                                                                                                                                                                                    | X | X | X | X | X | X |      |  |  |  |
| 8                                                                                                                                                                            | MW-10                       |         | 1750  |                           |                                    | 9                                                                                                                                                         | X | X                    | X                                                 | X                                                                                                                                                                                                                                                                    | X | X | X | X | X | X |      |  |  |  |
| 9                                                                                                                                                                            | EB-08-21-14-A               |         | 1905  |                           |                                    | 9                                                                                                                                                         | X | X                    | X                                                 | X                                                                                                                                                                                                                                                                    | X | X | X | X | X | X |      |  |  |  |
| 10                                                                                                                                                                           | MW-7                        |         | 805   |                           |                                    | 9                                                                                                                                                         | X | X                    | X                                                 | X                                                                                                                                                                                                                                                                    | X | X | X | X | X | X |      |  |  |  |
| Sampler(s) Please Print & Sign                                                                                                                                               |                             |         |       | Shipment Method           |                                    | Required Turnaround Time: (Check Box)                                                                                                                     |   |                      |                                                   | Results Due Date:                                                                                                                                                                                                                                                    |   |   |   |   |   |   |      |  |  |  |
| John Allen                                                                                                                                                                   |                             |         |       | Fed Ex                    |                                    | <input checked="" type="checkbox"/> Std 10 Wk days <input type="checkbox"/> 5 Wk Days <input type="checkbox"/> 2 Wk Days <input type="checkbox"/> 24 Hour |   |                      |                                                   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| Reinforced by:                                                                                                                                                               |                             | Date:   | Time: | Received by:              |                                    | Notes:                                                                                                                                                    |   |                      |                                                   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| John Allen                                                                                                                                                                   |                             | 8-22-14 | 1400  | [Signature]               |                                    | Lab Filter - 45 micron Diss metal, 10 micron, 10 Day TAT, ALS Project Navajo - Lea Refinery Semi-Annual                                                   |   |                      |                                                   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| Reinforced by:                                                                                                                                                               |                             | Date:   | Time: | Received by (Laboratory): |                                    | Cooler ID                                                                                                                                                 |   | Cooler Temp.         |                                                   | QC Package: (Check One Box Below)                                                                                                                                                                                                                                    |   |   |   |   |   |   |      |  |  |  |
|                                                                                                                                                                              |                             |         |       | 8/23/14 9:15              |                                    |                                                                                                                                                           |   |                      |                                                   | <input checked="" type="checkbox"/> Level 2 Std QC <input type="checkbox"/> TRRP ChkList<br><input type="checkbox"/> Level 3 Std QC/Row da <input type="checkbox"/> TRRP Level 4<br><input type="checkbox"/> Level 4 SW846/CLP<br><input type="checkbox"/> Other/EDC |   |   |   |   |   |   |      |  |  |  |
| Logged by (Laboratory):                                                                                                                                                      |                             | Date:   | Time: | Checked by (Laboratory):  |                                    |                                                                                                                                                           |   |                      |                                                   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |
| Preservative Key: 1-HCl 2-HNO <sub>3</sub> 3-H <sub>2</sub> SO <sub>4</sub> 4-NaOH 5-Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> 6-NaHSO <sub>4</sub> 7-Other 8-4°C 9-5035 |                             |         |       |                           |                                    |                                                                                                                                                           |   |                      |                                                   |                                                                                                                                                                                                                                                                      |   |   |   |   |   |   |      |  |  |  |

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COC ID: 9843

ALS Project Manager:

HS14080845

Navajo Refining Company

Lovington Lea Refining - SA

Ieston, WV  
3168

5280



| Customer Information                                                                  |                             |  |  | Project Information |                                    |        |       | ALS Project Manager:                                                                                                                                      |                                                   |   |   |                                                                                                                                                                                 |   |   |   |   |   |   |      |  |
|---------------------------------------------------------------------------------------|-----------------------------|--|--|---------------------|------------------------------------|--------|-------|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|---|---|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|------|--|
| Purchase Order                                                                        | 171658                      |  |  | Project Name        | Lovington Lea Refining Semi-Annual |        |       | A                                                                                                                                                         | VOC (8260) Select                                 |   |   |                                                                                                                                                                                 |   |   |   |   |   |   |      |  |
| Work Order                                                                            |                             |  |  | Project Number      |                                    |        |       | B                                                                                                                                                         | SVOC LL (8270) TCL+1-Methylnaphthalene            |   |   |                                                                                                                                                                                 |   |   |   |   |   |   |      |  |
| Company Name                                                                          | Navajo Refining Company     |  |  | Bill To Company     | Navajo Refining Company            |        |       | C                                                                                                                                                         | Total Hg only (7470) Lab Filter 10 micron         |   |   |                                                                                                                                                                                 |   |   |   |   |   |   |      |  |
| Send Report To                                                                        | Robert Combs                |  |  | Invoice Attn        | Robert Combs                       |        |       | D                                                                                                                                                         | Dissolved Metals (8020/7000) Select Lab Filter 45 |   |   |                                                                                                                                                                                 |   |   |   |   |   |   |      |  |
| Address                                                                               | PO Box 150<br>501 East Main |  |  | Address             | PO Box 150<br>501 East Main        |        |       | E                                                                                                                                                         | Anions (300) Cl, F, SO4                           |   |   |                                                                                                                                                                                 |   |   |   |   |   |   |      |  |
| City/State/Zip                                                                        | Artesia, NM 88211           |  |  | City/State/Zip      | Artesia, NM 88211                  |        |       | F                                                                                                                                                         | Alkalinity (Carbonate/Bicarbonate)                |   |   |                                                                                                                                                                                 |   |   |   |   |   |   |      |  |
| Phone                                                                                 | (575) 748-8733              |  |  | Phone               | (575) 748-8733                     |        |       | G                                                                                                                                                         | pH                                                |   |   |                                                                                                                                                                                 |   |   |   |   |   |   |      |  |
| Fax                                                                                   | (575) 748-5421              |  |  | Fax                 | (575) 748-5421                     |        |       | H                                                                                                                                                         | Specific Conductance                              |   |   |                                                                                                                                                                                 |   |   |   |   |   |   |      |  |
| e-Mail Address                                                                        | jspeer@trc-solutions.com    |  |  | e-Mail Address      | robert.combs@hollyfronier.com      |        |       | I                                                                                                                                                         | TDS                                               |   |   |                                                                                                                                                                                 |   |   |   |   |   |   |      |  |
| No.                                                                                   | Sample Description          |  |  | Date                | Time                               | Matrix | Pres. | # Bottles                                                                                                                                                 | A                                                 | B | C | D                                                                                                                                                                               | E | F | G | H | I | J | Hold |  |
| 1                                                                                     | RW-1                        |  |  | 8-21-14             | 925                                | GW     | 1,3,8 | 9                                                                                                                                                         | X                                                 | X | X | X                                                                                                                                                                               | X | X | X | X | X | X |      |  |
| 2                                                                                     | MW-1                        |  |  |                     | 1030                               |        |       | 9                                                                                                                                                         | X                                                 | X | X | X                                                                                                                                                                               | X | X | X | X | X | X |      |  |
| 3                                                                                     | MW-6                        |  |  |                     | 1155                               |        |       | 9                                                                                                                                                         | X                                                 | X | X | X                                                                                                                                                                               | X | X | X | X | X | X |      |  |
| 4                                                                                     | MW-15                       |  |  |                     | 1335                               |        |       | 9                                                                                                                                                         | X                                                 | X | X | X                                                                                                                                                                               | X | X | X | X | X | X |      |  |
| 5                                                                                     | DUP-3                       |  |  |                     | 2400                               |        |       | 9                                                                                                                                                         | X                                                 | X | X | X                                                                                                                                                                               | X | X | X | X | X | X |      |  |
| 6                                                                                     | MW-2                        |  |  |                     | 1605                               |        |       | 9                                                                                                                                                         | X                                                 | X | X | X                                                                                                                                                                               | X | X | X | X | X | X |      |  |
| 7                                                                                     | MW-27                       |  |  |                     | 1725                               |        |       | 9                                                                                                                                                         | X                                                 | X | X | X                                                                                                                                                                               | X | X | X | X | X | X |      |  |
| 8                                                                                     | MW-8                        |  |  |                     | 1845                               |        |       | 9                                                                                                                                                         | X                                                 | X | X | X                                                                                                                                                                               | X | X | X | X | X | X |      |  |
| 9                                                                                     | WW-South                    |  |  | 8-22-14             | 900                                |        |       | 9                                                                                                                                                         | X                                                 | X | X | X                                                                                                                                                                               | X | X | X | X | X | X |      |  |
| 10                                                                                    | DUP-4                       |  |  | 8-22-14             | 2400                               |        |       | 9                                                                                                                                                         | X                                                 | X | X | X                                                                                                                                                                               | X | X | X | X | X | X |      |  |
| Sampler(s) Please Print & Sign                                                        |                             |  |  | Shipment Method     |                                    |        |       | Required Turnaround Time: (Check Box)                                                                                                                     |                                                   |   |   | Results Due Date:                                                                                                                                                               |   |   |   |   |   |   |      |  |
| John Allen                                                                            |                             |  |  | Fed Ex              |                                    |        |       | <input checked="" type="checkbox"/> Std 10 WK days <input type="checkbox"/> 5 WK Days <input type="checkbox"/> 2 WK Days <input type="checkbox"/> 24 Hour |                                                   |   |   |                                                                                                                                                                                 |   |   |   |   |   |   |      |  |
| Relinquished by:                                                                      |                             |  |  | Date:               |                                    | Time:  |       | Received by:                                                                                                                                              |                                                   |   |   | Notes:                                                                                                                                                                          |   |   |   |   |   |   |      |  |
| [Signature]                                                                           |                             |  |  | 8-22-14             |                                    | 1400   |       | [Signature]                                                                                                                                               |                                                   |   |   | Lab filter = 10 micron Diss metal, 10 micron Total metal<br>10 Day TAT. ALS Project: Navajo - Lea Refinery Semi-Annual                                                          |   |   |   |   |   |   |      |  |
| Relinquished by:                                                                      |                             |  |  | Date:               |                                    | Time:  |       | Received by (Laboratory):                                                                                                                                 |                                                   |   |   | Cooler ID                                                                                                                                                                       |   |   |   |   |   |   |      |  |
|                                                                                       |                             |  |  |                     |                                    |        |       | [Signature]                                                                                                                                               |                                                   |   |   | Cooler Temp.                                                                                                                                                                    |   |   |   |   |   |   |      |  |
| Logged by (Laboratory):                                                               |                             |  |  | Date:               |                                    | Time:  |       | Checked by (Laboratory):                                                                                                                                  |                                                   |   |   | QC Package: (Check One Box Below)                                                                                                                                               |   |   |   |   |   |   |      |  |
|                                                                                       |                             |  |  |                     |                                    |        |       | [Signature]                                                                                                                                               |                                                   |   |   | <input checked="" type="checkbox"/> Level 2 Std QC <input type="checkbox"/> Level 3 Std QC/Row da <input type="checkbox"/> Level 4 SW046/CLP <input type="checkbox"/> Other/EDD |   |   |   |   |   |   |      |  |
| Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4°C 9-5035 |                             |  |  |                     |                                    |        |       |                                                                                                                                                           |                                                   |   |   | <input type="checkbox"/> TRRP Chklist<br><input type="checkbox"/> TRRP Level 4                                                                                                  |   |   |   |   |   |   |      |  |

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COC ID: 9843

ALS Project Manager:

HS14080845

Navajo Refining Company  
Lovington Lea Refining - SA

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| Customer Information |                             |  |  | Project Information |                                    |  |  | ALS Project Manager: |                                                    |  |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------|--|--|---------------------|------------------------------------|--|--|----------------------|----------------------------------------------------|--|--|--|--|--|--|--|--|--|--|--|
| Purchase Order       | 171658                      |  |  | Project Name        | Lovington Lea Refining Semi-Annual |  |  | A                    | VOC (8260) Select                                  |  |  |  |  |  |  |  |  |  |  |  |
| Work Order           |                             |  |  | Project Number      |                                    |  |  | B                    | SVOC LL (8270) TCL+1-Methylnaphthalene             |  |  |  |  |  |  |  |  |  |  |  |
| Company Name         | Navajo Refining Company     |  |  | Bill To Company     | Navajo Refining Company            |  |  | C                    | Total Hg only (7470) Lab Filter 10 micron          |  |  |  |  |  |  |  |  |  |  |  |
| Send Report To       | Robert Combs                |  |  | Invoice Attn        | Robert Combs                       |  |  | D                    | Dissolved Metals (8020/7000) Select Lab Filter .45 |  |  |  |  |  |  |  |  |  |  |  |
| Address              | PO Box 158<br>501 East Main |  |  | Address             | PO Box 158<br>501 East Main        |  |  | E                    | Anions (300) Cl, F, SO4                            |  |  |  |  |  |  |  |  |  |  |  |
| City/State/Zip       | Artesia, NM 88211           |  |  | City/State/Zip      | Artesia, NM 88211                  |  |  | F                    | Alkalinity (Carbonate/Bicarbonate)                 |  |  |  |  |  |  |  |  |  |  |  |
| Phone                | (575) 748-6733              |  |  | Phone               | (575) 748-6733                     |  |  | G                    | pH                                                 |  |  |  |  |  |  |  |  |  |  |  |
| Fax                  | (575) 748-5421              |  |  | Fax                 | (575) 748-5421                     |  |  | H                    | Specific Conductance                               |  |  |  |  |  |  |  |  |  |  |  |
| e-Mail Address       | jspeck@resolutions.com      |  |  | e-Mail Address      | Robert.Combs@chellyfron.com        |  |  | I                    | TDS                                                |  |  |  |  |  |  |  |  |  |  |  |
|                      |                             |  |  |                     |                                    |  |  | J                    | Nitrate/Nitrite (300)                              |  |  |  |  |  |  |  |  |  |  |  |

| No. | Sample Description | Date    | Time | Matrix | Pres. | # Bottles        | A | B | C | D | E | F | G | H | I | J | Hold   |
|-----|--------------------|---------|------|--------|-------|------------------|---|---|---|---|---|---|---|---|---|---|--------|
| 1   | WW-East            | 8-22-14 | 1020 | GW     | 1,3,8 | 27 <sup>th</sup> | X | X | X | X | X | X | X | X | X | X | MS/MSO |
| 2   | WW-North           | 8-22-14 | 1120 | 1      | 1     | 9                | X | X | X | X | X | X | X | X | X | X |        |
| 3   | MW-30              | 1       | 815  | 1      | 1     | 9                | X | X | X | X | X | X | X | X | X | X |        |
| 4   | MW-17R             | 1       | 1005 | 1      | 1     | 9                | X | X | X | X | X | X | X | X | X | X |        |
| 5   | EB-8-22-14-A       | 1       | 1130 | 1      | 1     | 9                | X | X | X | X | X | X | X | X | X | X |        |
| 6   | TB-08-22-14-A      | —       | —    | W      | 1,8   | 3                | X |   |   |   |   |   |   |   |   |   |        |
| 7   |                    |         |      |        |       |                  |   |   |   |   |   |   |   |   |   |   |        |
| 8   |                    |         |      |        |       |                  |   |   |   |   |   |   |   |   |   |   |        |
| 9   |                    |         |      |        |       |                  |   |   |   |   |   |   |   |   |   |   |        |
| 10  |                    |         |      |        |       |                  |   |   |   |   |   |   |   |   |   |   |        |

|                                                                                                                                                                              |  |                  |               |                                                         |  |                                                                                                                                                                                                    |  |              |  |                                                                                                                                                                                          |  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------|---------------|---------------------------------------------------------|--|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|--------------|--|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Sampler(s) Please Print & Sign<br><i>John Allen Dwyer</i>                                                                                                                    |  |                  |               | Shipment Method<br>Fed Ex                               |  | Required Turnaround Time: (Check Box)<br><input checked="" type="checkbox"/> Std 10 WK days <input type="checkbox"/> 5 WK Days <input type="checkbox"/> 2 WK Days <input type="checkbox"/> 24 Hour |  |              |  | Results Due Date:                                                                                                                                                                        |  |
| Relinquished by:<br><i>[Signature]</i>                                                                                                                                       |  | Date:<br>8-22-14 | Time:<br>1400 | Received by:<br><i>[Signature]</i>                      |  | Notes: Lab Filter = .45 micron Diss metal 10 micron<br>10 Day TAT ALS Project: Navajo - Lea Refinery Semi-Annual Total metal                                                                       |  |              |  |                                                                                                                                                                                          |  |
| Relinquished by:                                                                                                                                                             |  | Date:            | Time:         | Received by (Laboratory):<br><i>[Signature]</i> 8/23/14 |  | Cooler ID:                                                                                                                                                                                         |  | Cooler Temp: |  | QC Package: (Check One Box Below)                                                                                                                                                        |  |
| Logged by (Laboratory):                                                                                                                                                      |  | Date:            | Time:         | Checked by (Laboratory):<br>9:15                        |  |                                                                                                                                                                                                    |  |              |  | <input checked="" type="checkbox"/> Level 2 Std QC<br><input type="checkbox"/> Level 3 Std QC/Row da<br><input type="checkbox"/> Level 4 SW846/CLP<br><input type="checkbox"/> Other/EDD |  |
| Preservative Key: 1-HCl 2-HNO <sub>3</sub> 3-H <sub>2</sub> SO <sub>4</sub> 4-NaOH 5-Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub> 6-NaHSO <sub>4</sub> 7-Other 8-4°C 9-5035 |  |                  |               |                                                         |  |                                                                                                                                                                                                    |  |              |  |                                                                                                                                                                                          |  |

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MPS# 7801 3769 0620  
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Mstr# 8060 3811 6256

8 of 13  
MPS# 7801 3769 0641  
0681  
Mstr# 8060 3811 6256

1 of 13  
TRK# 8060 3811 6256  
0215  
## MASTER ##

12 of 13  
MPS# 7801 3769 0685  
0681  
Mstr# 8060 3811 6256

3 of 13  
MPS# 7801 3769 0593  
0681  
Mstr# 8060 3811 6256

7 of 13  
MPS# 7801 3769 0630  
0681  
Mstr# 8060 3811 6256

9 of 13  
S# 7801 3769 0652  
381  
Mstr# 8060 3811 6256

13 of 13  
MPS# 7801 3769 0696  
0681  
Mstr# 8060 3811 6256

4 of 13  
01 3765  
8060 3811 6256

|                                                                                                                                                                                                                     |                                                                                                   |  |                                  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--|----------------------------------|
|  <b>ALS Environmental</b><br>10450 Stanchiff Rd., Suite 210<br>Houston, Texas 77099<br>Tel. +1 281 530 5656<br>Fax. +1 281 530 5287 | <b>CUSTODY SEAL</b><br>Date: 8-22-14 Time: 1500<br>Name: D.C. [Signature]<br>Company: [Signature] |  | Seal Broken By: MS<br>Date: 8/23 |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--|----------------------------------|

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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--|----------------------------------|
|  <b>ALS Environmental</b><br>10450 Stanchiff Rd., Suite 210<br>Houston, Texas 77099<br>Tel. +1 281 530 5656<br>Fax. +1 281 530 5887 | <b>CUSTODY SEAL</b><br>Date: 8-22-14 Time: 1500<br>Name: D.C. [Signature]<br>Company: [Signature] |  | Seal Broken By: MS<br>Date: 8/23 |
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|  <b>ALS Environmental</b><br>10450 Stanchiff Rd., Suite 210<br>Houston, Texas 77099<br>Tel. +1 281 530 5656<br>Fax. +1 281 530 5887 | <b>CUSTODY SEAL</b><br>Date: 8-22-14 Time: 1500<br>Name: D.C. [Signature]<br>Company: [Signature] |  | Seal Broken By: MS<br>Date: 8/23 |
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|                                                                                                                                                                                                                      |                                                                                                   |  |                                  |
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|  <b>ALS Environmental</b><br>10450 Stanchiff Rd., Suite 210<br>Houston, Texas 77099<br>Tel. +1 281 530 5656<br>Fax. +1 281 530 5887 | <b>CUSTODY SEAL</b><br>Date: 8-22-14 Time: 1500<br>Name: D.C. [Signature]<br>Company: [Signature] |  | Seal Broken By: MS<br>Date: 8/23 |
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|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--|----------------------------------|
|  <b>ALS Environmental</b><br>10450 Stanchiff Rd., Suite 210<br>Houston, Texas 77099<br>Tel. +1 281 530 5656<br>Fax. +1 281 530 5887 | <b>CUSTODY SEAL</b><br>Date: 8-22-14 Time: 1500<br>Name: D.C. [Signature]<br>Company: [Signature] |  | Seal Broken By: MS<br>Date: 8/23 |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--|----------------------------------|

|                                                                                                                                                                                                                       |                                                                                                   |  |                                  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--|----------------------------------|
|  <b>ALS Environmental</b><br>10450 Stanchiff Rd., Suite 210<br>Houston, Texas 77099<br>Tel. +1 281 530 5656<br>Fax. +1 281 530 5887 | <b>CUSTODY SEAL</b><br>Date: 8-22-14 Time: 1500<br>Name: D.C. [Signature]<br>Company: [Signature] |  | Seal Broken By: MS<br>Date: 8/23 |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--|----------------------------------|

|                                                                                                                                                                                                                        |                                                                                                   |  |                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--|----------------------------------|
|  <b>ALS Environmental</b><br>10450 Stanchiff Rd., Suite 210<br>Houston, Texas 77099<br>Tel. +1 281 530 5656<br>Fax. +1 281 530 5887 | <b>CUSTODY SEAL</b><br>Date: 8-22-14 Time: 1500<br>Name: D.C. [Signature]<br>Company: [Signature] |  | Seal Broken By: MS<br>Date: 8/23 |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------|--|----------------------------------|

|                                                                                                   |  |                                  |
|---------------------------------------------------------------------------------------------------|--|----------------------------------|
| <b>CUSTODY SEAL</b><br>Date: 8-22-14 Time: 1500<br>Name: D.C. [Signature]<br>Company: [Signature] |  | Seal Broken By: MS<br>Date: 8/23 |
|---------------------------------------------------------------------------------------------------|--|----------------------------------|

Rec- 8/25/14

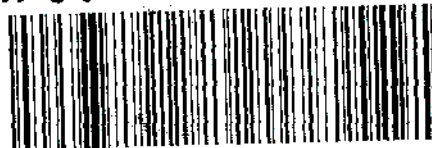
|                                                                                |                               |                     |                 |
|--------------------------------------------------------------------------------|-------------------------------|---------------------|-----------------|
| AT S E V I N T E N A N C E<br>P.O. Box 2700<br>Wash DC<br>Fax: +1 201 530 6887 | <b>US T O D Y S E A L</b>     |                     | Seal Broken By: |
|                                                                                | Name: _____<br>Company: _____ | Time: 7400<br>_____ | Date: 8-25-14   |

FedEx  
TRK# 7801 3769 0674  
0201

MON - 25 AUG 10:30A  
PRIORITY OVERNIGHT

**XH SGRA**

77099  
TX-US  
IAH



T10 123602 240US14 PHTA 52201/PC02/5500



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

January 16, 2015

Julie Speer  
Navajo Refining Company  
P.O. Box 159  
Artesia, NM 88211-0159  
TEL: (575) 748-3311  
FAX

RE: Lovington Lea Refining

OrderNo.: 1412926

Dear Julie Speer:

Hall Environmental Analysis Laboratory received 5 sample(s) on 12/18/2014 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1412926**

Date Reported: **1/16/2015**

**CLIENT:** Navajo Refining Company

**Client Sample ID:** WW-North

**Project:** Lovington Lea Refining

**Collection Date:** 12/17/2014 1:55:00 PM

**Lab ID:** 1412926-001

**Matrix:** AQUEOUS

**Received Date:** 12/18/2014 9:15:00 AM

| Analyses                           | Result | RL      | Qual | Units | DF | Date Analyzed         | Batch                |
|------------------------------------|--------|---------|------|-------|----|-----------------------|----------------------|
| <b>EPA METHOD 300.0: ANIONS</b>    |        |         |      |       |    |                       | Analyst: <b>Igp</b>  |
| Fluoride                           | 0.91   | 0.10    |      | mg/L  | 1  | 12/19/2014 3:25:16 AM | R23255               |
| Chloride                           | 110    | 10      |      | mg/L  | 20 | 12/19/2014 3:37:42 AM | R23255               |
| Nitrogen, Nitrite (As N)           | ND     | 0.10    |      | mg/L  | 1  | 12/19/2014 3:25:16 AM | R23255               |
| Nitrogen, Nitrate (As N)           | 3.0    | 0.10    |      | mg/L  | 1  | 12/19/2014 3:25:16 AM | R23255               |
| Sulfate                            | 69     | 10      |      | mg/L  | 20 | 12/19/2014 3:37:42 AM | R23255               |
| <b>EPA METHOD 7470: MERCURY</b>    |        |         |      |       |    |                       | Analyst: <b>MMD</b>  |
| Mercury                            | ND     | 0.00020 |      | mg/L  | 1  | 12/31/2014 2:13:38 PM | 17040                |
| <b>EPA METHOD 8260B: VOLATILES</b> |        |         |      |       |    |                       | Analyst: <b>cadg</b> |
| Benzene                            | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Toluene                            | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Ethylbenzene                       | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Methyl tert-butyl ether (MTBE)     | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 1,2,4-Trimethylbenzene             | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 1,3,5-Trimethylbenzene             | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 1,2-Dichloroethane (EDC)           | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 1,2-Dibromoethane (EDB)            | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Naphthalene                        | ND     | 2.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 1-Methylnaphthalene                | ND     | 4.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 2-Methylnaphthalene                | ND     | 4.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Acetone                            | ND     | 10      |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Bromobenzene                       | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Bromodichloromethane               | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Bromoform                          | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Bromomethane                       | ND     | 3.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 2-Butanone                         | ND     | 10      |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Carbon disulfide                   | ND     | 10      |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Carbon Tetrachloride               | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Chlorobenzene                      | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Chloroethane                       | ND     | 2.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Chloroform                         | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Chloromethane                      | ND     | 3.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 2-Chlorotoluene                    | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 4-Chlorotoluene                    | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| cis-1,2-DCE                        | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| cis-1,3-Dichloropropene            | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 1,2-Dibromo-3-chloropropane        | ND     | 2.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Dibromochloromethane               | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Dibromomethane                     | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |   |                                                 |    |                                                    |              |
|--------------------|---|-------------------------------------------------|----|----------------------------------------------------|--------------|
| <b>Qualifiers:</b> | * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    | Page 1 of 40 |
|                    | E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |              |
|                    | J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |              |
|                    | O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |              |
|                    | R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |              |
|                    | S | Spike Recovery outside accepted recovery limits |    |                                                    |              |



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1412926**

Date Reported: 1/16/2015

**CLIENT:** Navajo Refining Company

**Client Sample ID:** WW-North

**Project:** Lovington Lea Refining

**Collection Date:** 12/17/2014 1:55:00 PM

**Lab ID:** 1412926-001

**Matrix:** AQUEOUS

**Received Date:** 12/18/2014 9:15:00 AM

| Analyses                           | Result | RL     | Qual | Units | DF | Date Analyzed         | Batch                |
|------------------------------------|--------|--------|------|-------|----|-----------------------|----------------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |        |      |       |    |                       | Analyst: <b>cadg</b> |
| 1,2-Dichlorobenzene                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 1,3-Dichlorobenzene                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 1,4-Dichlorobenzene                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Dichlorodifluoromethane            | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 1,1-Dichloroethane                 | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 1,1-Dichloroethene                 | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 1,2-Dichloropropane                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 1,3-Dichloropropane                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 2,2-Dichloropropane                | ND     | 2.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 1,1-Dichloropropene                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Hexachlorobutadiene                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 2-Hexanone                         | ND     | 10     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Isopropylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 4-Isopropyltoluene                 | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 4-Methyl-2-pentanone               | ND     | 10     |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Methylene Chloride                 | ND     | 3.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| n-Butylbenzene                     | ND     | 3.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| n-Propylbenzene                    | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| sec-Butylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Styrene                            | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| tert-Butylbenzene                  | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 1,1,1,2-Tetrachloroethane          | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 1,1,2,2-Tetrachloroethane          | ND     | 2.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Tetrachloroethene (PCE)            | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| trans-1,2-DCE                      | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| trans-1,3-Dichloropropene          | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 1,2,3-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 1,2,4-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 1,1,1-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 1,1,2-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Trichloroethene (TCE)              | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Trichlorofluoromethane             | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| 1,2,3-Trichloropropane             | ND     | 2.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Vinyl chloride                     | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Xylenes, Total                     | ND     | 1.5    |      | µg/L  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Surr: 1,2-Dichloroethane-d4        | 85.8   | 70-130 |      | %REC  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Surr: 4-Bromofluorobenzene         | 82.8   | 70-130 |      | %REC  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Surr: Dibromofluoromethane         | 85.8   | 70-130 |      | %REC  | 1  | 12/29/2014 1:06:44 PM | R23401               |
| Surr: Toluene-d8                   | 89.6   | 70-130 |      | %REC  | 1  | 12/29/2014 1:06:44 PM | R23401               |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |                                                   |                                                      |
|--------------------|---------------------------------------------------|------------------------------------------------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    |
|                    | E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |
|                    | J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               |
|                    | O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
|                    | R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
|                    | S Spike Recovery outside accepted recovery limits |                                                      |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1412926**

Date Reported: **1/16/2015**

**CLIENT:** Navajo Refining Company

**Client Sample ID:** WW-North

**Project:** Lovington Lea Refining

**Collection Date:** 12/17/2014 1:55:00 PM

**Lab ID:** 1412926-001

**Matrix:** AQUEOUS

**Received Date:** 12/18/2014 9:15:00 AM

| Analyses                        | Result | RL   | Qual | Units | DF | Date Analyzed | Batch               |
|---------------------------------|--------|------|------|-------|----|---------------|---------------------|
| <b>EPA 8270D: SEMIVOLATILES</b> |        |      |      |       |    |               | Analyst: <b>SUB</b> |
| 1,1-Biphenyl                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Atrazine                        | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzaldehyde                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Caprolactam                     | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 1,2,4-Trichlorobenzene          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 1,2-Dichlorobenzene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 1,2-Diphenylhydrazine           | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 1,3-Dichlorobenzene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Acetophenone                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 1,4-Dichlorobenzene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 1-Methylnaphthalene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,3,4,6-Tetrachlorophenol       | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,3,5,6-Tetrachlorophenol       | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,4,5-Trichlorophenol           | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,4,6-Trichlorophenol           | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,4-Dichlorophenol              | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,4-Dimethylphenol              | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,4-Dinitrophenol               | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,4-Dinitrotoluene              | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,6-Dinitrotoluene              | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2-Chloronaphthalene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2-Chlorophenol                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2-Methylnaphthalene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2-Methylphenol                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2-Nitroaniline                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2-Nitrophenol                   | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 3,3'-Dichlorobenzidine          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 3+4-Methylphenol                | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 3-Nitroaniline                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4,6-Dinitro-2-methylphenol      | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4-Bromophenyl phenyl ether      | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4-Chloro-3-methylphenol         | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4-Chloroaniline                 | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4-Chlorophenyl phenyl ether     | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4-Nitroaniline                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4-Nitrophenol                   | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Acenaphthene                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Acenaphthylene                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Aniline                         | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |                                                   |                                                      |              |
|--------------------|---------------------------------------------------|------------------------------------------------------|--------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    | Page 3 of 40 |
|                    | E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |              |
|                    | J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               |              |
|                    | O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |              |
|                    | R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |              |
|                    | S Spike Recovery outside accepted recovery limits |                                                      |              |



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1412926**

Date Reported: **1/16/2015**

**CLIENT:** Navajo Refining Company

**Client Sample ID:** WW-North

**Project:** Lovington Lea Refining

**Collection Date:** 12/17/2014 1:55:00 PM

**Lab ID:** 1412926-001

**Matrix:** AQUEOUS

**Received Date:** 12/18/2014 9:15:00 AM

| Analyses                        | Result | RL   | Qual | Units | DF | Date Analyzed | Batch               |
|---------------------------------|--------|------|------|-------|----|---------------|---------------------|
| <b>EPA 8270D: SEMIVOLATILES</b> |        |      |      |       |    |               | Analyst: <b>SUB</b> |
| Anthracene                      | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzidine                       | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzo(g,h,i)perylene            | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benz(a)anthracene               | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzo(a)pyrene                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzo(b)fluoranthene            | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzo(k)fluoranthene            | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzyl alcohol                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Bis(2-chloroethoxy)methane      | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Bis(2-chloroethyl)ether         | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Bis(2-chloroisopropyl)ether     | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Bis(2-ethylhexyl)phthalate      | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Butyl benzyl phthalate          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Carbazole                       | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Chrysene                        | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Dibenz(a,h)anthracene           | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Dibenzofuran                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Diethyl phthalate               | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Dimethyl phthalate              | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Di-n-butyl phthalate            | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Di-n-octyl phthalate            | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Fluoranthene                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Fluorene                        | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Hexachlorobenzene               | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Hexachlorobutadiene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Hexachlorocyclopentadiene       | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Hexachloroethane                | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Indeno(1,2,3-cd)pyrene          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Isophorone                      | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Naphthalene                     | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Nitrobenzene                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| N-Nitrosodimethylamine          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| N-Nitrosodi-n-propylamine       | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| N-Nitrosodiphenylamine          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Pentachlorophenol               | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Phenanthrene                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Phenol                          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Pyrene                          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Pyridine                        | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |   |                                                 |    |                                                    |              |
|--------------------|---|-------------------------------------------------|----|----------------------------------------------------|--------------|
| <b>Qualifiers:</b> | * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    | Page 4 of 40 |
|                    | E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |              |
|                    | J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |              |
|                    | O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |              |
|                    | R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |              |
|                    | S | Spike Recovery outside accepted recovery limits |    |                                                    |              |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1412926**

Date Reported: 1/16/2015

**CLIENT:** Navajo Refining Company

**Client Sample ID:** WW-North

**Project:** Lovington Lea Refining

**Collection Date:** 12/17/2014 1:55:00 PM

**Lab ID:** 1412926-001

**Matrix:** AQUEOUS

**Received Date:** 12/18/2014 9:15:00 AM

| Analyses                             | Result  | RL      | Qual | Units | DF | Date Analyzed | Batch               |
|--------------------------------------|---------|---------|------|-------|----|---------------|---------------------|
| <b>EPA 8270D: SEMIVOLATILES</b>      |         |         |      |       |    |               | Analyst: <b>SUB</b> |
| Surr: 2,4,6-Tribromophenol           | 98.4    | 53-122  |      | %REC  | 1  | 1/1/2015      | R23640              |
| Surr: 2-Fluorobiphenyl               | 103     | 12-116  |      | %REC  | 1  | 1/1/2015      | R23640              |
| Surr: 2-Fluorophenol                 | 79.8    | 10-139  |      | %REC  | 1  | 1/1/2015      | R23640              |
| Surr: Nitrobenzene-d5                | 94.8    | 68-118  |      | %REC  | 1  | 1/1/2015      | R23640              |
| Surr: Phenol-d5                      | 82.0    | 28-154  |      | %REC  | 1  | 1/1/2015      | R23640              |
| Surr: Terphenyl-d14                  | 86.4    | 20-137  |      | %REC  | 1  | 1/1/2015      | R23640              |
| <b>EPA METHOD 6020: DISSOLVED</b>    |         |         |      |       |    |               | Analyst: <b>SUB</b> |
| Aluminum                             | ND      | 0.0100  |      | mg/L  | 1  | 1/7/2015      | R23667              |
| Arsenic                              | 0.00579 | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Barium                               | 0.0985  | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Boron                                | 0.121   | 0.0100  |      | mg/L  | 1  | 1/8/2015      | R23667              |
| Cadmium                              | ND      | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Calcium                              | 82.7    | 0.100   |      | mg/L  | 1  | 1/6/2015      | R23667              |
| Chromium                             | 0.00101 | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Cobalt                               | ND      | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Copper                               | 0.00108 | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Iron                                 | 0.0180  | 0.0100  |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Lead                                 | ND      | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Magnesium                            | 8.57    | 0.0100  |      | mg/L  | 1  | 1/6/2015      | R23667              |
| Manganese                            | ND      | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Molybdenum                           | 0.00346 | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Nickel                               | ND      | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Potassium                            | 1.89    | 0.100   |      | mg/L  | 1  | 1/6/2015      | R23667              |
| Selenium                             | 0.00359 | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Silver                               | ND      | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Sodium                               | 54.4    | 0.100   |      | mg/L  | 1  | 1/6/2015      | R23667              |
| Uranium                              | 0.00179 | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Zinc                                 | 0.00315 | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| <b>EPA 6020: METALS-TOTAL SUBBED</b> |         |         |      |       |    |               | Analyst: <b>SUB</b> |
| Aluminum                             | ND      | 0.010   |      | mg/L  | 1  | 1/7/2015      | R23657              |
| Barium                               | 0.11    | 0.0010  |      | mg/L  | 1  | 12/31/2014    | R23657              |
| Boron                                | 0.12    | 0.010   |      | mg/L  | 1  | 1/8/2015      | R23657              |
| Cadmium                              | ND      | 0.0010  |      | mg/L  | 1  | 12/31/2014    | R23657              |
| Calcium                              | 83      | 0.10    |      | mg/L  | 1  | 1/6/2015      | R23657              |
| Cobalt                               | ND      | 0.0010  |      | mg/L  | 1  | 12/31/2014    | R23657              |
| Copper                               | 0.0012  | 0.0010  |      | mg/L  | 1  | 12/31/2014    | R23657              |
| Iron                                 | 0.019   | 0.010   |      | mg/L  | 1  | 12/31/2014    | R23657              |
| Lead                                 | ND      | 0.0010  |      | mg/L  | 1  | 1/7/2015      | R23657              |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |                                                   |                                                      |              |
|--------------------|---------------------------------------------------|------------------------------------------------------|--------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    |              |
|                    | E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |              |
|                    | J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               | Page 5 of 40 |
|                    | O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |              |
|                    | R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |              |
|                    | S Spike Recovery outside accepted recovery limits |                                                      |              |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1412926**

Date Reported: **1/16/2015**

**CLIENT:** Navajo Refining Company

**Client Sample ID:** WW-North

**Project:** Lovington Lea Refining

**Collection Date:** 12/17/2014 1:55:00 PM

**Lab ID:** 1412926-001

**Matrix:** AQUEOUS

**Received Date:** 12/18/2014 9:15:00 AM

| Analyses                             | Result | RL     | Qual | Units      | DF | Date Analyzed         | Batch               |
|--------------------------------------|--------|--------|------|------------|----|-----------------------|---------------------|
| <b>EPA 6020: METALS-TOTAL SUBBED</b> |        |        |      |            |    |                       | Analyst: <b>SUB</b> |
| Magnesium                            | 9.6    | 0.10   |      | mg/L       | 1  | 1/6/2015              | R23657              |
| Manganese                            | ND     | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Molybdenum                           | 0.0033 | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Nickel                               | ND     | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Potassium                            | 2.1    | 0.10   |      | mg/L       | 1  | 1/6/2015              | R23657              |
| Silver                               | ND     | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Sodium                               | 53     | 0.10   |      | mg/L       | 1  | 1/6/2015              | R23657              |
| Zinc                                 | 0.0019 | 0.0010 |      | mg/L       | 1  | 1/7/2015              | R23657              |
| Arsenic                              | 0.0058 | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Chromium                             | ND     | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Selenium                             | 0.0036 | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Uranium                              | 0.0018 | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| <b>SM2320B: ALKALINITY</b>           |        |        |      |            |    |                       | Analyst: <b>JRR</b> |
| Bicarbonate (As CaCO3)               | 180    | 20     |      | mg/L CaCO3 | 1  | 12/19/2014 1:39:31 PM | R23288              |
| Carbonate (As CaCO3)                 | ND     | 2.0    |      | mg/L CaCO3 | 1  | 12/19/2014 1:39:31 PM | R23288              |
| Total Alkalinity (as CaCO3)          | 180    | 20     |      | mg/L CaCO3 | 1  | 12/19/2014 1:39:31 PM | R23288              |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |   |                                                 |    |                                                    |              |
|--------------------|---|-------------------------------------------------|----|----------------------------------------------------|--------------|
| <b>Qualifiers:</b> | * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    | Page 6 of 40 |
|                    | E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |              |
|                    | J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |              |
|                    | O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |              |
|                    | R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |              |
|                    | S | Spike Recovery outside accepted recovery limits |    |                                                    |              |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1412926**

Date Reported: **1/16/2015**

**CLIENT:** Navajo Refining Company

**Client Sample ID:** WW-South

**Project:** Lovington Lea Refining

**Collection Date:** 12/17/2014 2:50:00 PM

**Lab ID:** 1412926-002

**Matrix:** AQUEOUS

**Received Date:** 12/18/2014 9:15:00 AM

| Analyses                           | Result | RL      | Qual | Units | DF | Date Analyzed         | Batch                |
|------------------------------------|--------|---------|------|-------|----|-----------------------|----------------------|
| <b>EPA METHOD 300.0: ANIONS</b>    |        |         |      |       |    |                       | Analyst: <b>Igp</b>  |
| Fluoride                           | 0.63   | 0.10    |      | mg/L  | 1  | 12/19/2014 3:50:07 AM | R23255               |
| Chloride                           | 390    | 10      | *    | mg/L  | 20 | 12/19/2014 4:02:32 AM | R23255               |
| Nitrogen, Nitrite (As N)           | ND     | 0.10    |      | mg/L  | 1  | 12/19/2014 3:50:07 AM | R23255               |
| Nitrogen, Nitrate (As N)           | 3.2    | 0.10    |      | mg/L  | 1  | 12/19/2014 3:50:07 AM | R23255               |
| Sulfate                            | 91     | 10      |      | mg/L  | 20 | 12/19/2014 4:02:32 AM | R23255               |
| <b>EPA METHOD 7470: MERCURY</b>    |        |         |      |       |    |                       | Analyst: <b>MMD</b>  |
| Mercury                            | ND     | 0.00020 |      | mg/L  | 1  | 12/31/2014 2:15:24 PM | 17040                |
| <b>EPA METHOD 8260B: VOLATILES</b> |        |         |      |       |    |                       | Analyst: <b>cadg</b> |
| Benzene                            | 2.3    | 1.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Toluene                            | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Ethylbenzene                       | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Methyl tert-butyl ether (MTBE)     | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 1,2,4-Trimethylbenzene             | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 1,3,5-Trimethylbenzene             | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 1,2-Dichloroethane (EDC)           | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 1,2-Dibromoethane (EDB)            | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Naphthalene                        | ND     | 2.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 1-Methylnaphthalene                | ND     | 4.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 2-Methylnaphthalene                | ND     | 4.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Acetone                            | ND     | 10      |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Bromobenzene                       | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Bromodichloromethane               | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Bromoform                          | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Bromomethane                       | ND     | 3.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 2-Butanone                         | ND     | 10      |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Carbon disulfide                   | ND     | 10      |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Carbon Tetrachloride               | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Chlorobenzene                      | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Chloroethane                       | ND     | 2.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Chloroform                         | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Chloromethane                      | ND     | 3.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 2-Chlorotoluene                    | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 4-Chlorotoluene                    | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| cis-1,2-DCE                        | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| cis-1,3-Dichloropropene            | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 1,2-Dibromo-3-chloropropane        | ND     | 2.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Dibromochloromethane               | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Dibromomethane                     | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |   |                                                 |    |                                                    |              |
|--------------------|---|-------------------------------------------------|----|----------------------------------------------------|--------------|
| <b>Qualifiers:</b> | * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    | Page 7 of 40 |
|                    | E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |              |
|                    | J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |              |
|                    | O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |              |
|                    | R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |              |
|                    | S | Spike Recovery outside accepted recovery limits |    |                                                    |              |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1412926**

Date Reported: **1/16/2015**

**CLIENT:** Navajo Refining Company

**Client Sample ID:** WW-South

**Project:** Lovington Lea Refining

**Collection Date:** 12/17/2014 2:50:00 PM

**Lab ID:** 1412926-002

**Matrix:** AQUEOUS

**Received Date:** 12/18/2014 9:15:00 AM

| Analyses                           | Result | RL     | Qual | Units | DF | Date Analyzed         | Batch                |
|------------------------------------|--------|--------|------|-------|----|-----------------------|----------------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |        |      |       |    |                       | Analyst: <b>cadg</b> |
| 1,2-Dichlorobenzene                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 1,3-Dichlorobenzene                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 1,4-Dichlorobenzene                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Dichlorodifluoromethane            | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 1,1-Dichloroethane                 | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 1,1-Dichloroethene                 | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 1,2-Dichloropropane                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 1,3-Dichloropropane                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 2,2-Dichloropropane                | ND     | 2.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 1,1-Dichloropropene                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Hexachlorobutadiene                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 2-Hexanone                         | ND     | 10     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Isopropylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 4-Isopropyltoluene                 | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 4-Methyl-2-pentanone               | ND     | 10     |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Methylene Chloride                 | ND     | 3.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| n-Butylbenzene                     | ND     | 3.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| n-Propylbenzene                    | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| sec-Butylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Styrene                            | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| tert-Butylbenzene                  | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 1,1,1,2-Tetrachloroethane          | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 1,1,2,2-Tetrachloroethane          | ND     | 2.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Tetrachloroethene (PCE)            | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| trans-1,2-DCE                      | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| trans-1,3-Dichloropropene          | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 1,2,3-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 1,2,4-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 1,1,1-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 1,1,2-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Trichloroethene (TCE)              | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Trichlorofluoromethane             | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| 1,2,3-Trichloropropane             | ND     | 2.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Vinyl chloride                     | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Xylenes, Total                     | ND     | 1.5    |      | µg/L  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Surr: 1,2-Dichloroethane-d4        | 83.7   | 70-130 |      | %REC  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Surr: 4-Bromofluorobenzene         | 81.8   | 70-130 |      | %REC  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Surr: Dibromofluoromethane         | 87.8   | 70-130 |      | %REC  | 1  | 12/29/2014 1:38:57 PM | R23401               |
| Surr: Toluene-d8                   | 87.5   | 70-130 |      | %REC  | 1  | 12/29/2014 1:38:57 PM | R23401               |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |                                                   |                                                      |
|--------------------|---------------------------------------------------|------------------------------------------------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    |
|                    | E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |
|                    | J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               |
|                    | O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
|                    | R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
|                    | S Spike Recovery outside accepted recovery limits |                                                      |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1412926**

Date Reported: **1/16/2015**

**CLIENT:** Navajo Refining Company

**Client Sample ID:** WW-South

**Project:** Lovington Lea Refining

**Collection Date:** 12/17/2014 2:50:00 PM

**Lab ID:** 1412926-002

**Matrix:** AQUEOUS

**Received Date:** 12/18/2014 9:15:00 AM

| Analyses                        | Result | RL   | Qual | Units | DF | Date Analyzed | Batch               |
|---------------------------------|--------|------|------|-------|----|---------------|---------------------|
| <b>EPA 8270D: SEMIVOLATILES</b> |        |      |      |       |    |               | Analyst: <b>SUB</b> |
| 1,1-Biphenyl                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Atrazine                        | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzaldehyde                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Caprolactam                     | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 1,2,4-Trichlorobenzene          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 1,2-Dichlorobenzene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 1,2-Diphenylhydrazine           | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 1,3-Dichlorobenzene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Acetophenone                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 1,4-Dichlorobenzene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 1-Methylnaphthalene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,3,4,6-Tetrachlorophenol       | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,3,5,6-Tetrachlorophenol       | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,4,5-Trichlorophenol           | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,4,6-Trichlorophenol           | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,4-Dichlorophenol              | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,4-Dimethylphenol              | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,4-Dinitrophenol               | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,4-Dinitrotoluene              | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,6-Dinitrotoluene              | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2-Chloronaphthalene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2-Chlorophenol                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2-Methylnaphthalene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2-Methylphenol                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2-Nitroaniline                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2-Nitrophenol                   | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 3,3'-Dichlorobenzidine          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 3+4-Methylphenol                | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 3-Nitroaniline                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4,6-Dinitro-2-methylphenol      | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4-Bromophenyl phenyl ether      | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4-Chloro-3-methylphenol         | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4-Chloroaniline                 | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4-Chlorophenyl phenyl ether     | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4-Nitroaniline                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4-Nitrophenol                   | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Acenaphthene                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Acenaphthylene                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Aniline                         | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |                                                   |                                                      |
|--------------------|---------------------------------------------------|------------------------------------------------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    |
|                    | E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |
|                    | J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               |
|                    | O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
|                    | R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
|                    | S Spike Recovery outside accepted recovery limits |                                                      |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1412926**

Date Reported: **1/16/2015**

**CLIENT:** Navajo Refining Company

**Client Sample ID:** WW-South

**Project:** Lovington Lea Refining

**Collection Date:** 12/17/2014 2:50:00 PM

**Lab ID:** 1412926-002

**Matrix:** AQUEOUS

**Received Date:** 12/18/2014 9:15:00 AM

| Analyses                        | Result | RL   | Qual | Units | DF | Date Analyzed | Batch               |
|---------------------------------|--------|------|------|-------|----|---------------|---------------------|
| <b>EPA 8270D: SEMIVOLATILES</b> |        |      |      |       |    |               | Analyst: <b>SUB</b> |
| Anthracene                      | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzidine                       | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzo(g,h,i)perylene            | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benz(a)anthracene               | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzo(a)pyrene                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzo(b)fluoranthene            | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzo(k)fluoranthene            | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzyl alcohol                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Bis(2-chloroethoxy)methane      | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Bis(2-chloroethyl)ether         | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Bis(2-chloroisopropyl)ether     | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Bis(2-ethylhexyl)phthalate      | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Butyl benzyl phthalate          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Carbazole                       | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Chrysene                        | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Dibenz(a,h)anthracene           | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Dibenzofuran                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Diethyl phthalate               | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Dimethyl phthalate              | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Di-n-butyl phthalate            | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Di-n-octyl phthalate            | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Fluoranthene                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Fluorene                        | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Hexachlorobenzene               | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Hexachlorobutadiene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Hexachlorocyclopentadiene       | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Hexachloroethane                | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Indeno(1,2,3-cd)pyrene          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Isophorone                      | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Naphthalene                     | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Nitrobenzene                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| N-Nitrosodimethylamine          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| N-Nitrosodi-n-propylamine       | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| N-Nitrosodiphenylamine          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Pentachlorophenol               | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Phenanthrene                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Phenol                          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Pyrene                          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Pyridine                        | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |   |                                                 |    |                                                    |
|--------------------|---|-------------------------------------------------|----|----------------------------------------------------|
| <b>Qualifiers:</b> | * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    |
|                    | E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |
|                    | J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |
|                    | O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |
|                    | R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |
|                    | S | Spike Recovery outside accepted recovery limits |    |                                                    |



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1412926**

Date Reported: 1/16/2015

**CLIENT:** Navajo Refining Company

**Client Sample ID:** WW-South

**Project:** Lovington Lea Refining

**Collection Date:** 12/17/2014 2:50:00 PM

**Lab ID:** 1412926-002

**Matrix:** AQUEOUS

**Received Date:** 12/18/2014 9:15:00 AM

| Analyses                             | Result  | RL      | Qual | Units | DF | Date Analyzed | Batch               |
|--------------------------------------|---------|---------|------|-------|----|---------------|---------------------|
| <b>EPA 8270D: SEMIVOLATILES</b>      |         |         |      |       |    |               | Analyst: <b>SUB</b> |
| Surr: 2,4,6-Tribromophenol           | 102     | 53-122  |      | %REC  | 1  | 1/1/2015      | R23640              |
| Surr: 2-Fluorobiphenyl               | 106     | 12-116  |      | %REC  | 1  | 1/1/2015      | R23640              |
| Surr: 2-Fluorophenol                 | 81.4    | 10-139  |      | %REC  | 1  | 1/1/2015      | R23640              |
| Surr: Nitrobenzene-d5                | 98.0    | 68-118  |      | %REC  | 1  | 1/1/2015      | R23640              |
| Surr: Phenol-d5                      | 86.2    | 28-154  |      | %REC  | 1  | 1/1/2015      | R23640              |
| Surr: Terphenyl-d14                  | 86.4    | 20-137  |      | %REC  | 1  | 1/1/2015      | R23640              |
| <b>EPA METHOD 6020: DISSOLVED</b>    |         |         |      |       |    |               | Analyst: <b>SUB</b> |
| Aluminum                             | ND      | 0.0100  |      | mg/L  | 1  | 1/7/2015      | R23667              |
| Arsenic                              | 0.00431 | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Barium                               | 0.125   | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Boron                                | 0.159   | 0.0100  |      | mg/L  | 1  | 1/8/2015      | R23667              |
| Cadmium                              | ND      | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Calcium                              | 151     | 0.100   |      | mg/L  | 1  | 1/6/2015      | R23667              |
| Chromium                             | 0.00178 | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Cobalt                               | ND      | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Copper                               | 0.00128 | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Iron                                 | 0.0277  | 0.0100  |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Lead                                 | ND      | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Magnesium                            | 19.0    | 0.0100  |      | mg/L  | 1  | 1/6/2015      | R23667              |
| Manganese                            | 0.00422 | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Molybdenum                           | 0.00242 | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Nickel                               | ND      | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Potassium                            | 2.82    | 0.100   |      | mg/L  | 1  | 1/6/2015      | R23667              |
| Selenium                             | 0.00387 | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Silver                               | ND      | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Sodium                               | 113     | 0.100   |      | mg/L  | 1  | 1/6/2015      | R23667              |
| Uranium                              | 0.00227 | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Zinc                                 | 0.0163  | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| <b>EPA 6020: METALS-TOTAL SUBBED</b> |         |         |      |       |    |               | Analyst: <b>SUB</b> |
| Aluminum                             | ND      | 0.010   |      | mg/L  | 1  | 1/7/2015      | R23657              |
| Barium                               | 0.14    | 0.0010  |      | mg/L  | 1  | 12/31/2014    | R23657              |
| Boron                                | 0.15    | 0.010   |      | mg/L  | 1  | 1/8/2015      | R23657              |
| Cadmium                              | ND      | 0.0010  |      | mg/L  | 1  | 12/31/2014    | R23657              |
| Calcium                              | 140     | 0.10    |      | mg/L  | 1  | 1/6/2015      | R23657              |
| Cobalt                               | ND      | 0.0010  |      | mg/L  | 1  | 12/31/2014    | R23657              |
| Copper                               | ND      | 0.0010  |      | mg/L  | 1  | 12/31/2014    | R23657              |
| Iron                                 | 0.024   | 0.010   |      | mg/L  | 1  | 12/31/2014    | R23657              |
| Lead                                 | ND      | 0.0010  |      | mg/L  | 1  | 1/7/2015      | R23657              |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |                                                   |                                                      |
|--------------------|---------------------------------------------------|------------------------------------------------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    |
|                    | E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |
|                    | J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               |
|                    | O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
|                    | R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
|                    | S Spike Recovery outside accepted recovery limits |                                                      |



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1412926**

Date Reported: **1/16/2015**

**CLIENT:** Navajo Refining Company

**Client Sample ID:** WW-South

**Project:** Lovington Lea Refining

**Collection Date:** 12/17/2014 2:50:00 PM

**Lab ID:** 1412926-002

**Matrix:** AQUEOUS

**Received Date:** 12/18/2014 9:15:00 AM

| Analyses                             | Result | RL     | Qual | Units      | DF | Date Analyzed         | Batch               |
|--------------------------------------|--------|--------|------|------------|----|-----------------------|---------------------|
| <b>EPA 6020: METALS-TOTAL SUBBED</b> |        |        |      |            |    |                       | Analyst: <b>SUB</b> |
| Magnesium                            | 22     | 0.10   |      | mg/L       | 1  | 1/6/2015              | R23657              |
| Manganese                            | 0.0046 | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Molybdenum                           | 0.0023 | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Nickel                               | ND     | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Potassium                            | 3.2    | 0.10   |      | mg/L       | 1  | 1/6/2015              | R23657              |
| Silver                               | ND     | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Sodium                               | 110    | 0.10   |      | mg/L       | 1  | 1/6/2015              | R23657              |
| Zinc                                 | 0.0071 | 0.0010 |      | mg/L       | 1  | 1/7/2015              | R23657              |
| Arsenic                              | 0.0043 | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Chromium                             | 0.0018 | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Selenium                             | 0.0038 | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Uranium                              | 0.0023 | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| <b>SM2320B: ALKALINITY</b>           |        |        |      |            |    |                       | Analyst: <b>JRR</b> |
| Bicarbonate (As CaCO3)               | 180    | 20     |      | mg/L CaCO3 | 1  | 12/19/2014 1:50:23 PM | R23288              |
| Carbonate (As CaCO3)                 | ND     | 2.0    |      | mg/L CaCO3 | 1  | 12/19/2014 1:50:23 PM | R23288              |
| Total Alkalinity (as CaCO3)          | 180    | 20     |      | mg/L CaCO3 | 1  | 12/19/2014 1:50:23 PM | R23288              |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |   |                                                 |    |                                                    |
|--------------------|---|-------------------------------------------------|----|----------------------------------------------------|
| <b>Qualifiers:</b> | * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    |
|                    | E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |
|                    | J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |
|                    | O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |
|                    | R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |
|                    | S | Spike Recovery outside accepted recovery limits |    |                                                    |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1412926**

Date Reported: **1/16/2015**

**CLIENT:** Navajo Refining Company

**Client Sample ID:** WW-East

**Project:** Lovington Lea Refining

**Collection Date:** 12/17/2014 4:00:00 PM

**Lab ID:** 1412926-003

**Matrix:** AQUEOUS

**Received Date:** 12/18/2014 9:15:00 AM

| Analyses                           | Result | RL      | Qual | Units | DF | Date Analyzed         | Batch                |
|------------------------------------|--------|---------|------|-------|----|-----------------------|----------------------|
| <b>EPA METHOD 300.0: ANIONS</b>    |        |         |      |       |    |                       | Analyst: <b>Igp</b>  |
| Fluoride                           | 0.90   | 0.10    |      | mg/L  | 1  | 12/19/2014 4:39:46 AM | R23255               |
| Chloride                           | 120    | 10      |      | mg/L  | 20 | 12/19/2014 4:52:11 AM | R23255               |
| Nitrogen, Nitrite (As N)           | ND     | 0.10    |      | mg/L  | 1  | 12/19/2014 4:39:46 AM | R23255               |
| Nitrogen, Nitrate (As N)           | 2.7    | 0.10    |      | mg/L  | 1  | 12/19/2014 4:39:46 AM | R23255               |
| Sulfate                            | 73     | 10      |      | mg/L  | 20 | 12/19/2014 4:52:11 AM | R23255               |
| <b>EPA METHOD 7470: MERCURY</b>    |        |         |      |       |    |                       | Analyst: <b>MMD</b>  |
| Mercury                            | ND     | 0.00020 |      | mg/L  | 1  | 12/31/2014 2:20:44 PM | 17040                |
| <b>EPA METHOD 8260B: VOLATILES</b> |        |         |      |       |    |                       | Analyst: <b>cadg</b> |
| Benzene                            | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Toluene                            | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Ethylbenzene                       | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Methyl tert-butyl ether (MTBE)     | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 1,2,4-Trimethylbenzene             | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 1,3,5-Trimethylbenzene             | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 1,2-Dichloroethane (EDC)           | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 1,2-Dibromoethane (EDB)            | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Naphthalene                        | ND     | 2.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 1-Methylnaphthalene                | ND     | 4.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 2-Methylnaphthalene                | ND     | 4.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Acetone                            | ND     | 10      |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Bromobenzene                       | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Bromodichloromethane               | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Bromoform                          | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Bromomethane                       | ND     | 3.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 2-Butanone                         | ND     | 10      |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Carbon disulfide                   | ND     | 10      |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Carbon Tetrachloride               | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Chlorobenzene                      | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Chloroethane                       | ND     | 2.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Chloroform                         | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Chloromethane                      | ND     | 3.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 2-Chlorotoluene                    | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 4-Chlorotoluene                    | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| cis-1,2-DCE                        | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| cis-1,3-Dichloropropene            | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 1,2-Dibromo-3-chloropropane        | ND     | 2.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Dibromochloromethane               | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Dibromomethane                     | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |                                                   |                                                      |
|--------------------|---------------------------------------------------|------------------------------------------------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    |
|                    | E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |
|                    | J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               |
|                    | O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
|                    | R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
|                    | S Spike Recovery outside accepted recovery limits |                                                      |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1412926**

Date Reported: 1/16/2015

**CLIENT:** Navajo Refining Company

**Client Sample ID:** WW-East

**Project:** Lovington Lea Refining

**Collection Date:** 12/17/2014 4:00:00 PM

**Lab ID:** 1412926-003

**Matrix:** AQUEOUS

**Received Date:** 12/18/2014 9:15:00 AM

| Analyses                           | Result | RL     | Qual | Units | DF | Date Analyzed         | Batch                |
|------------------------------------|--------|--------|------|-------|----|-----------------------|----------------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |        |      |       |    |                       | Analyst: <b>cadg</b> |
| 1,2-Dichlorobenzene                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 1,3-Dichlorobenzene                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 1,4-Dichlorobenzene                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Dichlorodifluoromethane            | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 1,1-Dichloroethane                 | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 1,1-Dichloroethene                 | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 1,2-Dichloropropane                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 1,3-Dichloropropane                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 2,2-Dichloropropane                | ND     | 2.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 1,1-Dichloropropene                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Hexachlorobutadiene                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 2-Hexanone                         | ND     | 10     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Isopropylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 4-Isopropyltoluene                 | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 4-Methyl-2-pentanone               | ND     | 10     |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Methylene Chloride                 | ND     | 3.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| n-Butylbenzene                     | ND     | 3.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| n-Propylbenzene                    | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| sec-Butylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Styrene                            | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| tert-Butylbenzene                  | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 1,1,1,2-Tetrachloroethane          | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 1,1,2,2-Tetrachloroethane          | ND     | 2.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Tetrachloroethene (PCE)            | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| trans-1,2-DCE                      | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| trans-1,3-Dichloropropene          | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 1,2,3-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 1,2,4-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 1,1,1-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 1,1,2-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Trichloroethene (TCE)              | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Trichlorofluoromethane             | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| 1,2,3-Trichloropropane             | ND     | 2.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Vinyl chloride                     | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Xylenes, Total                     | ND     | 1.5    |      | µg/L  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Surr: 1,2-Dichloroethane-d4        | 79.3   | 70-130 |      | %REC  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Surr: 4-Bromofluorobenzene         | 81.6   | 70-130 |      | %REC  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Surr: Dibromofluoromethane         | 86.0   | 70-130 |      | %REC  | 1  | 12/29/2014 2:11:15 PM | R23401               |
| Surr: Toluene-d8                   | 89.9   | 70-130 |      | %REC  | 1  | 12/29/2014 2:11:15 PM | R23401               |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |                                                   |                                                      |
|--------------------|---------------------------------------------------|------------------------------------------------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    |
|                    | E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |
|                    | J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               |
|                    | O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
|                    | R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
|                    | S Spike Recovery outside accepted recovery limits |                                                      |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1412926**

Date Reported: **1/16/2015**

**CLIENT:** Navajo Refining Company

**Client Sample ID:** WW-East

**Project:** Lovington Lea Refining

**Collection Date:** 12/17/2014 4:00:00 PM

**Lab ID:** 1412926-003

**Matrix:** AQUEOUS

**Received Date:** 12/18/2014 9:15:00 AM

| Analyses                        | Result | RL   | Qual | Units | DF | Date Analyzed | Batch               |
|---------------------------------|--------|------|------|-------|----|---------------|---------------------|
| <b>EPA 8270D: SEMIVOLATILES</b> |        |      |      |       |    |               | Analyst: <b>SUB</b> |
| 1,1-Biphenyl                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Atrazine                        | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzaldehyde                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Caprolactam                     | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 1,2,4-Trichlorobenzene          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 1,2-Dichlorobenzene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 1,2-Diphenylhydrazine           | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 1,3-Dichlorobenzene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Acetophenone                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 1,4-Dichlorobenzene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 1-Methylnaphthalene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,3,4,6-Tetrachlorophenol       | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,3,5,6-Tetrachlorophenol       | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,4,5-Trichlorophenol           | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,4,6-Trichlorophenol           | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,4-Dichlorophenol              | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,4-Dimethylphenol              | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,4-Dinitrophenol               | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,4-Dinitrotoluene              | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,6-Dinitrotoluene              | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2-Chloronaphthalene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2-Chlorophenol                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2-Methylnaphthalene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2-Methylphenol                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2-Nitroaniline                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2-Nitrophenol                   | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 3,3'-Dichlorobenzidine          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 3+4-Methylphenol                | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 3-Nitroaniline                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4,6-Dinitro-2-methylphenol      | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4-Bromophenyl phenyl ether      | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4-Chloro-3-methylphenol         | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4-Chloroaniline                 | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4-Chlorophenyl phenyl ether     | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4-Nitroaniline                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4-Nitrophenol                   | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Acenaphthene                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Acenaphthylene                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Aniline                         | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |                                                   |                                                      |
|--------------------|---------------------------------------------------|------------------------------------------------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    |
|                    | E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |
|                    | J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               |
|                    | O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
|                    | R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
|                    | S Spike Recovery outside accepted recovery limits |                                                      |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1412926**

Date Reported: **1/16/2015**

**CLIENT:** Navajo Refining Company

**Client Sample ID:** WW-East

**Project:** Lovington Lea Refining

**Collection Date:** 12/17/2014 4:00:00 PM

**Lab ID:** 1412926-003

**Matrix:** AQUEOUS

**Received Date:** 12/18/2014 9:15:00 AM

| Analyses                        | Result | RL   | Qual | Units | DF | Date Analyzed | Batch               |
|---------------------------------|--------|------|------|-------|----|---------------|---------------------|
| <b>EPA 8270D: SEMIVOLATILES</b> |        |      |      |       |    |               | Analyst: <b>SUB</b> |
| Anthracene                      | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzidine                       | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzo(g,h,i)perylene            | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benz(a)anthracene               | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzo(a)pyrene                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzo(b)fluoranthene            | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzo(k)fluoranthene            | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzyl alcohol                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Bis(2-chloroethoxy)methane      | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Bis(2-chloroethyl)ether         | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Bis(2-chloroisopropyl)ether     | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Bis(2-ethylhexyl)phthalate      | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Butyl benzyl phthalate          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Carbazole                       | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Chrysene                        | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Dibenz(a,h)anthracene           | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Dibenzofuran                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Diethyl phthalate               | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Dimethyl phthalate              | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Di-n-butyl phthalate            | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Di-n-octyl phthalate            | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Fluoranthene                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Fluorene                        | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Hexachlorobenzene               | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Hexachlorobutadiene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Hexachlorocyclopentadiene       | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Hexachloroethane                | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Indeno(1,2,3-cd)pyrene          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Isophorone                      | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Naphthalene                     | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Nitrobenzene                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| N-Nitrosodimethylamine          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| N-Nitrosodi-n-propylamine       | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| N-Nitrosodiphenylamine          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Pentachlorophenol               | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Phenanthrene                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Phenol                          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Pyrene                          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Pyridine                        | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |   |                                                 |    |                                                    |               |
|--------------------|---|-------------------------------------------------|----|----------------------------------------------------|---------------|
| <b>Qualifiers:</b> | * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    | Page 16 of 40 |
|                    | E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |               |
|                    | J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |               |
|                    | O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |               |
|                    | R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |               |
|                    | S | Spike Recovery outside accepted recovery limits |    |                                                    |               |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1412926**

Date Reported: 1/16/2015

**CLIENT:** Navajo Refining Company

**Client Sample ID:** WW-East

**Project:** Lovington Lea Refining

**Collection Date:** 12/17/2014 4:00:00 PM

**Lab ID:** 1412926-003

**Matrix:** AQUEOUS

**Received Date:** 12/18/2014 9:15:00 AM

| Analyses                             | Result  | RL      | Qual | Units | DF | Date Analyzed | Batch               |
|--------------------------------------|---------|---------|------|-------|----|---------------|---------------------|
| <b>EPA 8270D: SEMIVOLATILES</b>      |         |         |      |       |    |               | Analyst: <b>SUB</b> |
| Surr: 2,4,6-Tribromophenol           | 94.6    | 53-122  |      | %REC  | 1  | 1/1/2015      | R23640              |
| Surr: 2-Fluorobiphenyl               | 101     | 12-116  |      | %REC  | 1  | 1/1/2015      | R23640              |
| Surr: 2-Fluorophenol                 | 78.6    | 10-139  |      | %REC  | 1  | 1/1/2015      | R23640              |
| Surr: Nitrobenzene-d5                | 92.8    | 68-118  |      | %REC  | 1  | 1/1/2015      | R23640              |
| Surr: Phenol-d5                      | 81.6    | 28-154  |      | %REC  | 1  | 1/1/2015      | R23640              |
| Surr: Terphenyl-d14                  | 82.0    | 20-137  |      | %REC  | 1  | 1/1/2015      | R23640              |
| <b>EPA METHOD 6020: DISSOLVED</b>    |         |         |      |       |    |               | Analyst: <b>SUB</b> |
| Aluminum                             | ND      | 0.0100  |      | mg/L  | 1  | 1/7/2015      | R23667              |
| Arsenic                              | 0.00436 | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Barium                               | 0.0905  | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Boron                                | 0.120   | 0.0100  |      | mg/L  | 1  | 1/8/2015      | R23667              |
| Cadmium                              | ND      | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Calcium                              | 101     | 0.100   |      | mg/L  | 1  | 1/6/2015      | R23667              |
| Chromium                             | 0.0112  | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Cobalt                               | ND      | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Copper                               | ND      | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Iron                                 | 0.143   | 0.0100  |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Lead                                 | ND      | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Magnesium                            | 12.9    | 0.0100  |      | mg/L  | 1  | 1/6/2015      | R23667              |
| Manganese                            | 0.00430 | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Molybdenum                           | 0.00241 | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Nickel                               | ND      | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Potassium                            | 1.81    | 0.100   |      | mg/L  | 1  | 1/6/2015      | R23667              |
| Selenium                             | 0.00395 | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Silver                               | ND      | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Sodium                               | 45.4    | 0.100   |      | mg/L  | 1  | 1/6/2015      | R23667              |
| Uranium                              | 0.00181 | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Zinc                                 | 0.0147  | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| <b>EPA 6020: METALS-TOTAL SUBBED</b> |         |         |      |       |    |               | Analyst: <b>SUB</b> |
| Aluminum                             | ND      | 0.010   |      | mg/L  | 1  | 1/7/2015      | R23657              |
| Barium                               | 0.10    | 0.0010  |      | mg/L  | 1  | 12/31/2014    | R23657              |
| Boron                                | 0.12    | 0.010   |      | mg/L  | 1  | 1/8/2015      | R23657              |
| Cadmium                              | ND      | 0.0010  |      | mg/L  | 1  | 12/31/2014    | R23657              |
| Calcium                              | 91      | 0.10    |      | mg/L  | 1  | 1/6/2015      | R23657              |
| Cobalt                               | ND      | 0.0010  |      | mg/L  | 1  | 12/31/2014    | R23657              |
| Copper                               | 0.0073  | 0.0010  |      | mg/L  | 1  | 12/31/2014    | R23657              |
| Iron                                 | 0.39    | 0.010   |      | mg/L  | 1  | 12/31/2014    | R23657              |
| Lead                                 | 0.0017  | 0.0010  |      | mg/L  | 1  | 1/7/2015      | R23657              |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |                                                   |                                                      |               |
|--------------------|---------------------------------------------------|------------------------------------------------------|---------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    | Page 17 of 40 |
|                    | E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |               |
|                    | J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               |               |
|                    | O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |               |
|                    | R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |               |
|                    | S Spike Recovery outside accepted recovery limits |                                                      |               |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1412926**

Date Reported: **1/16/2015**

**CLIENT:** Navajo Refining Company

**Client Sample ID:** WW-East

**Project:** Lovington Lea Refining

**Collection Date:** 12/17/2014 4:00:00 PM

**Lab ID:** 1412926-003

**Matrix:** AQUEOUS

**Received Date:** 12/18/2014 9:15:00 AM

| Analyses                             | Result | RL     | Qual | Units      | DF | Date Analyzed         | Batch               |
|--------------------------------------|--------|--------|------|------------|----|-----------------------|---------------------|
| <b>EPA 6020: METALS-TOTAL SUBBED</b> |        |        |      |            |    |                       | Analyst: <b>SUB</b> |
| Magnesium                            | ND     | 0.10   |      | mg/L       | 1  | 1/6/2015              | R23657              |
| Manganese                            | 0.0063 | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Molybdenum                           | 0.0024 | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Nickel                               | ND     | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Potassium                            | 14     | 0.10   |      | mg/L       | 1  | 1/6/2015              | R23657              |
| Silver                               | ND     | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Sodium                               | 40     | 0.10   |      | mg/L       | 1  | 1/6/2015              | R23657              |
| Zinc                                 | 0.037  | 0.0010 |      | mg/L       | 1  | 1/7/2015              | R23657              |
| Arsenic                              | 0.0044 | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Chromium                             | 0.012  | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Selenium                             | 0.0038 | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Uranium                              | 0.0019 | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| <b>SM2320B: ALKALINITY</b>           |        |        |      |            |    |                       | Analyst: <b>JRR</b> |
| Bicarbonate (As CaCO3)               | 170    | 20     |      | mg/L CaCO3 | 1  | 12/19/2014 2:00:46 PM | R23288              |
| Carbonate (As CaCO3)                 | ND     | 2.0    |      | mg/L CaCO3 | 1  | 12/19/2014 2:00:46 PM | R23288              |
| Total Alkalinity (as CaCO3)          | 170    | 20     |      | mg/L CaCO3 | 1  | 12/19/2014 2:00:46 PM | R23288              |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |   |                                                 |    |                                                    |               |
|--------------------|---|-------------------------------------------------|----|----------------------------------------------------|---------------|
| <b>Qualifiers:</b> | * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    | Page 18 of 40 |
|                    | E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |               |
|                    | J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |               |
|                    | O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |               |
|                    | R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |               |
|                    | S | Spike Recovery outside accepted recovery limits |    |                                                    |               |



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1412926**

Date Reported: 1/16/2015

**CLIENT:** Navajo Refining Company

**Client Sample ID:** Dup-1

**Project:** Lovington Lea Refining

**Collection Date:** 12/17/2014

**Lab ID:** 1412926-004

**Matrix:** AQUEOUS

**Received Date:** 12/18/2014 9:15:00 AM

| Analyses                           | Result | RL      | Qual | Units | DF | Date Analyzed         | Batch                |
|------------------------------------|--------|---------|------|-------|----|-----------------------|----------------------|
| <b>EPA METHOD 300.0: ANIONS</b>    |        |         |      |       |    |                       | Analyst: <b>lgp</b>  |
| Fluoride                           | 0.63   | 0.10    |      | mg/L  | 1  | 12/19/2014 5:04:36 AM | R23255               |
| Chloride                           | 390    | 10      | *    | mg/L  | 20 | 12/19/2014 5:41:51 AM | R23255               |
| Nitrogen, Nitrite (As N)           | ND     | 0.10    |      | mg/L  | 1  | 12/19/2014 5:04:36 AM | R23255               |
| Nitrogen, Nitrate (As N)           | 3.2    | 0.10    |      | mg/L  | 1  | 12/19/2014 5:04:36 AM | R23255               |
| Sulfate                            | 90     | 10      |      | mg/L  | 20 | 12/19/2014 5:41:51 AM | R23255               |
| <b>EPA METHOD 7470: MERCURY</b>    |        |         |      |       |    |                       | Analyst: <b>MMD</b>  |
| Mercury                            | ND     | 0.00020 |      | mg/L  | 1  | 12/31/2014 2:22:34 PM | 17040                |
| <b>EPA METHOD 8260B: VOLATILES</b> |        |         |      |       |    |                       | Analyst: <b>cadg</b> |
| Benzene                            | 2.3    | 1.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Toluene                            | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Ethylbenzene                       | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Methyl tert-butyl ether (MTBE)     | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 1,2,4-Trimethylbenzene             | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 1,3,5-Trimethylbenzene             | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 1,2-Dichloroethane (EDC)           | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 1,2-Dibromoethane (EDB)            | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Naphthalene                        | ND     | 2.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 1-Methylnaphthalene                | ND     | 4.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 2-Methylnaphthalene                | ND     | 4.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Acetone                            | ND     | 10      |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Bromobenzene                       | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Bromodichloromethane               | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Bromoform                          | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Bromomethane                       | ND     | 3.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 2-Butanone                         | ND     | 10      |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Carbon disulfide                   | ND     | 10      |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Carbon Tetrachloride               | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Chlorobenzene                      | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Chloroethane                       | ND     | 2.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Chloroform                         | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Chloromethane                      | ND     | 3.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 2-Chlorotoluene                    | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 4-Chlorotoluene                    | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| cis-1,2-DCE                        | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| cis-1,3-Dichloropropene            | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 1,2-Dibromo-3-chloropropane        | ND     | 2.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Dibromochloromethane               | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Dibromomethane                     | ND     | 1.0     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |   |                                                 |    |                                                    |
|--------------------|---|-------------------------------------------------|----|----------------------------------------------------|
| <b>Qualifiers:</b> | * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    |
|                    | E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |
|                    | J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |
|                    | O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |
|                    | R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |
|                    | S | Spike Recovery outside accepted recovery limits |    |                                                    |



# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1412926**

Date Reported: 1/16/2015

**CLIENT:** Navajo Refining Company

**Client Sample ID:** Dup-1

**Project:** Lovington Lea Refining

**Collection Date:** 12/17/2014

**Lab ID:** 1412926-004

**Matrix:** AQUEOUS

**Received Date:** 12/18/2014 9:15:00 AM

| Analyses                           | Result | RL     | Qual | Units | DF | Date Analyzed         | Batch                |
|------------------------------------|--------|--------|------|-------|----|-----------------------|----------------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |        |      |       |    |                       | Analyst: <b>cadg</b> |
| 1,2-Dichlorobenzene                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 1,3-Dichlorobenzene                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 1,4-Dichlorobenzene                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Dichlorodifluoromethane            | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 1,1-Dichloroethane                 | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 1,1-Dichloroethene                 | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 1,2-Dichloropropane                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 1,3-Dichloropropane                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 2,2-Dichloropropane                | ND     | 2.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 1,1-Dichloropropene                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Hexachlorobutadiene                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 2-Hexanone                         | ND     | 10     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Isopropylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 4-Isopropyltoluene                 | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 4-Methyl-2-pentanone               | ND     | 10     |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Methylene Chloride                 | ND     | 3.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| n-Butylbenzene                     | ND     | 3.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| n-Propylbenzene                    | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| sec-Butylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Styrene                            | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| tert-Butylbenzene                  | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 1,1,1,2-Tetrachloroethane          | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 1,1,2,2-Tetrachloroethane          | ND     | 2.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Tetrachloroethene (PCE)            | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| trans-1,2-DCE                      | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| trans-1,3-Dichloropropene          | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 1,2,3-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 1,2,4-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 1,1,1-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 1,1,2-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Trichloroethene (TCE)              | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Trichlorofluoromethane             | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| 1,2,3-Trichloropropane             | ND     | 2.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Vinyl chloride                     | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Xylenes, Total                     | ND     | 1.5    |      | µg/L  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Surr: 1,2-Dichloroethane-d4        | 76.5   | 70-130 |      | %REC  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Surr: 4-Bromofluorobenzene         | 84.0   | 70-130 |      | %REC  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Surr: Dibromofluoromethane         | 86.1   | 70-130 |      | %REC  | 1  | 12/29/2014 2:43:33 PM | R23401               |
| Surr: Toluene-d8                   | 88.3   | 70-130 |      | %REC  | 1  | 12/29/2014 2:43:33 PM | R23401               |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |                                                   |                                                      |
|--------------------|---------------------------------------------------|------------------------------------------------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    |
|                    | E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |
|                    | J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               |
|                    | O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
|                    | R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
|                    | S Spike Recovery outside accepted recovery limits |                                                      |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1412926**

Date Reported: **1/16/2015**

**CLIENT:** Navajo Refining Company

**Client Sample ID:** Dup-1

**Project:** Lovington Lea Refining

**Collection Date:** 12/17/2014

**Lab ID:** 1412926-004

**Matrix:** AQUEOUS

**Received Date:** 12/18/2014 9:15:00 AM

| Analyses                        | Result | RL   | Qual | Units | DF | Date Analyzed | Batch               |
|---------------------------------|--------|------|------|-------|----|---------------|---------------------|
| <b>EPA 8270D: SEMIVOLATILES</b> |        |      |      |       |    |               | Analyst: <b>SUB</b> |
| 1,1-Biphenyl                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Atrazine                        | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzaldehyde                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Caprolactam                     | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 1,2,4-Trichlorobenzene          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 1,2-Dichlorobenzene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 1,2-Diphenylhydrazine           | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 1,3-Dichlorobenzene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Acetophenone                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 1,4-Dichlorobenzene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 1-Methylnaphthalene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,3,4,6-Tetrachlorophenol       | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,3,5,6-Tetrachlorophenol       | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,4,5-Trichlorophenol           | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,4,6-Trichlorophenol           | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,4-Dichlorophenol              | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,4-Dimethylphenol              | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,4-Dinitrophenol               | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,4-Dinitrotoluene              | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2,6-Dinitrotoluene              | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2-Chloronaphthalene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2-Chlorophenol                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2-Methylnaphthalene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2-Methylphenol                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2-Nitroaniline                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 2-Nitrophenol                   | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 3,3'-Dichlorobenzidine          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 3+4-Methylphenol                | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 3-Nitroaniline                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4,6-Dinitro-2-methylphenol      | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4-Bromophenyl phenyl ether      | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4-Chloro-3-methylphenol         | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4-Chloroaniline                 | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4-Chlorophenyl phenyl ether     | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4-Nitroaniline                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| 4-Nitrophenol                   | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Acenaphthene                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Acenaphthylene                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Aniline                         | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |                                                   |                                                      |
|--------------------|---------------------------------------------------|------------------------------------------------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    |
|                    | E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |
|                    | J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               |
|                    | O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
|                    | R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
|                    | S Spike Recovery outside accepted recovery limits |                                                      |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1412926**

Date Reported: **1/16/2015**

**CLIENT:** Navajo Refining Company

**Client Sample ID:** Dup-1

**Project:** Lovington Lea Refining

**Collection Date:** 12/17/2014

**Lab ID:** 1412926-004

**Matrix:** AQUEOUS

**Received Date:** 12/18/2014 9:15:00 AM

| Analyses                        | Result | RL   | Qual | Units | DF | Date Analyzed | Batch               |
|---------------------------------|--------|------|------|-------|----|---------------|---------------------|
| <b>EPA 8270D: SEMIVOLATILES</b> |        |      |      |       |    |               | Analyst: <b>SUB</b> |
| Anthracene                      | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzidine                       | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzo(g,h,i)perylene            | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benz(a)anthracene               | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzo(a)pyrene                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzo(b)fluoranthene            | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzo(k)fluoranthene            | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Benzyl alcohol                  | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Bis(2-chloroethoxy)methane      | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Bis(2-chloroethyl)ether         | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Bis(2-chloroisopropyl)ether     | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Bis(2-ethylhexyl)phthalate      | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Butyl benzyl phthalate          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Carbazole                       | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Chrysene                        | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Dibenz(a,h)anthracene           | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Dibenzofuran                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Diethyl phthalate               | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Dimethyl phthalate              | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Di-n-butyl phthalate            | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Di-n-octyl phthalate            | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Fluoranthene                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Fluorene                        | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Hexachlorobenzene               | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Hexachlorobutadiene             | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Hexachlorocyclopentadiene       | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Hexachloroethane                | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Indeno(1,2,3-cd)pyrene          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Isophorone                      | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Naphthalene                     | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Nitrobenzene                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| N-Nitrosodimethylamine          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| N-Nitrosodi-n-propylamine       | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| N-Nitrosodiphenylamine          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Pentachlorophenol               | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Phenanthrene                    | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Phenol                          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Pyrene                          | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |
| Pyridine                        | ND     | 0.50 |      | µg/L  | 1  | 1/1/2015      | R23640              |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |   |                                                 |    |                                                    |
|--------------------|---|-------------------------------------------------|----|----------------------------------------------------|
| <b>Qualifiers:</b> | * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    |
|                    | E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |
|                    | J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |
|                    | O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |
|                    | R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |
|                    | S | Spike Recovery outside accepted recovery limits |    |                                                    |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1412926**

Date Reported: 1/16/2015

**CLIENT:** Navajo Refining Company

**Client Sample ID:** Dup-1

**Project:** Lovington Lea Refining

**Collection Date:** 12/17/2014

**Lab ID:** 1412926-004

**Matrix:** AQUEOUS

**Received Date:** 12/18/2014 9:15:00 AM

| Analyses                             | Result  | RL      | Qual | Units | DF | Date Analyzed | Batch               |
|--------------------------------------|---------|---------|------|-------|----|---------------|---------------------|
| <b>EPA 8270D: SEMIVOLATILES</b>      |         |         |      |       |    |               | Analyst: <b>SUB</b> |
| Surr: 2,4,6-Tribromophenol           | 94.6    | 53-122  |      | %REC  | 1  | 1/1/2015      | R23640              |
| Surr: 2-Fluorobiphenyl               | 105     | 12-116  |      | %REC  | 1  | 1/1/2015      | R23640              |
| Surr: 2-Fluorophenol                 | 75.2    | 10-139  |      | %REC  | 1  | 1/1/2015      | R23640              |
| Surr: Nitrobenzene-d5                | 95.2    | 68-118  |      | %REC  | 1  | 1/1/2015      | R23640              |
| Surr: Phenol-d5                      | 81.6    | 28-154  |      | %REC  | 1  | 1/1/2015      | R23640              |
| Surr: Terphenyl-d14                  | 90.0    | 20-137  |      | %REC  | 1  | 1/1/2015      | R23640              |
| <b>EPA METHOD 6020: DISSOLVED</b>    |         |         |      |       |    |               | Analyst: <b>SUB</b> |
| Aluminum                             | ND      | 0.0100  |      | mg/L  | 1  | 1/7/2015      | R23667              |
| Arsenic                              | 0.00422 | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Barium                               | 0.126   | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Boron                                | 0.162   | 0.0100  |      | mg/L  | 1  | 1/8/2015      | R23667              |
| Cadmium                              | ND      | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Calcium                              | 160     | 0.100   |      | mg/L  | 1  | 1/6/2015      | R23667              |
| Chromium                             | 0.00179 | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Cobalt                               | ND      | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Copper                               | 0.00136 | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Iron                                 | 0.0226  | 0.0100  |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Lead                                 | ND      | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Magnesium                            | 20.9    | 0.0100  |      | mg/L  | 1  | 1/6/2015      | R23667              |
| Manganese                            | 0.00409 | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Molybdenum                           | 0.00203 | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Nickel                               | ND      | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Potassium                            | 2.97    | 0.100   |      | mg/L  | 1  | 1/6/2015      | R23667              |
| Selenium                             | 0.00359 | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Silver                               | ND      | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Sodium                               | 117     | 0.100   |      | mg/L  | 1  | 1/6/2015      | R23667              |
| Uranium                              | 0.00217 | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| Zinc                                 | 0.0151  | 0.00100 |      | mg/L  | 1  | 12/31/2014    | R23667              |
| <b>EPA 6020: METALS-TOTAL SUBBED</b> |         |         |      |       |    |               | Analyst: <b>SUB</b> |
| Aluminum                             | ND      | 0.010   |      | mg/L  | 1  | 1/7/2015      | R23657              |
| Barium                               | 0.14    | 0.0010  |      | mg/L  | 1  | 12/31/2014    | R23657              |
| Boron                                | 0.15    | 0.010   |      | mg/L  | 1  | 1/8/2015      | R23657              |
| Cadmium                              | ND      | 0.0010  |      | mg/L  | 1  | 12/31/2014    | R23657              |
| Calcium                              | 160     | 0.10    |      | mg/L  | 1  | 1/6/2015      | R23657              |
| Cobalt                               | ND      | 0.0010  |      | mg/L  | 1  | 12/31/2014    | R23657              |
| Copper                               | ND      | 0.0010  |      | mg/L  | 1  | 12/31/2014    | R23657              |
| Iron                                 | 0.032   | 0.010   |      | mg/L  | 1  | 12/31/2014    | R23657              |
| Lead                                 | ND      | 0.0010  |      | mg/L  | 1  | 1/7/2015      | R23657              |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |                                                   |                                                      |
|--------------------|---------------------------------------------------|------------------------------------------------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    |
|                    | E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |
|                    | J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               |
|                    | O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
|                    | R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
|                    | S Spike Recovery outside accepted recovery limits |                                                      |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1412926**

Date Reported: **1/16/2015**

**CLIENT:** Navajo Refining Company

**Client Sample ID:** Dup-1

**Project:** Lovington Lea Refining

**Collection Date:** 12/17/2014

**Lab ID:** 1412926-004

**Matrix:** AQUEOUS

**Received Date:** 12/18/2014 9:15:00 AM

| Analyses                             | Result | RL     | Qual | Units      | DF | Date Analyzed         | Batch               |
|--------------------------------------|--------|--------|------|------------|----|-----------------------|---------------------|
| <b>EPA 6020: METALS-TOTAL SUBBED</b> |        |        |      |            |    |                       | Analyst: <b>SUB</b> |
| Magnesium                            | 22     | 0.10   |      | mg/L       | 1  | 1/6/2015              | R23657              |
| Manganese                            | 0.0044 | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Molybdenum                           | 0.0021 | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Nickel                               | ND     | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Potassium                            | 3.1    | 0.10   |      | mg/L       | 1  | 1/6/2015              | R23657              |
| Silver                               | ND     | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Sodium                               | 120    | 0.10   |      | mg/L       | 1  | 1/6/2015              | R23657              |
| Zinc                                 | 0.0071 | 0.0010 |      | mg/L       | 1  | 1/7/2015              | R23657              |
| Arsenic                              | 0.0044 | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Chromium                             | 0.0017 | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Selenium                             | 0.0035 | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| Uranium                              | 0.0022 | 0.0010 |      | mg/L       | 1  | 12/31/2014            | R23657              |
| <b>SM2320B: ALKALINITY</b>           |        |        |      |            |    |                       | Analyst: <b>JRR</b> |
| Bicarbonate (As CaCO3)               | 180    | 20     |      | mg/L CaCO3 | 1  | 12/19/2014 2:10:59 PM | R23288              |
| Carbonate (As CaCO3)                 | ND     | 2.0    |      | mg/L CaCO3 | 1  | 12/19/2014 2:10:59 PM | R23288              |
| Total Alkalinity (as CaCO3)          | 180    | 20     |      | mg/L CaCO3 | 1  | 12/19/2014 2:10:59 PM | R23288              |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |   |                                                 |    |                                                    |               |
|--------------------|---|-------------------------------------------------|----|----------------------------------------------------|---------------|
| <b>Qualifiers:</b> | * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    | Page 24 of 40 |
|                    | E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |               |
|                    | J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |               |
|                    | O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |               |
|                    | R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |               |
|                    | S | Spike Recovery outside accepted recovery limits |    |                                                    |               |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1412926**

Date Reported: 1/16/2015

**CLIENT:** Navajo Refining Company

**Client Sample ID:** TB-12-17-14-01

**Project:** Lovington Lea Refining

**Collection Date:**

**Lab ID:** 1412926-005

**Matrix:** TRIP BLANK

**Received Date:** 12/18/2014 9:15:00 AM

| Analyses                           | Result | RL  | Qual | Units | DF | Date Analyzed         | Batch                |
|------------------------------------|--------|-----|------|-------|----|-----------------------|----------------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |     |      |       |    |                       | Analyst: <b>cadg</b> |
| Benzene                            | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Toluene                            | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Ethylbenzene                       | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Methyl tert-butyl ether (MTBE)     | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 1,2,4-Trimethylbenzene             | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 1,3,5-Trimethylbenzene             | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 1,2-Dichloroethane (EDC)           | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 1,2-Dibromoethane (EDB)            | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Naphthalene                        | ND     | 2.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 1-Methylnaphthalene                | ND     | 4.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 2-Methylnaphthalene                | ND     | 4.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Acetone                            | ND     | 10  |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Bromobenzene                       | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Bromodichloromethane               | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Bromoform                          | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Bromomethane                       | ND     | 3.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 2-Butanone                         | ND     | 10  |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Carbon disulfide                   | ND     | 10  |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Carbon Tetrachloride               | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Chlorobenzene                      | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Chloroethane                       | ND     | 2.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Chloroform                         | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Chloromethane                      | ND     | 3.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 2-Chlorotoluene                    | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 4-Chlorotoluene                    | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| cis-1,2-DCE                        | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| cis-1,3-Dichloropropene            | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 1,2-Dibromo-3-chloropropane        | ND     | 2.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Dibromochloromethane               | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Dibromomethane                     | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 1,2-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 1,3-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 1,4-Dichlorobenzene                | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Dichlorodifluoromethane            | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 1,1-Dichloroethane                 | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 1,1-Dichloroethene                 | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 1,2-Dichloropropane                | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 1,3-Dichloropropane                | ND     | 1.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 2,2-Dichloropropane                | ND     | 2.0 |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |                                                   |                                                      |
|--------------------|---------------------------------------------------|------------------------------------------------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    |
|                    | E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |
|                    | J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               |
|                    | O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
|                    | R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
|                    | S Spike Recovery outside accepted recovery limits |                                                      |

# Hall Environmental Analysis Laboratory, Inc.

## Analytical Report

Lab Order **1412926**

Date Reported: 1/16/2015

**CLIENT:** Navajo Refining Company

**Client Sample ID:** TB-12-17-14-01

**Project:** Lovington Lea Refining

**Collection Date:**

**Lab ID:** 1412926-005

**Matrix:** TRIP BLANK

**Received Date:** 12/18/2014 9:15:00 AM

| Analyses                           | Result | RL     | Qual | Units | DF | Date Analyzed         | Batch                |
|------------------------------------|--------|--------|------|-------|----|-----------------------|----------------------|
| <b>EPA METHOD 8260B: VOLATILES</b> |        |        |      |       |    |                       | Analyst: <b>cadg</b> |
| 1,1-Dichloropropene                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Hexachlorobutadiene                | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 2-Hexanone                         | ND     | 10     |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Isopropylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 4-Isopropyltoluene                 | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 4-Methyl-2-pentanone               | ND     | 10     |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Methylene Chloride                 | ND     | 3.0    |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| n-Butylbenzene                     | ND     | 3.0    |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| n-Propylbenzene                    | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| sec-Butylbenzene                   | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Styrene                            | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| tert-Butylbenzene                  | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 1,1,1,2-Tetrachloroethane          | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 1,1,2,2-Tetrachloroethane          | ND     | 2.0    |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Tetrachloroethene (PCE)            | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| trans-1,2-DCE                      | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| trans-1,3-Dichloropropene          | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 1,2,3-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 1,2,4-Trichlorobenzene             | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 1,1,1-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 1,1,2-Trichloroethane              | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Trichloroethene (TCE)              | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Trichlorofluoromethane             | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| 1,2,3-Trichloropropane             | ND     | 2.0    |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Vinyl chloride                     | ND     | 1.0    |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Xylenes, Total                     | ND     | 1.5    |      | µg/L  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Surr: 1,2-Dichloroethane-d4        | 67.0   | 70-130 | S    | %REC  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Surr: 4-Bromofluorobenzene         | 80.8   | 70-130 |      | %REC  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Surr: Dibromofluoromethane         | 88.7   | 70-130 |      | %REC  | 1  | 12/29/2014 3:15:52 PM | R23401               |
| Surr: Toluene-d8                   | 85.4   | 70-130 |      | %REC  | 1  | 12/29/2014 3:15:52 PM | R23401               |

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

|                    |                                                   |                                                      |
|--------------------|---------------------------------------------------|------------------------------------------------------|
| <b>Qualifiers:</b> | * Value exceeds Maximum Contaminant Level.        | B Analyte detected in the associated Method Blank    |
|                    | E Value above quantitation range                  | H Holding times for preparation or analysis exceeded |
|                    | J Analyte detected below quantitation limits      | ND Not Detected at the Reporting Limit               |
|                    | O RSD is greater than RSDlimit                    | P Sample pH greater than 2.                          |
|                    | R RPD outside accepted recovery limits            | RL Reporting Detection Limit                         |
|                    | S Spike Recovery outside accepted recovery limits |                                                      |



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1412926

16-Jan-15

Client: Navajo Refining Company

Project: Lovington Lea Refining

|                          |        |                |            |             |                          |          |           |      |          |      |
|--------------------------|--------|----------------|------------|-------------|--------------------------|----------|-----------|------|----------|------|
| Sample ID                | MB     | SampType:      | MBLK       | TestCode:   | EPA Method 300.0: Anions |          |           |      |          |      |
| Client ID:               | PBW    | Batch ID:      | R23255     | RunNo:      | 23255                    |          |           |      |          |      |
| Prep Date:               |        | Analysis Date: | 12/18/2014 | SeqNo:      | 687203                   | Units:   | mg/L      |      |          |      |
| Analyte                  | Result | PQL            | SPK value  | SPK Ref Val | %REC                     | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Fluoride                 | ND     | 0.10           |            |             |                          |          |           |      |          |      |
| Chloride                 | ND     | 0.50           |            |             |                          |          |           |      |          |      |
| Nitrogen, Nitrite (As N) | ND     | 0.10           |            |             |                          |          |           |      |          |      |
| Nitrogen, Nitrate (As N) | ND     | 0.10           |            |             |                          |          |           |      |          |      |
| Sulfate                  | ND     | 0.50           |            |             |                          |          |           |      |          |      |

|                          |        |                |            |             |                          |          |           |      |          |      |
|--------------------------|--------|----------------|------------|-------------|--------------------------|----------|-----------|------|----------|------|
| Sample ID                | LCS    | SampType:      | LCS        | TestCode:   | EPA Method 300.0: Anions |          |           |      |          |      |
| Client ID:               | LCSW   | Batch ID:      | R23255     | RunNo:      | 23255                    |          |           |      |          |      |
| Prep Date:               |        | Analysis Date: | 12/18/2014 | SeqNo:      | 687204                   | Units:   | mg/L      |      |          |      |
| Analyte                  | Result | PQL            | SPK value  | SPK Ref Val | %REC                     | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Fluoride                 | 0.49   | 0.10           | 0.5000     | 0           | 98.9                     | 90       | 110       |      |          |      |
| Chloride                 | 4.7    | 0.50           | 5.000      | 0           | 94.2                     | 90       | 110       |      |          |      |
| Nitrogen, Nitrite (As N) | 0.99   | 0.10           | 1.000      | 0           | 99.3                     | 90       | 110       |      |          |      |
| Nitrogen, Nitrate (As N) | 2.5    | 0.10           | 2.500      | 0           | 99.5                     | 90       | 110       |      |          |      |
| Sulfate                  | 9.8    | 0.50           | 10.00      | 0           | 98.0                     | 90       | 110       |      |          |      |

|                          |                |                |            |             |                          |          |           |      |          |      |
|--------------------------|----------------|----------------|------------|-------------|--------------------------|----------|-----------|------|----------|------|
| Sample ID                | 1412926-004BMS | SampType:      | MS         | TestCode:   | EPA Method 300.0: Anions |          |           |      |          |      |
| Client ID:               | Dup-1          | Batch ID:      | R23255     | RunNo:      | 23255                    |          |           |      |          |      |
| Prep Date:               |                | Analysis Date: | 12/19/2014 | SeqNo:      | 687247                   | Units:   | mg/L      |      |          |      |
| Analyte                  | Result         | PQL            | SPK value  | SPK Ref Val | %REC                     | LowLimit | HighLimit | %RPD | RPDLimit | Qual |
| Fluoride                 | 1.0            | 0.10           | 0.5000     | 0.6310      | 80.8                     | 66.1     | 113       |      |          |      |
| Nitrogen, Nitrite (As N) | 0.66           | 0.10           | 1.000      | 0           | 65.8                     | 66.4     | 111       |      |          | S    |
| Nitrogen, Nitrate (As N) | 5.7            | 0.10           | 2.500      | 3.189       | 101                      | 84       | 109       |      |          |      |

|                          |                 |                |            |             |                          |          |           |        |          |      |
|--------------------------|-----------------|----------------|------------|-------------|--------------------------|----------|-----------|--------|----------|------|
| Sample ID                | 1412926-004BMSD | SampType:      | MSD        | TestCode:   | EPA Method 300.0: Anions |          |           |        |          |      |
| Client ID:               | Dup-1           | Batch ID:      | R23255     | RunNo:      | 23255                    |          |           |        |          |      |
| Prep Date:               |                 | Analysis Date: | 12/19/2014 | SeqNo:      | 687248                   | Units:   | mg/L      |        |          |      |
| Analyte                  | Result          | PQL            | SPK value  | SPK Ref Val | %REC                     | LowLimit | HighLimit | %RPD   | RPDLimit | Qual |
| Fluoride                 | 1.1             | 0.10           | 0.5000     | 0.6310      | 91.2                     | 66.1     | 113       | 4.92   | 20       |      |
| Nitrogen, Nitrite (As N) | 0.66            | 0.10           | 1.000      | 0           | 66.0                     | 66.4     | 111       | 0.243  | 20       | S    |
| Nitrogen, Nitrate (As N) | 5.7             | 0.10           | 2.500      | 3.189       | 101                      | 84       | 109       | 0.0560 | 20       |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1412926

16-Jan-15

Client: Navajo Refining Company

Project: Lovington Lea Refining

|                                |        |                           |           |             |                                       |          |             |      |          |      |
|--------------------------------|--------|---------------------------|-----------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID                      | 5mL rb | SampType: MBLK            |           |             | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID:                     | PBW    | Batch ID: R23401          |           |             | RunNo: 23401                          |          |             |      |          |      |
| Prep Date:                     |        | Analysis Date: 12/29/2014 |           |             | SeqNo: 691421                         |          | Units: µg/L |      |          |      |
| Analyte                        | Result | PQL                       | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene                        | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| Toluene                        | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| Ethylbenzene                   | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| Methyl tert-butyl ether (MTBE) | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| 1,2,4-Trimethylbenzene         | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| 1,3,5-Trimethylbenzene         | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| 1,2-Dichloroethane (EDC)       | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| 1,2-Dibromoethane (EDB)        | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| Naphthalene                    | ND     | 2.0                       |           |             |                                       |          |             |      |          |      |
| 1-Methylnaphthalene            | ND     | 4.0                       |           |             |                                       |          |             |      |          |      |
| 2-Methylnaphthalene            | ND     | 4.0                       |           |             |                                       |          |             |      |          |      |
| Acetone                        | ND     | 10                        |           |             |                                       |          |             |      |          |      |
| Bromobenzene                   | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| Bromodichloromethane           | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| Bromoform                      | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| Bromomethane                   | ND     | 3.0                       |           |             |                                       |          |             |      |          |      |
| 2-Butanone                     | ND     | 10                        |           |             |                                       |          |             |      |          |      |
| Carbon disulfide               | ND     | 10                        |           |             |                                       |          |             |      |          |      |
| Carbon Tetrachloride           | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| Chlorobenzene                  | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| Chloroethane                   | ND     | 2.0                       |           |             |                                       |          |             |      |          |      |
| Chloroform                     | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| Chloromethane                  | ND     | 3.0                       |           |             |                                       |          |             |      |          |      |
| 2-Chlorotoluene                | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| 4-Chlorotoluene                | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| cis-1,2-DCE                    | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| cis-1,3-Dichloropropene        | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| 1,2-Dibromo-3-chloropropane    | ND     | 2.0                       |           |             |                                       |          |             |      |          |      |
| Dibromochloromethane           | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| Dibromomethane                 | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| 1,2-Dichlorobenzene            | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| 1,3-Dichlorobenzene            | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| 1,4-Dichlorobenzene            | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| Dichlorodifluoromethane        | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| 1,1-Dichloroethane             | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| 1,1-Dichloroethene             | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| 1,2-Dichloropropane            | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| 1,3-Dichloropropane            | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| 2,2-Dichloropropane            | ND     | 2.0                       |           |             |                                       |          |             |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1412926

16-Jan-15

Client: Navajo Refining Company

Project: Lovington Lea Refining

|                             |        |                           |           |             |                                       |          |             |      |          |      |
|-----------------------------|--------|---------------------------|-----------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | 5mL rb | SampType: MBLK            |           |             | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID:                  | PBW    | Batch ID: R23401          |           |             | RunNo: 23401                          |          |             |      |          |      |
| Prep Date:                  |        | Analysis Date: 12/29/2014 |           |             | SeqNo: 691421                         |          | Units: µg/L |      |          |      |
| Analyte                     | Result | PQL                       | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| 1,1-Dichloropropene         | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| Hexachlorobutadiene         | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| 2-Hexanone                  | ND     | 10                        |           |             |                                       |          |             |      |          |      |
| Isopropylbenzene            | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| 4-Isopropyltoluene          | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| 4-Methyl-2-pentanone        | ND     | 10                        |           |             |                                       |          |             |      |          |      |
| Methylene Chloride          | ND     | 3.0                       |           |             |                                       |          |             |      |          |      |
| n-Butylbenzene              | ND     | 3.0                       |           |             |                                       |          |             |      |          |      |
| n-Propylbenzene             | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| sec-Butylbenzene            | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| Styrene                     | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| tert-Butylbenzene           | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| 1,1,1,2-Tetrachloroethane   | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| 1,1,2,2-Tetrachloroethane   | ND     | 2.0                       |           |             |                                       |          |             |      |          |      |
| Tetrachloroethene (PCE)     | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| trans-1,2-DCE               | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| trans-1,3-Dichloropropene   | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| 1,2,3-Trichlorobenzene      | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| 1,2,4-Trichlorobenzene      | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| 1,1,1-Trichloroethane       | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| 1,1,2-Trichloroethane       | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| Trichloroethene (TCE)       | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| Trichlorofluoromethane      | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| 1,2,3-Trichloropropane      | ND     | 2.0                       |           |             |                                       |          |             |      |          |      |
| Vinyl chloride              | ND     | 1.0                       |           |             |                                       |          |             |      |          |      |
| Xylenes, Total              | ND     | 1.5                       |           |             |                                       |          |             |      |          |      |
| Surr: 1,2-Dichloroethane-d4 | 8.5    |                           | 10.00     |             | 85.3                                  | 70       | 130         |      |          |      |
| Surr: 4-Bromofluorobenzene  | 8.0    |                           | 10.00     |             | 80.0                                  | 70       | 130         |      |          |      |
| Surr: Dibromofluoromethane  | 8.7    |                           | 10.00     |             | 86.8                                  | 70       | 130         |      |          |      |
| Surr: Toluene-d8            | 9.0    |                           | 10.00     |             | 90.2                                  | 70       | 130         |      |          |      |

|               |            |                           |           |             |                                       |          |             |      |          |      |
|---------------|------------|---------------------------|-----------|-------------|---------------------------------------|----------|-------------|------|----------|------|
| Sample ID     | 100ng lcs1 | SampType: LCS             |           |             | TestCode: EPA Method 8260B: VOLATILES |          |             |      |          |      |
| Client ID:    | LCSW       | Batch ID: R23401          |           |             | RunNo: 23401                          |          |             |      |          |      |
| Prep Date:    |            | Analysis Date: 12/29/2014 |           |             | SeqNo: 691438                         |          | Units: µg/L |      |          |      |
| Analyte       | Result     | PQL                       | SPK value | SPK Ref Val | %REC                                  | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzene       | 23         | 1.0                       | 20.00     | 0           | 113                                   | 70       | 130         |      |          |      |
| Toluene       | 23         | 1.0                       | 20.00     | 0           | 114                                   | 70       | 130         |      |          |      |
| Chlorobenzene | 22         | 1.0                       | 20.00     | 0           | 111                                   | 70       | 130         |      |          |      |

### Qualifiers:

|   |                                                 |    |                                                    |
|---|-------------------------------------------------|----|----------------------------------------------------|
| * | Value exceeds Maximum Contaminant Level.        | B  | Analyte detected in the associated Method Blank    |
| E | Value above quantitation range                  | H  | Holding times for preparation or analysis exceeded |
| J | Analyte detected below quantitation limits      | ND | Not Detected at the Reporting Limit                |
| O | RSD is greater than RSDlimit                    | P  | Sample pH greater than 2.                          |
| R | RPD outside accepted recovery limits            | RL | Reporting Detection Limit                          |
| S | Spike Recovery outside accepted recovery limits |    |                                                    |

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1412926

16-Jan-15

Client: Navajo Refining Company

Project: Lovington Lea Refining

|                             |            |     |                           |             |      |                                       |           |             |          |      |
|-----------------------------|------------|-----|---------------------------|-------------|------|---------------------------------------|-----------|-------------|----------|------|
| Sample ID                   | 100ng lcs1 |     | SampType: LCS             |             |      | TestCode: EPA Method 8260B: VOLATILES |           |             |          |      |
| Client ID:                  | LCSW       |     | Batch ID: R23401          |             |      | RunNo: 23401                          |           |             |          |      |
| Prep Date:                  |            |     | Analysis Date: 12/29/2014 |             |      | SeqNo: 691438                         |           | Units: µg/L |          |      |
| Analyte                     | Result     | PQL | SPK value                 | SPK Ref Val | %REC | LowLimit                              | HighLimit | %RPD        | RPDLimit | Qual |
| 1,1-Dichloroethene          | 25         | 1.0 | 20.00                     | 0           | 127  | 75.6                                  | 144       |             |          |      |
| Trichloroethene (TCE)       | 24         | 1.0 | 20.00                     | 0           | 119  | 70                                    | 130       |             |          |      |
| Surr: 1,2-Dichloroethane-d4 | 8.8        |     | 10.00                     |             | 88.5 | 70                                    | 130       |             |          |      |
| Surr: 4-Bromofluorobenzene  | 8.4        |     | 10.00                     |             | 83.8 | 70                                    | 130       |             |          |      |
| Surr: Dibromofluoromethane  | 8.8        |     | 10.00                     |             | 88.1 | 70                                    | 130       |             |          |      |
| Surr: Toluene-d8            | 8.5        |     | 10.00                     |             | 85.0 | 70                                    | 130       |             |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
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J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
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S Spike Recovery outside accepted recovery limits

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ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1412926

16-Jan-15

Client: Navajo Refining Company

Project: Lovington Lea Refining

|                             |           |      |                         |             |                                    |          |             |      |          |      |
|-----------------------------|-----------|------|-------------------------|-------------|------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | MB-R23640 |      | SampType: MBLK          |             | TestCode: EPA 8270D: Semivolatiles |          |             |      |          |      |
| Client ID:                  | PBW       |      | Batch ID: R23640        |             | RunNo: 23640                       |          |             |      |          |      |
| Prep Date:                  |           |      | Analysis Date: 1/1/2015 |             | SeqNo: 698012                      |          | Units: µg/L |      |          |      |
| Analyte                     | Result    | PQL  | SPK value               | SPK Ref Val | %REC                               | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| 1,2,4-Trichlorobenzene      | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 1,2-Dichlorobenzene         | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 1,2-Diphenylhydrazine       | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 1,3-Dichlorobenzene         | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 1,4-Dichlorobenzene         | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 1-Methylnaphthalene         | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 2,3,4,6-Tetrachlorophenol   | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 2,3,5,6-Tetrachlorophenol   | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 2,4,5-Trichlorophenol       | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 2,4,6-Trichlorophenol       | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 2,4-Dichlorophenol          | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 2,4-Dimethylphenol          | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 2,4-Dinitrophenol           | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 2,4-Dinitrotoluene          | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 2,6-Dinitrotoluene          | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 2-Chloronaphthalene         | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 2-Chlorophenol              | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 2-Methylnaphthalene         | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 2-Methylphenol              | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 2-Nitroaniline              | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 2-Nitrophenol               | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 3,3'-Dichlorobenzidine      | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 3+4-Methylphenol            | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 3-Nitroaniline              | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 4,6-Dinitro-2-methylphenol  | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 4-Bromophenyl phenyl ether  | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 4-Chloro-3-methylphenol     | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 4-Chloroaniline             | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 4-Chlorophenyl phenyl ether | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 4-Nitroaniline              | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| 4-Nitrophenol               | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Acenaphthene                | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Acenaphthylene              | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Aniline                     | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Anthracene                  | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Benzidine                   | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Benzo(g,h,i)perylene        | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Benz(a)anthracene           | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Benzo(a)pyrene              | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |

### Qualifiers:

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E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1412926

16-Jan-15

Client: Navajo Refining Company

Project: Lovington Lea Refining

|                             |           |      |                         |             |                                    |          |             |      |          |      |
|-----------------------------|-----------|------|-------------------------|-------------|------------------------------------|----------|-------------|------|----------|------|
| Sample ID                   | MB-R23640 |      | SampType: MBLK          |             | TestCode: EPA 8270D: Semivolatiles |          |             |      |          |      |
| Client ID:                  | PBW       |      | Batch ID: R23640        |             | RunNo: 23640                       |          |             |      |          |      |
| Prep Date:                  |           |      | Analysis Date: 1/1/2015 |             | SeqNo: 698012                      |          | Units: µg/L |      |          |      |
| Analyte                     | Result    | PQL  | SPK value               | SPK Ref Val | %REC                               | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Benzo(b)fluoranthene        | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Benzo(k)fluoranthene        | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Benzyl alcohol              | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Bis(2-chloroethoxy)methane  | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Bis(2-chloroethyl)ether     | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Bis(2-chloroisopropyl)ether | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Bis(2-ethylhexyl)phthalate  | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Butyl benzyl phthalate      | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Carbazole                   | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Chrysene                    | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Dibenz(a,h)anthracene       | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Dibenzofuran                | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Diethyl phthalate           | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Dimethyl phthalate          | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Di-n-butyl phthalate        | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Di-n-octyl phthalate        | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Fluoranthene                | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Fluorene                    | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Hexachlorobenzene           | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Hexachlorobutadiene         | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Hexachlorocyclopentadiene   | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Hexachloroethane            | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Indeno(1,2,3-cd)pyrene      | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Isophorone                  | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Naphthalene                 | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Nitrobenzene                | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| N-Nitrosodimethylamine      | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| N-Nitrosodi-n-propylamine   | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| N-Nitrosodiphenylamine      | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Pentachlorophenol           | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Phenanthrene                | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Phenol                      | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Pyrene                      | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |
| Pyridine                    | ND        | 0.50 |                         |             |                                    |          |             |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1412926

16-Jan-15

Client: Navajo Refining Company

Project: Lovington Lea Refining

|                            |            |     |                         |             |                                    |          |             |      |          |      |
|----------------------------|------------|-----|-------------------------|-------------|------------------------------------|----------|-------------|------|----------|------|
| Sample ID                  | LCS-R23640 |     | SampType: LCS           |             | TestCode: EPA 8270D: Semivolatiles |          |             |      |          |      |
| Client ID:                 | LCSW       |     | Batch ID: R23640        |             | RunNo: 23640                       |          |             |      |          |      |
| Prep Date:                 |            |     | Analysis Date: 1/1/2015 |             | SeqNo: 698013                      |          | Units: µg/L |      |          |      |
| Analyte                    | Result     | PQL | SPK value               | SPK Ref Val | %REC                               | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| 1,2,4-Trichlorobenzene     | 4.3        |     | 5.000                   | 0           | 86.2                               | 33       | 109         |      |          |      |
| 1,4-Dichlorobenzene        | 4.2        |     | 5.000                   | 0           | 84.8                               | 28       | 108         |      |          |      |
| 2,4-Dinitrotoluene         | 4.8        |     | 5.000                   | 0           | 97.0                               | 49       | 145         |      |          |      |
| 2-Chlorophenol             | 5.0        |     | 5.000                   | 0           | 100                                | 50       | 131         |      |          |      |
| 4-Chloro-3-methylphenol    | 4.8        |     | 5.000                   | 0           | 97.0                               | 42       | 139         |      |          |      |
| 4-Nitrophenol              | 4.0        |     | 5.000                   | 0           | 79.8                               | 19       | 137         |      |          |      |
| Acenaphthene               | 4.7        |     | 5.000                   | 0           | 94.8                               | 36       | 131         |      |          |      |
| Bis(2-ethylhexyl)phthalate | 5.3        |     | 5.000                   | 0           | 105                                | 43       | 148         |      |          |      |
| N-Nitrosodi-n-propylamine  | 5.7        |     | 5.000                   | 0           | 114                                | 46       | 135         |      |          |      |
| Pentachlorophenol          | 5.3        |     | 5.000                   | 0           | 107                                | 22       | 138         |      |          |      |
| Phenol                     | 4.4        |     | 5.000                   | 0           | 87.4                               | 45       | 134         |      |          |      |
| Pyrene                     | 5.4        |     | 5.000                   | 0           | 109                                | 45       | 139         |      |          |      |

### Qualifiers:

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P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1412926

16-Jan-15

**Client:** Navajo Refining Company

**Project:** Lovington Lea Refining

|            |            |         |                           |             |                                    |          |             |      |          |      |
|------------|------------|---------|---------------------------|-------------|------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | MB-17040   |         | SampType: MBLK            |             | TestCode: EPA Method 7470: Mercury |          |             |      |          |      |
| Client ID: | PBW        |         | Batch ID: 17040           |             | RunNo: 23441                       |          |             |      |          |      |
| Prep Date: | 12/31/2014 |         | Analysis Date: 12/31/2014 |             | SeqNo: 692653                      |          | Units: mg/L |      |          |      |
| Analyte    | Result     | PQL     | SPK value                 | SPK Ref Val | %REC                               | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Mercurv    | ND         | 0.00020 |                           |             |                                    |          |             |      |          |      |

|            |            |         |                           |             |                                    |          |             |      |          |      |
|------------|------------|---------|---------------------------|-------------|------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LCS-17040  |         | SampType: LCS             |             | TestCode: EPA Method 7470: Mercury |          |             |      |          |      |
| Client ID: | LCSW       |         | Batch ID: 17040           |             | RunNo: 23441                       |          |             |      |          |      |
| Prep Date: | 12/31/2014 |         | Analysis Date: 12/31/2014 |             | SeqNo: 692654                      |          | Units: mg/L |      |          |      |
| Analyte    | Result     | PQL     | SPK value                 | SPK Ref Val | %REC                               | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Mercury    | 0.0054     | 0.00020 | 0.005000                  | 0           | 108                                | 80       | 120         |      |          |      |

|            |                |         |                           |             |                                    |          |             |      |          |      |
|------------|----------------|---------|---------------------------|-------------|------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | 1412926-002CMS |         | SampType: MS              |             | TestCode: EPA Method 7470: Mercury |          |             |      |          |      |
| Client ID: | WW-South       |         | Batch ID: 17040           |             | RunNo: 23441                       |          |             |      |          |      |
| Prep Date: | 12/31/2014     |         | Analysis Date: 12/31/2014 |             | SeqNo: 692657                      |          | Units: mg/L |      |          |      |
| Analyte    | Result         | PQL     | SPK value                 | SPK Ref Val | %REC                               | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Mercury    | 0.0047         | 0.00020 | 0.005000                  | 0           | 93.9                               | 75       | 125         |      |          |      |

|            |                 |         |           |                |            |          |           |                          |          |        |      |
|------------|-----------------|---------|-----------|----------------|------------|----------|-----------|--------------------------|----------|--------|------|
| Sample ID  | 1412926-002CMSD |         |           | SampType:      | MSD        |          | TestCode: | EPA Method 7470: Mercury |          |        |      |
| Client ID: | WW-South        |         |           | Batch ID:      | 17040      |          | RunNo:    | 23441                    |          |        |      |
| Prep Date: | 12/31/2014      |         |           | Analysis Date: | 12/31/2014 |          | SeqNo:    | 692658                   |          | Units: | mg/L |
| Analyte    | Result          | PQL     | SPK value | SPK Ref Val    | %REC       | LowLimit | HighLimit | %RPD                     | RPDLimit | Qual   |      |
| Mercury    | 0.0047          | 0.00020 | 0.005000  | 0              | 93.1       | 75       | 125       | 0.899                    | 20       |        |      |

### Qualifiers:

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 ND Not Detected at the Reporting Limit  
 P Sample pH greater than 2.  
 RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1412926

16-Jan-15

Client: Navajo Refining Company

Project: Lovington Lea Refining

|            |                  |     |                |                   |      |           |                                   |      |          |             |
|------------|------------------|-----|----------------|-------------------|------|-----------|-----------------------------------|------|----------|-------------|
| Sample ID  | <b>MB-R23667</b> |     | SampType:      | <b>MBLK</b>       |      | TestCode: | <b>EPA Method 6020: Dissolved</b> |      |          |             |
| Client ID: | <b>PBW</b>       |     | Batch ID:      | <b>R23667</b>     |      | RunNo:    | <b>23667</b>                      |      |          |             |
| Prep Date: |                  |     | Analysis Date: | <b>12/31/2014</b> |      | SeqNo:    | <b>698609</b>                     |      | Units:   | <b>mg/L</b> |
| Analyte    | Result           | PQL | SPK value      | SPK Ref Val       | %REC | LowLimit  | HighLimit                         | %RPD | RPDLimit | Qual        |

|            |    |         |  |  |  |  |  |  |  |  |
|------------|----|---------|--|--|--|--|--|--|--|--|
| Arsenic    | ND | 0.00100 |  |  |  |  |  |  |  |  |
| Barium     | ND | 0.00100 |  |  |  |  |  |  |  |  |
| Cadmium    | ND | 0.00100 |  |  |  |  |  |  |  |  |
| Chromium   | ND | 0.00100 |  |  |  |  |  |  |  |  |
| Cobalt     | ND | 0.00100 |  |  |  |  |  |  |  |  |
| Copper     | ND | 0.00100 |  |  |  |  |  |  |  |  |
| Iron       | ND | 0.0100  |  |  |  |  |  |  |  |  |
| Lead       | ND | 0.00100 |  |  |  |  |  |  |  |  |
| Manganese  | ND | 0.00100 |  |  |  |  |  |  |  |  |
| Molybdenum | ND | 0.00100 |  |  |  |  |  |  |  |  |
| Nickel     | ND | 0.00100 |  |  |  |  |  |  |  |  |
| Selenium   | ND | 0.00100 |  |  |  |  |  |  |  |  |
| Silver     | ND | 0.00100 |  |  |  |  |  |  |  |  |
| Uranium    | ND | 0.00100 |  |  |  |  |  |  |  |  |
| Zinc       | ND | 0.00100 |  |  |  |  |  |  |  |  |

|            |                   |     |                |                   |      |           |                                   |      |          |             |
|------------|-------------------|-----|----------------|-------------------|------|-----------|-----------------------------------|------|----------|-------------|
| Sample ID  | <b>LCS-R23667</b> |     | SampType:      | <b>LCS</b>        |      | TestCode: | <b>EPA Method 6020: Dissolved</b> |      |          |             |
| Client ID: | <b>LCSW</b>       |     | Batch ID:      | <b>R23667</b>     |      | RunNo:    | <b>23667</b>                      |      |          |             |
| Prep Date: |                   |     | Analysis Date: | <b>12/31/2014</b> |      | SeqNo:    | <b>698610</b>                     |      | Units:   | <b>mg/L</b> |
| Analyte    | Result            | PQL | SPK value      | SPK Ref Val       | %REC | LowLimit  | HighLimit                         | %RPD | RPDLimit | Qual        |

|            |        |  |         |   |      |    |     |  |  |  |
|------------|--------|--|---------|---|------|----|-----|--|--|--|
| Arsenic    | 0.0493 |  | 0.05000 | 0 | 98.6 | 80 | 120 |  |  |  |
| Barium     | 0.0495 |  | 0.05000 | 0 | 99.0 | 80 | 120 |  |  |  |
| Cadmium    | 0.0479 |  | 0.05000 | 0 | 95.8 | 80 | 120 |  |  |  |
| Chromium   | 0.0494 |  | 0.05000 | 0 | 98.8 | 80 | 120 |  |  |  |
| Cobalt     | 0.0490 |  | 0.05000 | 0 | 98.0 | 80 | 120 |  |  |  |
| Copper     | 0.0493 |  | 0.05000 | 0 | 98.6 | 80 | 120 |  |  |  |
| Iron       | 0.214  |  | 0.2000  | 0 | 107  | 80 | 120 |  |  |  |
| Lead       | 0.0511 |  | 0.05000 | 0 | 102  | 80 | 120 |  |  |  |
| Manganese  | 0.0483 |  | 0.05000 | 0 | 96.6 | 80 | 120 |  |  |  |
| Molybdenum | 0.0464 |  | 0.05000 | 0 | 92.8 | 80 | 120 |  |  |  |
| Nickel     | 0.0507 |  | 0.05000 | 0 | 101  | 80 | 120 |  |  |  |
| Selenium   | 0.0490 |  | 0.05000 | 0 | 98.0 | 80 | 120 |  |  |  |
| Silver     | 0.0472 |  | 0.05000 | 0 | 94.4 | 80 | 120 |  |  |  |
| Uranium    | 0.0535 |  | 0.05000 | 0 | 107  | 80 | 120 |  |  |  |
| Zinc       | 0.0504 |  | 0.05000 | 0 | 101  | 80 | 120 |  |  |  |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1412926

16-Jan-15

Client: Navajo Refining Company

Project: Lovington Lea Refining

|            |                  |        |                |                 |      |           |                                   |      |          |             |
|------------|------------------|--------|----------------|-----------------|------|-----------|-----------------------------------|------|----------|-------------|
| Sample ID  | <b>MB-R23667</b> |        | SampType:      | <b>MBLK</b>     |      | TestCode: | <b>EPA Method 6020: Dissolved</b> |      |          |             |
| Client ID: | <b>PBW</b>       |        | Batch ID:      | <b>R23667</b>   |      | RunNo:    | <b>23667</b>                      |      |          |             |
| Prep Date: |                  |        | Analysis Date: | <b>1/6/2015</b> |      | SeqNo:    | <b>698622</b>                     |      | Units:   | <b>mg/L</b> |
| Analyte    | Result           | PQL    | SPK value      | SPK Ref Val     | %REC | LowLimit  | HighLimit                         | %RPD | RPDLimit | Qual        |
| Calcium    | ND               | 0.0100 |                |                 |      |           |                                   |      |          |             |
| Magnesium  | ND               | 0.0100 |                |                 |      |           |                                   |      |          |             |
| Potassium  | ND               | 0.100  |                |                 |      |           |                                   |      |          |             |
| Sodium     | ND               | 0.0100 |                |                 |      |           |                                   |      |          |             |

|            |                   |     |                |                 |      |           |                                   |      |          |             |
|------------|-------------------|-----|----------------|-----------------|------|-----------|-----------------------------------|------|----------|-------------|
| Sample ID  | <b>LCS-R23667</b> |     | SampType:      | <b>LCS</b>      |      | TestCode: | <b>EPA Method 6020: Dissolved</b> |      |          |             |
| Client ID: | <b>LCSW</b>       |     | Batch ID:      | <b>R23667</b>   |      | RunNo:    | <b>23667</b>                      |      |          |             |
| Prep Date: |                   |     | Analysis Date: | <b>1/6/2015</b> |      | SeqNo:    | <b>698623</b>                     |      | Units:   | <b>mg/L</b> |
| Analyte    | Result            | PQL | SPK value      | SPK Ref Val     | %REC | LowLimit  | HighLimit                         | %RPD | RPDLimit | Qual        |
| Calcium    | 8.69              |     | 10.00          | 0               | 86.9 | 80        | 120                               |      |          |             |
| Magnesium  | 9.01              |     | 10.00          | 0               | 90.1 | 80        | 120                               |      |          |             |
| Potassium  | 9.62              |     | 10.00          | 0               | 96.2 | 80        | 120                               |      |          |             |
| Sodium     | 8.24              |     | 10.00          | 0               | 82.4 | 80        | 120                               |      |          |             |

|            |                  |        |                |                 |      |           |                                   |      |          |             |
|------------|------------------|--------|----------------|-----------------|------|-----------|-----------------------------------|------|----------|-------------|
| Sample ID  | <b>MB-R23667</b> |        | SampType:      | <b>MBLK</b>     |      | TestCode: | <b>EPA Method 6020: Dissolved</b> |      |          |             |
| Client ID: | <b>PBW</b>       |        | Batch ID:      | <b>R23667</b>   |      | RunNo:    | <b>23667</b>                      |      |          |             |
| Prep Date: |                  |        | Analysis Date: | <b>1/7/2015</b> |      | SeqNo:    | <b>698632</b>                     |      | Units:   | <b>mg/L</b> |
| Analyte    | Result           | PQL    | SPK value      | SPK Ref Val     | %REC | LowLimit  | HighLimit                         | %RPD | RPDLimit | Qual        |
| Aluminum   | ND               | 0.0100 |                |                 |      |           |                                   |      |          |             |

|            |                   |     |                |                 |      |           |                                   |      |          |             |
|------------|-------------------|-----|----------------|-----------------|------|-----------|-----------------------------------|------|----------|-------------|
| Sample ID  | <b>LCS-R23667</b> |     | SampType:      | <b>LCS</b>      |      | TestCode: | <b>EPA Method 6020: Dissolved</b> |      |          |             |
| Client ID: | <b>LCSW</b>       |     | Batch ID:      | <b>R23667</b>   |      | RunNo:    | <b>23667</b>                      |      |          |             |
| Prep Date: |                   |     | Analysis Date: | <b>1/7/2015</b> |      | SeqNo:    | <b>698633</b>                     |      | Units:   | <b>mg/L</b> |
| Analyte    | Result            | PQL | SPK value      | SPK Ref Val     | %REC | LowLimit  | HighLimit                         | %RPD | RPDLimit | Qual        |
| Aluminum   | 0.187             |     | 0.2000         | 0               | 93.5 | 80        | 120                               |      |          |             |

|            |                  |        |                |                 |      |           |                                   |      |          |             |
|------------|------------------|--------|----------------|-----------------|------|-----------|-----------------------------------|------|----------|-------------|
| Sample ID  | <b>MB-R23667</b> |        | SampType:      | <b>MBLK</b>     |      | TestCode: | <b>EPA Method 6020: Dissolved</b> |      |          |             |
| Client ID: | <b>PBW</b>       |        | Batch ID:      | <b>R23667</b>   |      | RunNo:    | <b>23667</b>                      |      |          |             |
| Prep Date: |                  |        | Analysis Date: | <b>1/8/2015</b> |      | SeqNo:    | <b>698642</b>                     |      | Units:   | <b>mg/L</b> |
| Analyte    | Result           | PQL    | SPK value      | SPK Ref Val     | %REC | LowLimit  | HighLimit                         | %RPD | RPDLimit | Qual        |
| Boron      | ND               | 0.0100 |                |                 |      |           |                                   |      |          |             |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1412926

16-Jan-15

Client: Navajo Refining Company

Project: Lovington Lea Refining

|            |            |     |                         |             |                                      |          |             |      |          |      |
|------------|------------|-----|-------------------------|-------------|--------------------------------------|----------|-------------|------|----------|------|
| Sample ID  | LCS-R23667 |     | SampType: LCS           |             | TestCode: EPA Method 6020: Dissolved |          |             |      |          |      |
| Client ID: | LCSW       |     | Batch ID: R23667        |             | RunNo: 23667                         |          |             |      |          |      |
| Prep Date: |            |     | Analysis Date: 1/8/2015 |             | SeqNo: 698643                        |          | Units: mg/L |      |          |      |
| Analyte    | Result     | PQL | SPK value               | SPK Ref Val | %REC                                 | LowLimit | HighLimit   | %RPD | RPDLimit | Qual |
| Boron      | 0.0529     |     | 0.05000                 | 0           | 106                                  | 80       | 120         |      |          |      |

### Qualifiers:

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E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1412926

16-Jan-15

Client: Navajo Refining Company

Project: Lovington Lea Refining

|            |                  |        |                |                   |      |           |                                      |      |          |             |
|------------|------------------|--------|----------------|-------------------|------|-----------|--------------------------------------|------|----------|-------------|
| Sample ID  | <b>MB-R23657</b> |        | SampType:      | <b>MBLK</b>       |      | TestCode: | <b>EPA 6020: Metals-Total Subbed</b> |      |          |             |
| Client ID: | <b>PBW</b>       |        | Batch ID:      | <b>R23657</b>     |      | RunNo:    | <b>23657</b>                         |      |          |             |
| Prep Date: |                  |        | Analysis Date: | <b>12/31/2014</b> |      | SeqNo:    | <b>698351</b>                        |      | Units:   | <b>mg/L</b> |
| Analyte    | Result           | PQL    | SPK value      | SPK Ref Val       | %REC | LowLimit  | HighLimit                            | %RPD | RPDLimit | Qual        |
| Barium     | ND               | 0.0010 |                |                   |      |           |                                      |      |          |             |
| Cadmium    | ND               | 0.0010 |                |                   |      |           |                                      |      |          |             |
| Cobalt     | ND               | 0.0010 |                |                   |      |           |                                      |      |          |             |
| Copper     | ND               | 0.0010 |                |                   |      |           |                                      |      |          |             |
| Iron       | ND               | 0.010  |                |                   |      |           |                                      |      |          |             |
| Manganese  | ND               | 0.0010 |                |                   |      |           |                                      |      |          |             |
| Molybdenum | ND               | 0.0010 |                |                   |      |           |                                      |      |          |             |
| Nickel     | ND               | 0.0010 |                |                   |      |           |                                      |      |          |             |
| Silver     | ND               | 0.0010 |                |                   |      |           |                                      |      |          |             |
| Arsenic    | ND               | 0.0010 |                |                   |      |           |                                      |      |          |             |
| Chromium   | ND               | 0.0010 |                |                   |      |           |                                      |      |          |             |
| Selenium   | ND               | 0.0010 |                |                   |      |           |                                      |      |          |             |
| Uranium    | ND               | 0.0010 |                |                   |      |           |                                      |      |          |             |

|            |                   |     |                |                   |      |           |                                      |      |          |             |
|------------|-------------------|-----|----------------|-------------------|------|-----------|--------------------------------------|------|----------|-------------|
| Sample ID  | <b>LCS-R23657</b> |     | SampType:      | <b>LCS</b>        |      | TestCode: | <b>EPA 6020: Metals-Total Subbed</b> |      |          |             |
| Client ID: | <b>LCSW</b>       |     | Batch ID:      | <b>R23657</b>     |      | RunNo:    | <b>23657</b>                         |      |          |             |
| Prep Date: |                   |     | Analysis Date: | <b>12/31/2014</b> |      | SeqNo:    | <b>698352</b>                        |      | Units:   | <b>mg/L</b> |
| Analyte    | Result            | PQL | SPK value      | SPK Ref Val       | %REC | LowLimit  | HighLimit                            | %RPD | RPDLimit | Qual        |
| Barium     | 0.049             |     | 0.05000        | 0                 | 98.0 | 80        | 120                                  |      |          |             |
| Cadmium    | 0.050             |     | 0.05000        | 0                 | 100  | 80        | 120                                  |      |          |             |
| Cobalt     | 0.051             |     | 0.05000        | 0                 | 101  | 80        | 120                                  |      |          |             |
| Copper     | 0.050             |     | 0.05000        | 0                 | 100  | 80        | 120                                  |      |          |             |
| Iron       | 0.22              |     | 0.2000         | 0                 | 112  | 80        | 120                                  |      |          |             |
| Manganese  | 0.049             |     | 0.05000        | 0                 | 98.8 | 80        | 120                                  |      |          |             |
| Molybdenum | 0.052             |     | 0.05000        | 0                 | 103  | 80        | 120                                  |      |          |             |
| Nickel     | 0.051             |     | 0.05000        | 0                 | 102  | 80        | 120                                  |      |          |             |
| Silver     | 0.049             |     | 0.05000        | 0                 | 98.6 | 80        | 120                                  |      |          |             |
| Arsenic    | 0.050             |     | 0.05000        | 0                 | 99.2 | 80        | 120                                  |      |          |             |
| Chromium   | 0.050             |     | 0.05000        | 0                 | 101  | 80        | 120                                  |      |          |             |
| Selenium   | 0.050             |     | 0.05000        | 0                 | 100  | 80        | 120                                  |      |          |             |
| Uranium    | 0.056             |     | 0.05000        | 0                 | 111  | 80        | 120                                  |      |          |             |

|            |                  |      |                |                 |      |           |                                      |      |          |             |
|------------|------------------|------|----------------|-----------------|------|-----------|--------------------------------------|------|----------|-------------|
| Sample ID  | <b>MB-R23657</b> |      | SampType:      | <b>MBLK</b>     |      | TestCode: | <b>EPA 6020: Metals-Total Subbed</b> |      |          |             |
| Client ID: | <b>PBW</b>       |      | Batch ID:      | <b>R23657</b>   |      | RunNo:    | <b>23657</b>                         |      |          |             |
| Prep Date: |                  |      | Analysis Date: | <b>1/6/2015</b> |      | SeqNo:    | <b>698363</b>                        |      | Units:   | <b>mg/L</b> |
| Analyte    | Result           | PQL  | SPK value      | SPK Ref Val     | %REC | LowLimit  | HighLimit                            | %RPD | RPDLimit | Qual        |
| Calcium    | ND               | 0.10 |                |                 |      |           |                                      |      |          |             |
| Sodium     | ND               | 0.10 |                |                 |      |           |                                      |      |          |             |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1412926

16-Jan-15

Client: Navajo Refining Company

Project: Lovington Lea Refining

|            |                   |     |                                |             |                                                |          |                    |      |          |      |
|------------|-------------------|-----|--------------------------------|-------------|------------------------------------------------|----------|--------------------|------|----------|------|
| Sample ID  | <b>LCS-R23657</b> |     | SampType: <b>LCS</b>           |             | TestCode: <b>EPA 6020: Metals-Total Subbed</b> |          |                    |      |          |      |
| Client ID: | <b>LCSW</b>       |     | Batch ID: <b>R23657</b>        |             | RunNo: <b>23657</b>                            |          |                    |      |          |      |
| Prep Date: |                   |     | Analysis Date: <b>1/6/2015</b> |             | SeqNo: <b>698364</b>                           |          | Units: <b>mg/L</b> |      |          |      |
| Analyte    | Result            | PQL | SPK value                      | SPK Ref Val | %REC                                           | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| Calcium    | 8.5               |     | 10.00                          | 0           | 84.9                                           | 80       | 120                |      |          |      |
| Sodium     | 8.1               |     | 10.00                          | 0           | 80.7                                           | 80       | 120                |      |          |      |

|            |                  |        |                                |             |                                                |          |                    |      |          |      |
|------------|------------------|--------|--------------------------------|-------------|------------------------------------------------|----------|--------------------|------|----------|------|
| Sample ID  | <b>MB-R23657</b> |        | SampType: <b>MBLK</b>          |             | TestCode: <b>EPA 6020: Metals-Total Subbed</b> |          |                    |      |          |      |
| Client ID: | <b>PBW</b>       |        | Batch ID: <b>R23657</b>        |             | RunNo: <b>23657</b>                            |          |                    |      |          |      |
| Prep Date: |                  |        | Analysis Date: <b>1/7/2015</b> |             | SeqNo: <b>698372</b>                           |          | Units: <b>mg/L</b> |      |          |      |
| Analyte    | Result           | PQL    | SPK value                      | SPK Ref Val | %REC                                           | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| Aluminum   | ND               | 0.010  |                                |             |                                                |          |                    |      |          |      |
| Lead       | ND               | 0.0010 |                                |             |                                                |          |                    |      |          |      |
| Magnesium  | ND               | 0.10   |                                |             |                                                |          |                    |      |          |      |
| Potassium  | ND               | 0.10   |                                |             |                                                |          |                    |      |          |      |
| Zinc       | ND               | 0.0010 |                                |             |                                                |          |                    |      |          |      |

|            |                   |     |                                |             |                                                |          |                    |      |          |      |
|------------|-------------------|-----|--------------------------------|-------------|------------------------------------------------|----------|--------------------|------|----------|------|
| Sample ID  | <b>LCS-R23657</b> |     | SampType: <b>LCS</b>           |             | TestCode: <b>EPA 6020: Metals-Total Subbed</b> |          |                    |      |          |      |
| Client ID: | <b>LCSW</b>       |     | Batch ID: <b>R23657</b>        |             | RunNo: <b>23657</b>                            |          |                    |      |          |      |
| Prep Date: |                   |     | Analysis Date: <b>1/7/2015</b> |             | SeqNo: <b>698373</b>                           |          | Units: <b>mg/L</b> |      |          |      |
| Analyte    | Result            | PQL | SPK value                      | SPK Ref Val | %REC                                           | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| Aluminum   | 0.20              |     | 0.2000                         | 0           | 98.5                                           | 80       | 120                |      |          |      |
| Lead       | 0.049             |     | 0.05000                        | 0           | 98.2                                           | 80       | 120                |      |          |      |
| Magnesium  | 8.2               |     | 10.00                          | 0           | 81.9                                           | 80       | 120                |      |          |      |
| Potassium  | 8.9               |     | 10.00                          | 0           | 89.4                                           | 80       | 120                |      |          |      |
| Zinc       | 0.049             |     | 0.05000                        | 0           | 98.8                                           | 80       | 120                |      |          |      |

|            |                  |       |                                |             |                                                |          |                    |      |          |      |
|------------|------------------|-------|--------------------------------|-------------|------------------------------------------------|----------|--------------------|------|----------|------|
| Sample ID  | <b>MB-R23657</b> |       | SampType: <b>MBLK</b>          |             | TestCode: <b>EPA 6020: Metals-Total Subbed</b> |          |                    |      |          |      |
| Client ID: | <b>PBW</b>       |       | Batch ID: <b>R23657</b>        |             | RunNo: <b>23657</b>                            |          |                    |      |          |      |
| Prep Date: |                  |       | Analysis Date: <b>1/8/2015</b> |             | SeqNo: <b>698378</b>                           |          | Units: <b>mg/L</b> |      |          |      |
| Analyte    | Result           | PQL   | SPK value                      | SPK Ref Val | %REC                                           | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| Boron      | ND               | 0.010 |                                |             |                                                |          |                    |      |          |      |

|            |                   |     |                                |             |                                                |          |                    |      |          |      |
|------------|-------------------|-----|--------------------------------|-------------|------------------------------------------------|----------|--------------------|------|----------|------|
| Sample ID  | <b>LCS-R23657</b> |     | SampType: <b>LCS</b>           |             | TestCode: <b>EPA 6020: Metals-Total Subbed</b> |          |                    |      |          |      |
| Client ID: | <b>LCSW</b>       |     | Batch ID: <b>R23657</b>        |             | RunNo: <b>23657</b>                            |          |                    |      |          |      |
| Prep Date: |                   |     | Analysis Date: <b>1/8/2015</b> |             | SeqNo: <b>698379</b>                           |          | Units: <b>mg/L</b> |      |          |      |
| Analyte    | Result            | PQL | SPK value                      | SPK Ref Val | %REC                                           | LowLimit | HighLimit          | %RPD | RPDLimit | Qual |
| Boron      | 0.047             |     | 0.05000                        | 0           | 93.6                                           | 80       | 120                |      |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1412926

16-Jan-15

Client: Navajo Refining Company

Project: Lovington Lea Refining

|                             |        |     |                           |             |                               |          |                   |      |          |      |
|-----------------------------|--------|-----|---------------------------|-------------|-------------------------------|----------|-------------------|------|----------|------|
| Sample ID                   | mb-1   |     | SampType: MBLK            |             | TestCode: SM2320B: Alkalinity |          |                   |      |          |      |
| Client ID:                  | PBW    |     | Batch ID: R23288          |             | RunNo: 23288                  |          |                   |      |          |      |
| Prep Date:                  |        |     | Analysis Date: 12/19/2014 |             | SeqNo: 688393                 |          | Units: mg/L CaCO3 |      |          |      |
| Analyte                     | Result | PQL | SPK value                 | SPK Ref Val | %REC                          | LowLimit | HighLimit         | %RPD | RPDLimit | Qual |
| Total Alkalinity (as CaCO3) | ND     | 20  |                           |             |                               |          |                   |      |          |      |

|                             |        |     |                           |             |      |                               |           |                   |          |      |
|-----------------------------|--------|-----|---------------------------|-------------|------|-------------------------------|-----------|-------------------|----------|------|
| Sample ID                   | Ics-1  |     | SampType: LCS             |             |      | TestCode: SM2320B: Alkalinity |           |                   |          |      |
| Client ID:                  | LCSW   |     | Batch ID: R23288          |             |      | RunNo: 23288                  |           |                   |          |      |
| Prep Date:                  |        |     | Analysis Date: 12/19/2014 |             |      | SeqNo: 688394                 |           | Units: mg/L CaCO3 |          |      |
| Analyte                     | Result | PQL | SPK value                 | SPK Ref Val | %REC | LowLimit                      | HighLimit | %RPD              | RPDLimit | Qual |
| Total Alkalinity (as CaCO3) | 79     | 20  | 80.00                     | 0           | 98.8 | 90                            | 110       |                   |          |      |

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
E Value above quantitation range  
J Analyte detected below quantitation limits  
O RSD is greater than RSDlimit  
R RPD outside accepted recovery limits  
S Spike Recovery outside accepted recovery limits

B Analyte detected in the associated Method Blank  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
P Sample pH greater than 2.  
RL Reporting Detection Limit

# Sample Log-In Check List

Client Name: NAVAJO REFINING COM

Work Order Number: 1412926

RcptNo: 1

Received by/date:

Logged By: Ashley Gallegos

12/18/2014 9:15:00 AM

Completed By: Ashley Gallegos

12/18/2014 12:48:40 PM

Reviewed By:

IO

12/18/14

## Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? FedEx

## Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels? Yes ☒ No ☐
- (Note discrepancies on chain of custody)
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met? Yes ☒ No ☐
- (If no, notify customer for authorization.)

# of preserved  
bottles checked  
for pH:

16

or >12 unless noted)

Adjusted?

NO

Checked by:

QC FOR 8270(-0025) ARRIVED BROKEN. 12/18/14

## Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified:

Date:

By Whom:

Via:

☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding:

Client Instructions:

17. Additional remarks:

## 18. Cooler Information

| Cooler No | Temp °C | Condition | Seal Intact | Seal No | Seal Date | Signed By |
|-----------|---------|-----------|-------------|---------|-----------|-----------|
| 1         | 1.8     | Good      | Yes         |         |           |           |

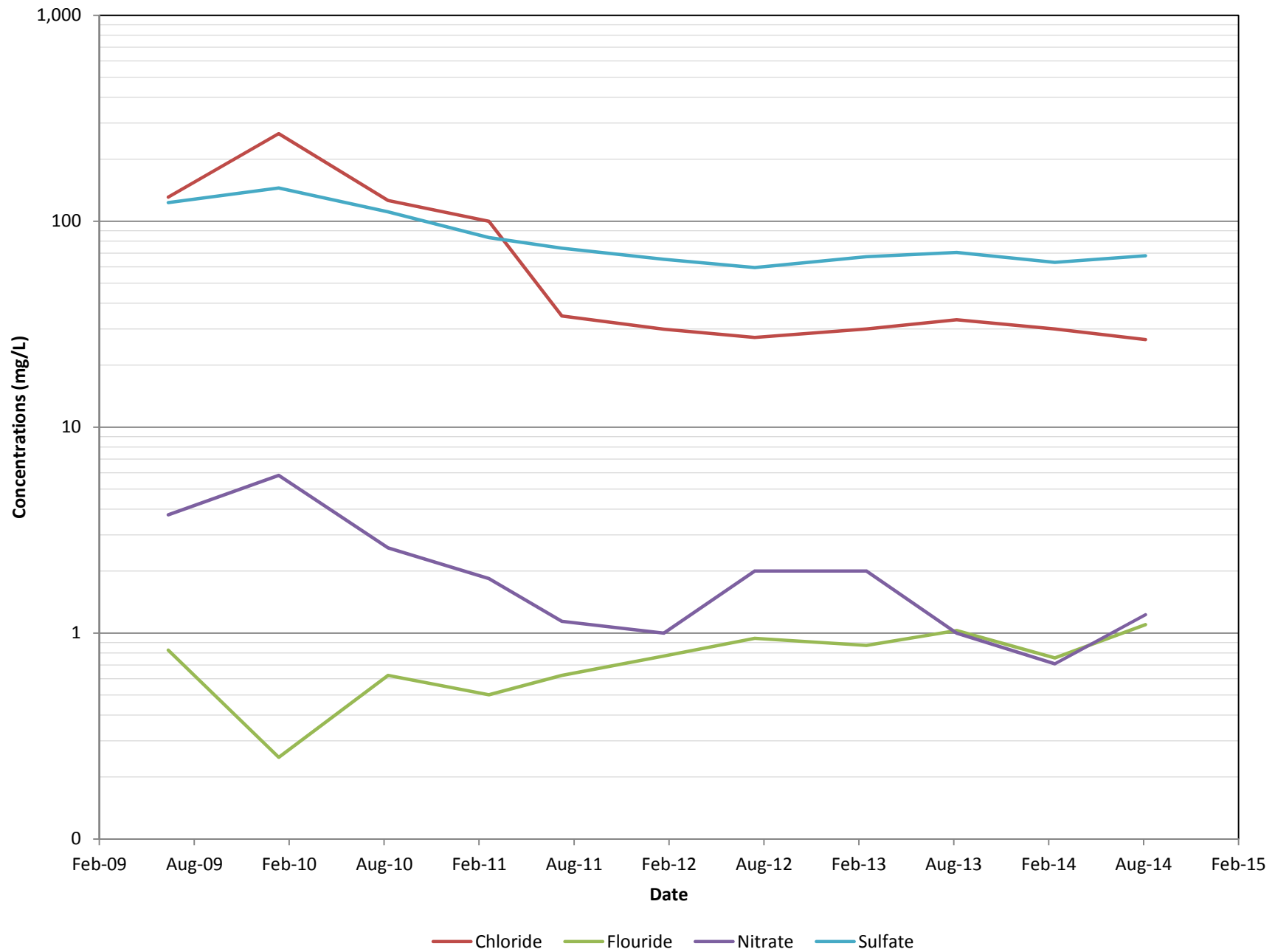


## **APPENDIX C**

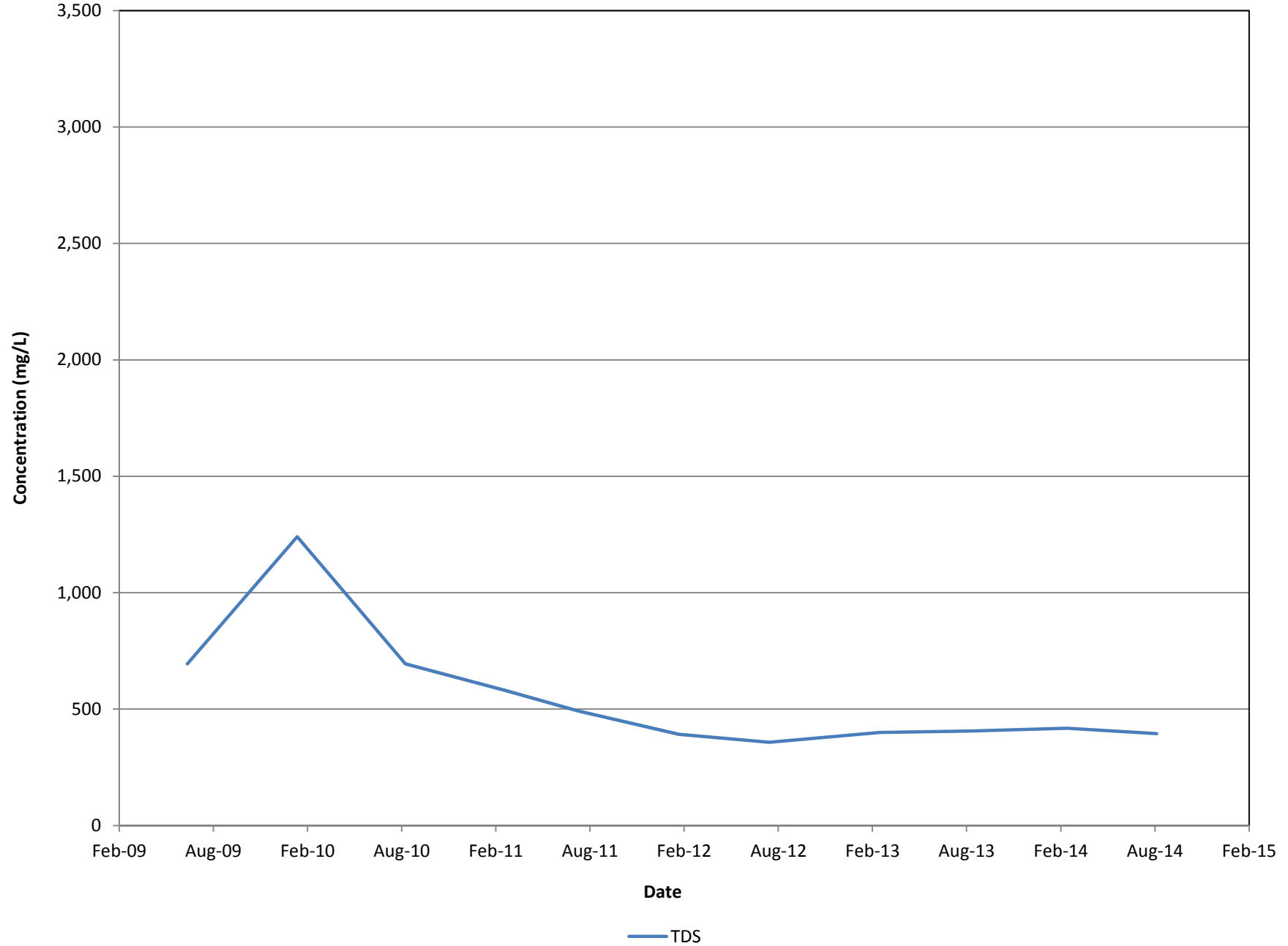
### **PLOTS OF GROUNDWATER CONCENTRATIONS OVER TIME**



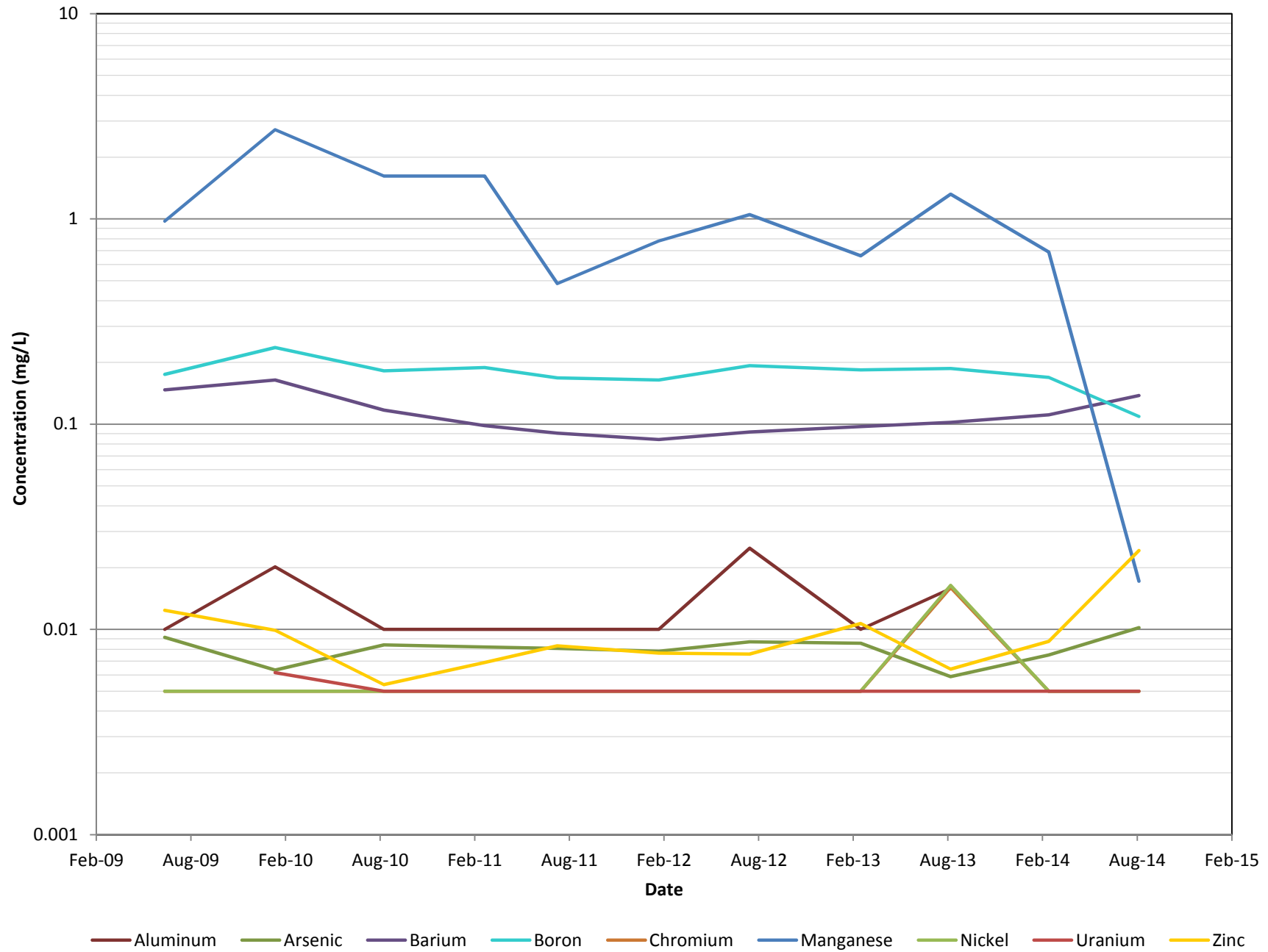
## MW-1: ANION CONCENTRATIONS OVER TIME



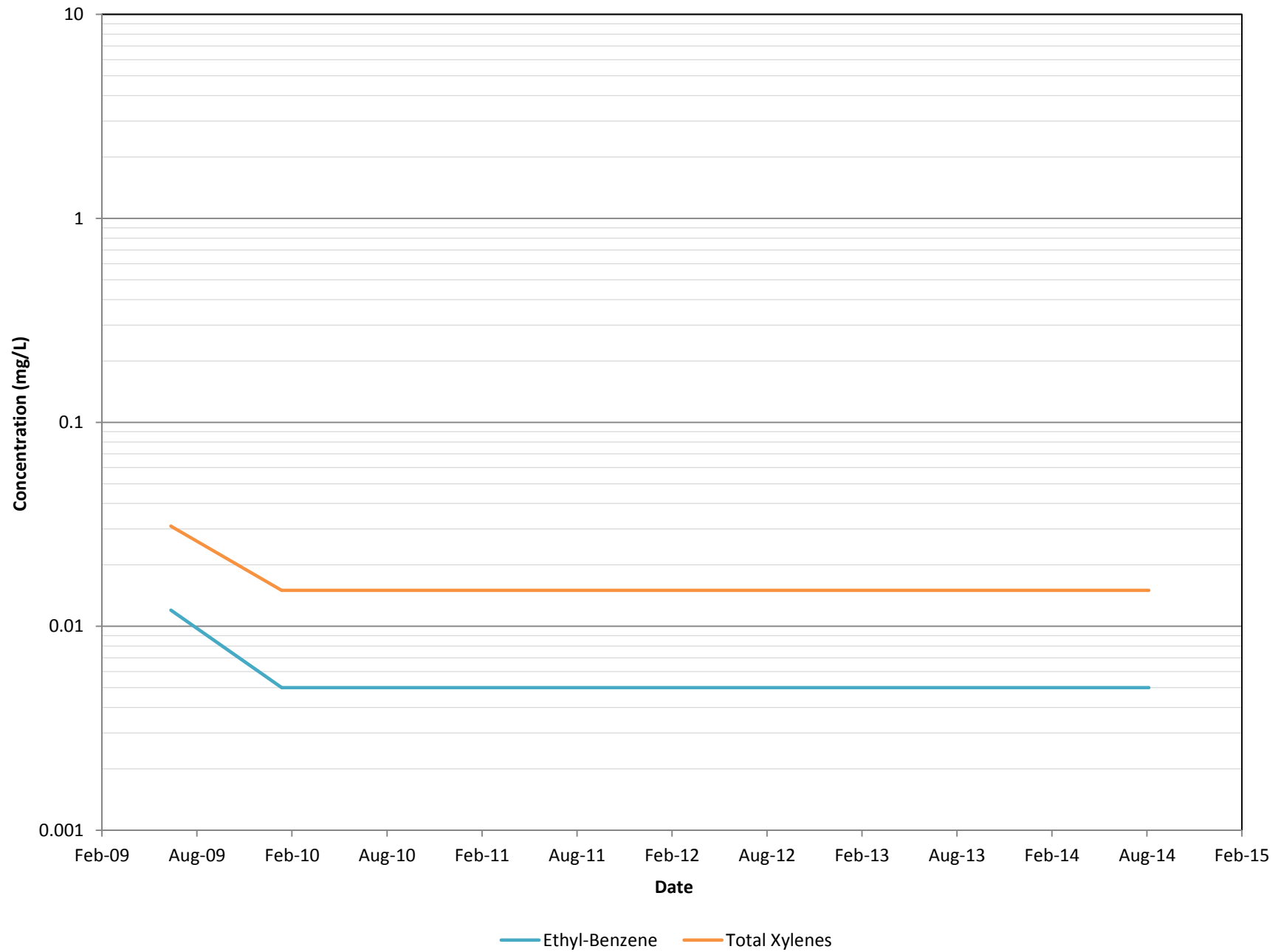
## MW-1: TDS CONCENTRATIONS OVER TIME



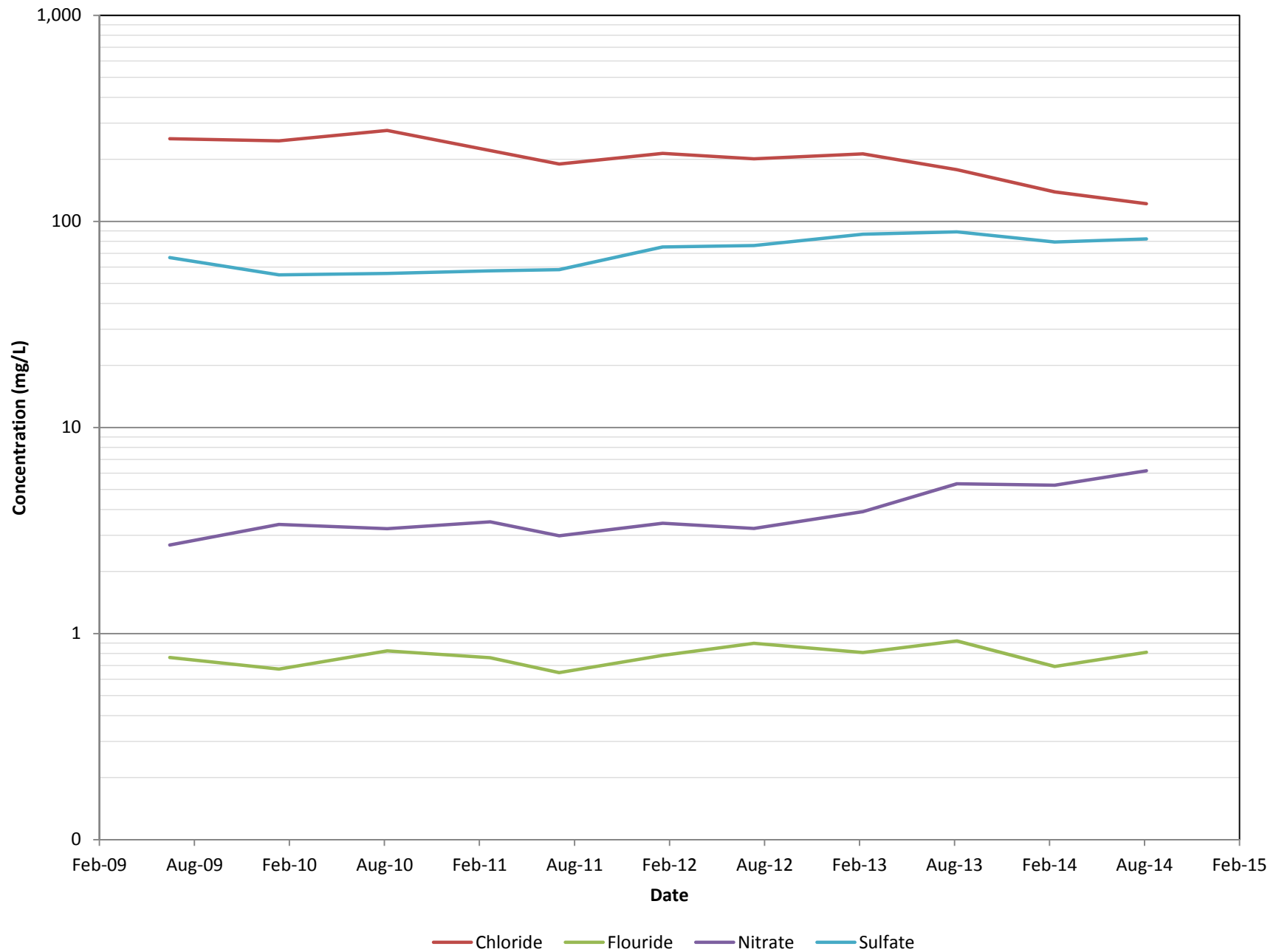
## MW-1: METAL CONCENTRATIONS OVER TIME



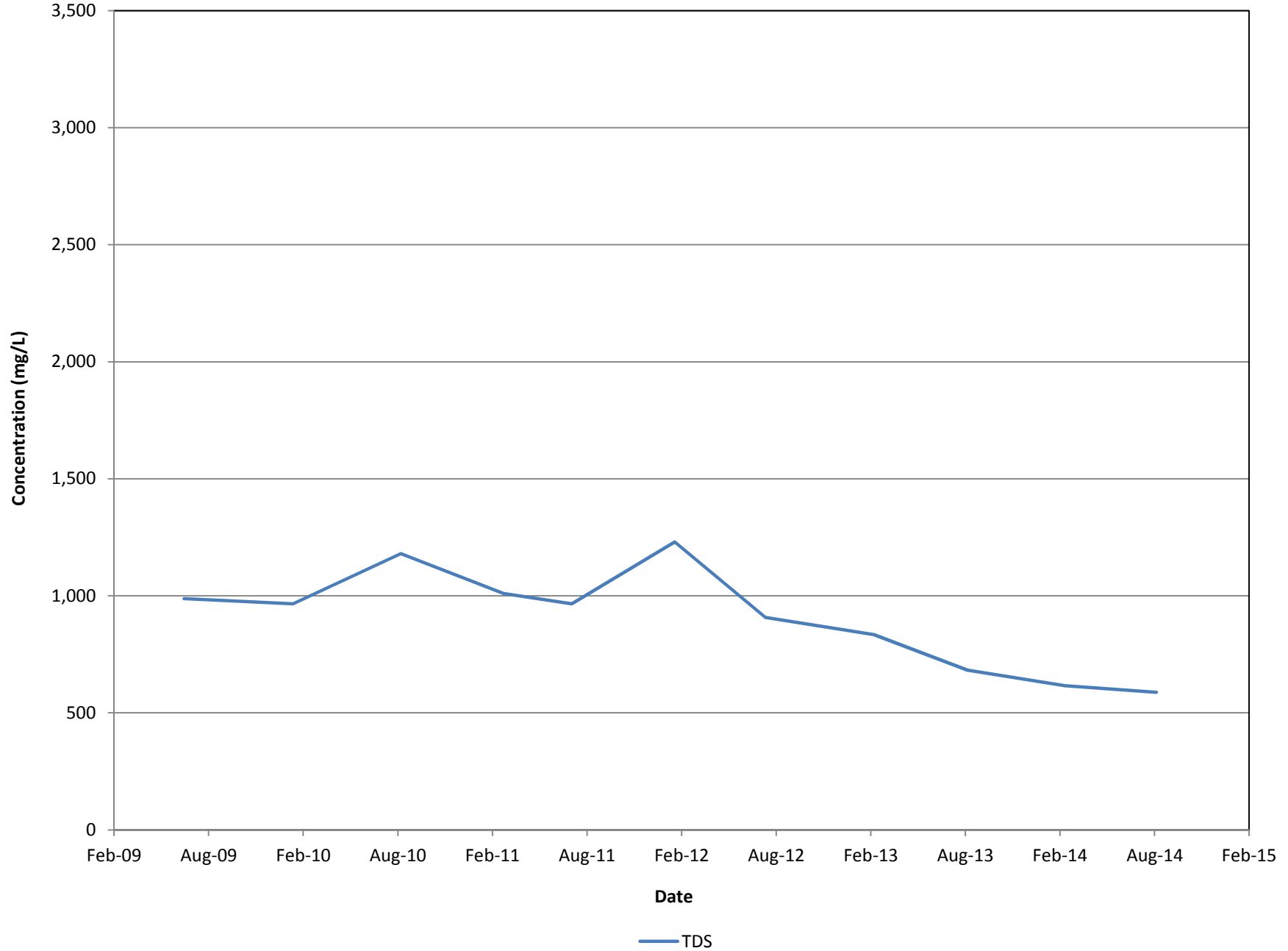
## MW-1: VOC CONCENTRATIONS OVER TIME



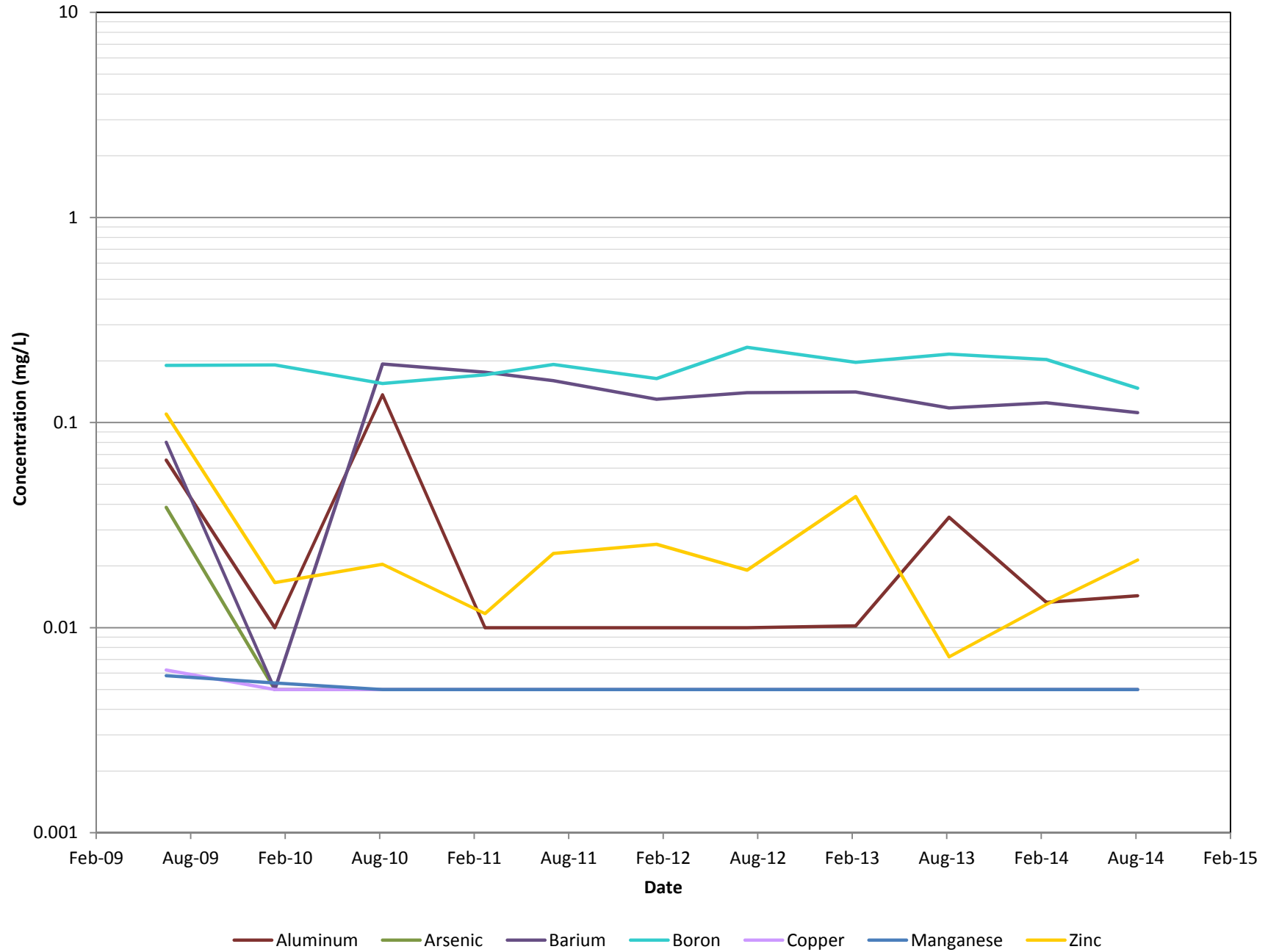
## MW-2: ANION CONCENTRATIONS OVER TIME



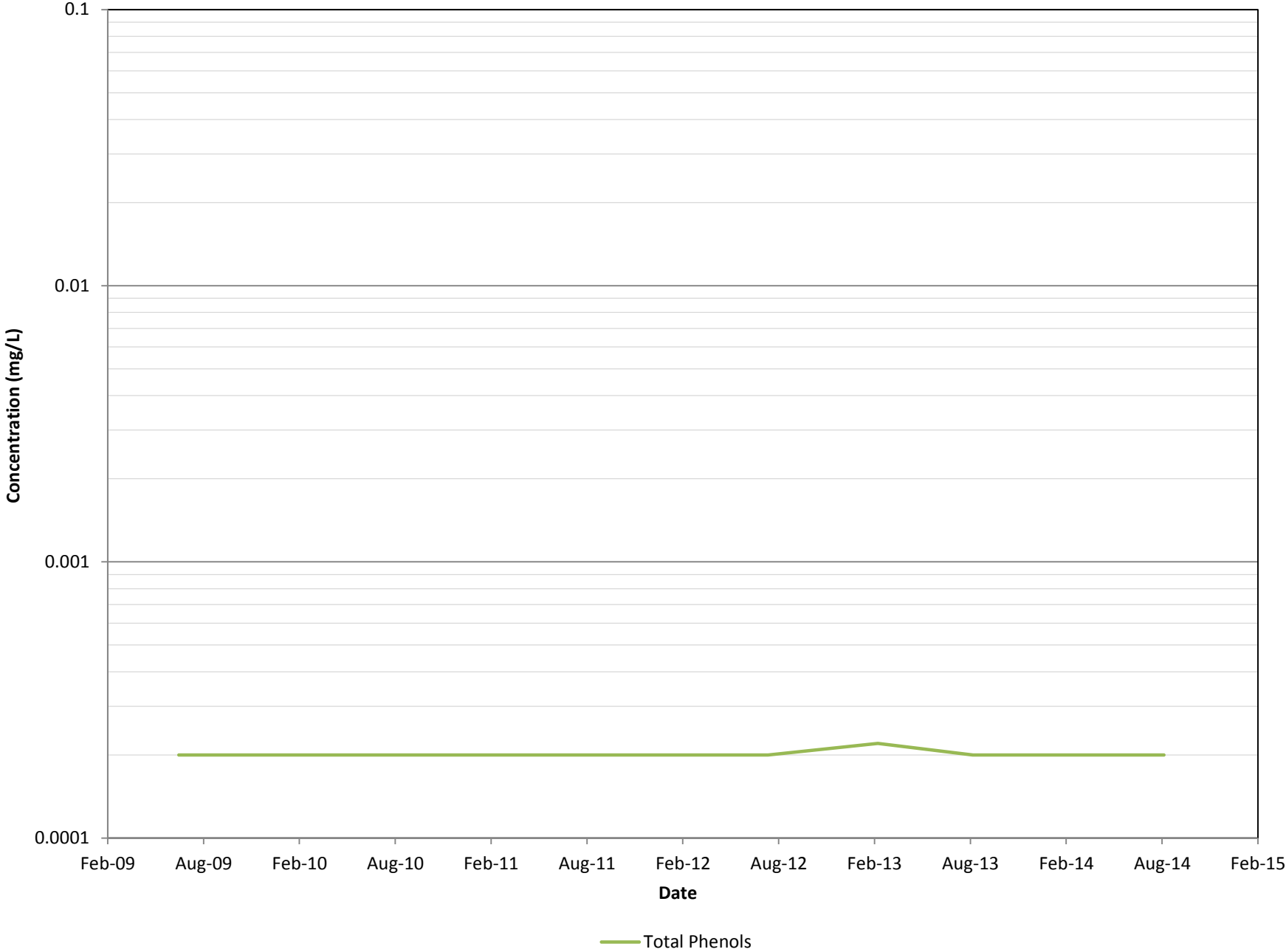
## MW-2: TDS CONCENTRATIONS OVER TIME



## MW-2: METAL CONCENTRATIONS OVER TIME

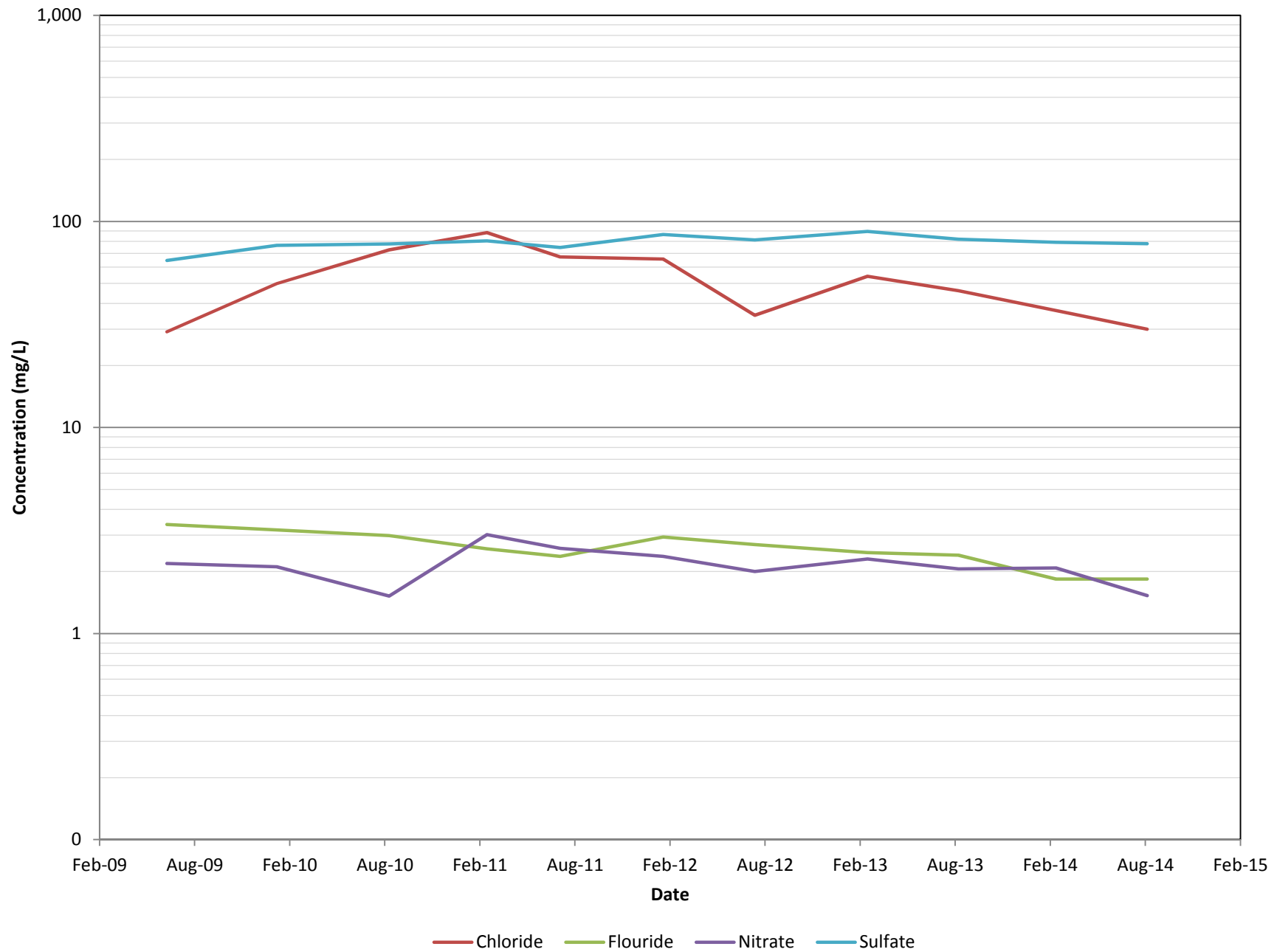


# MW-2: SVOC CONCENTRATIONS OVER TIME

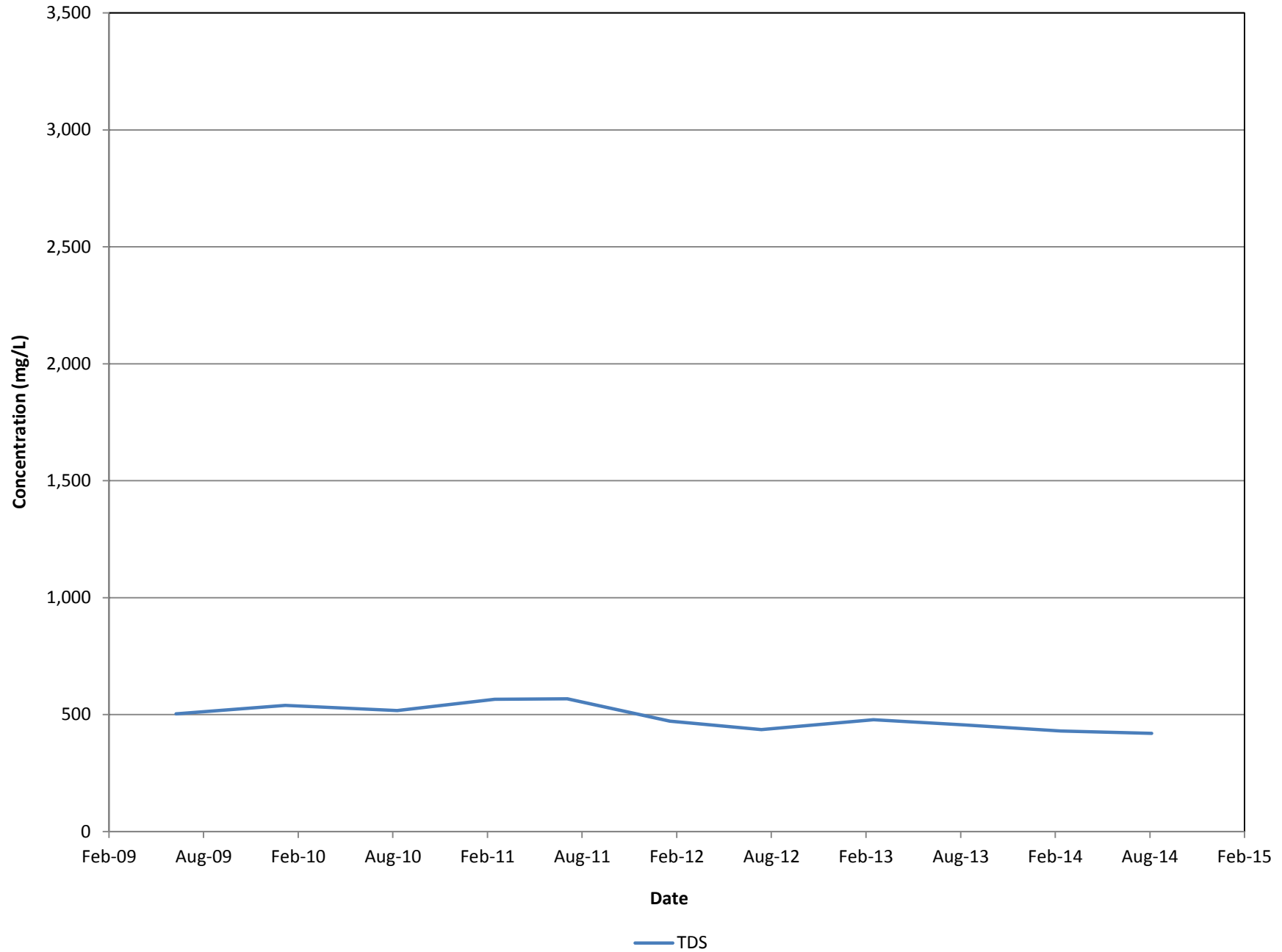




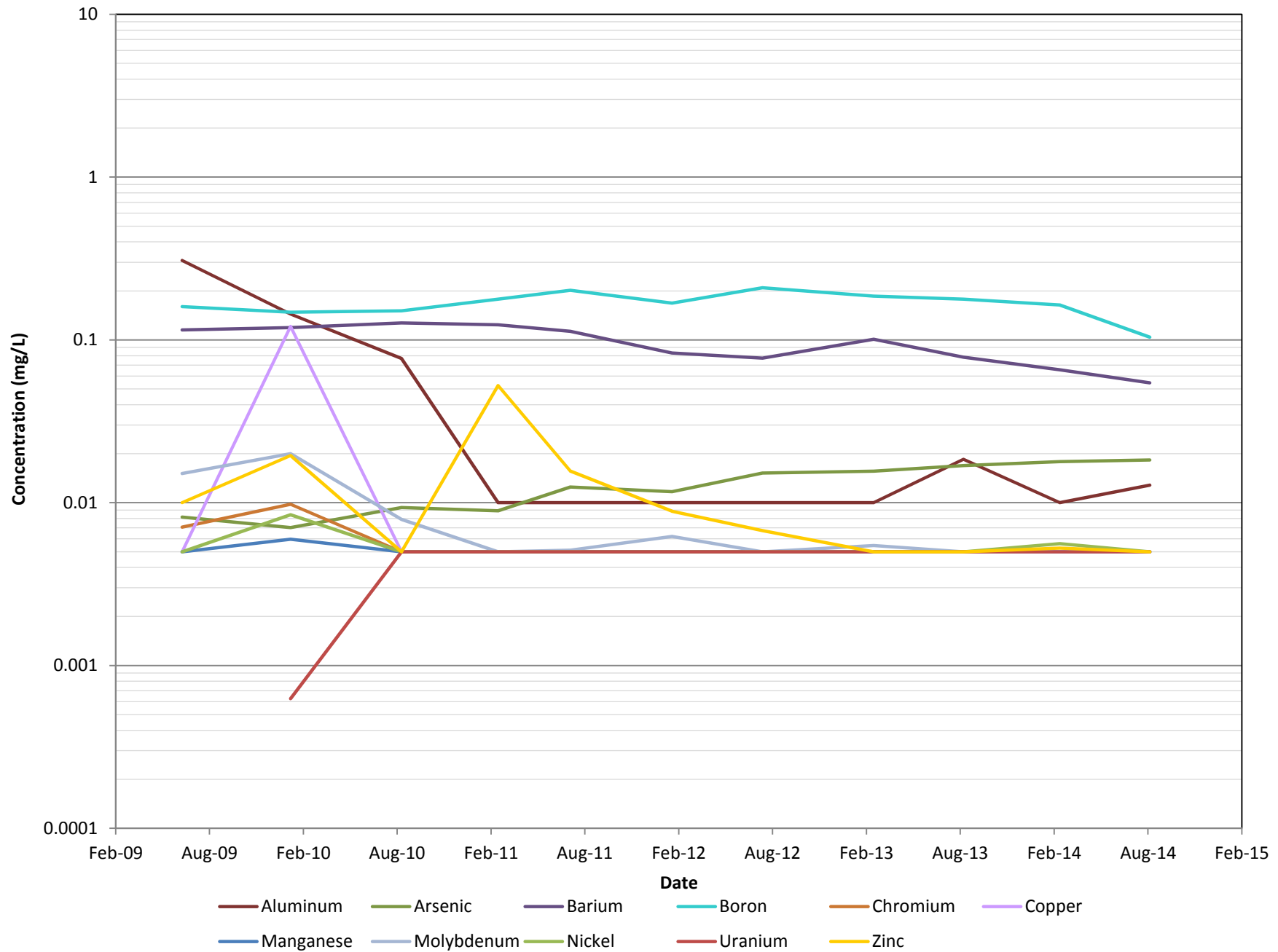
## MW-3: ANION CONCENTRATIONS OVER TIME



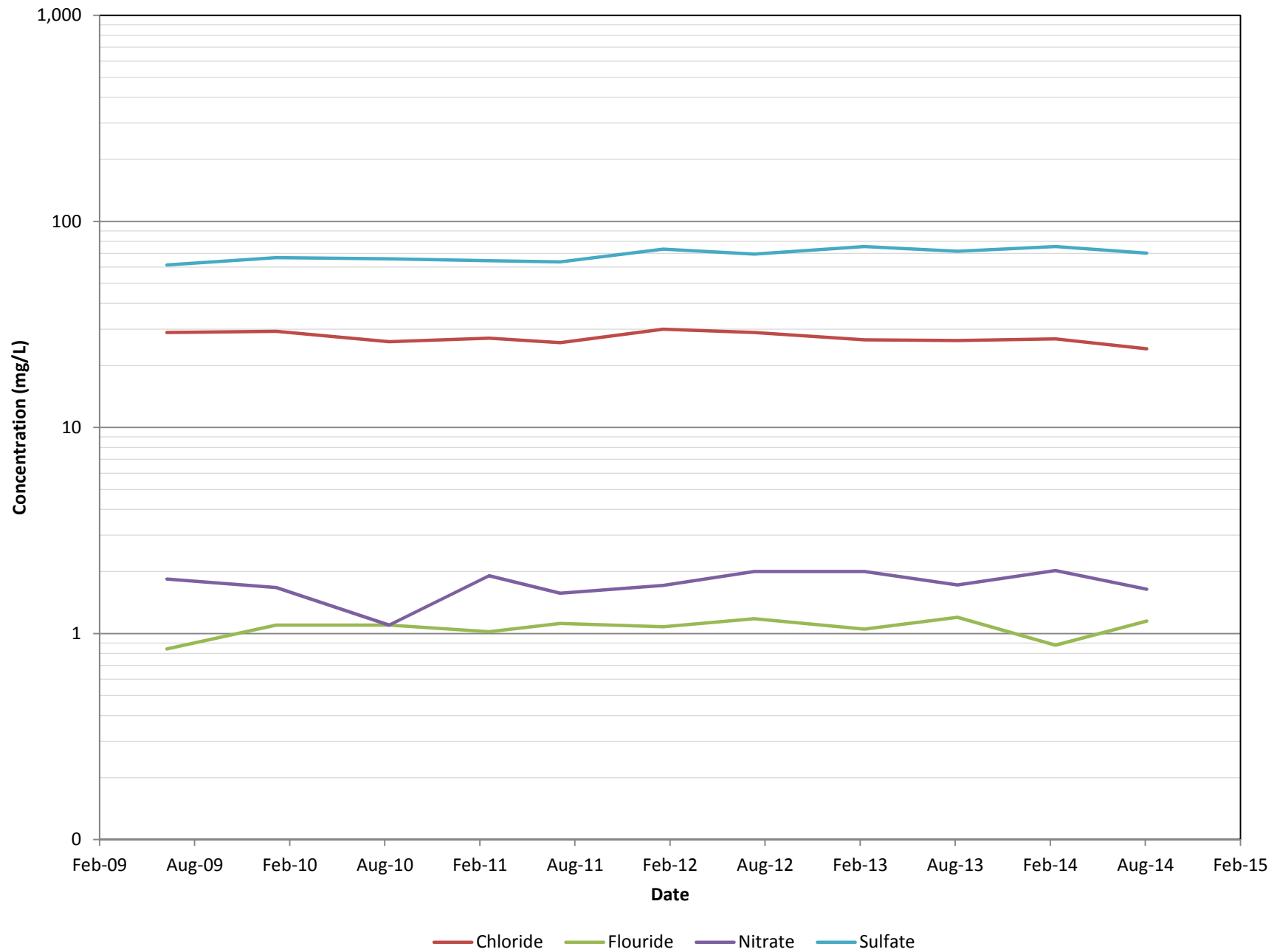
## MW-3: TDS CONCENTRATIONS OVER TIME



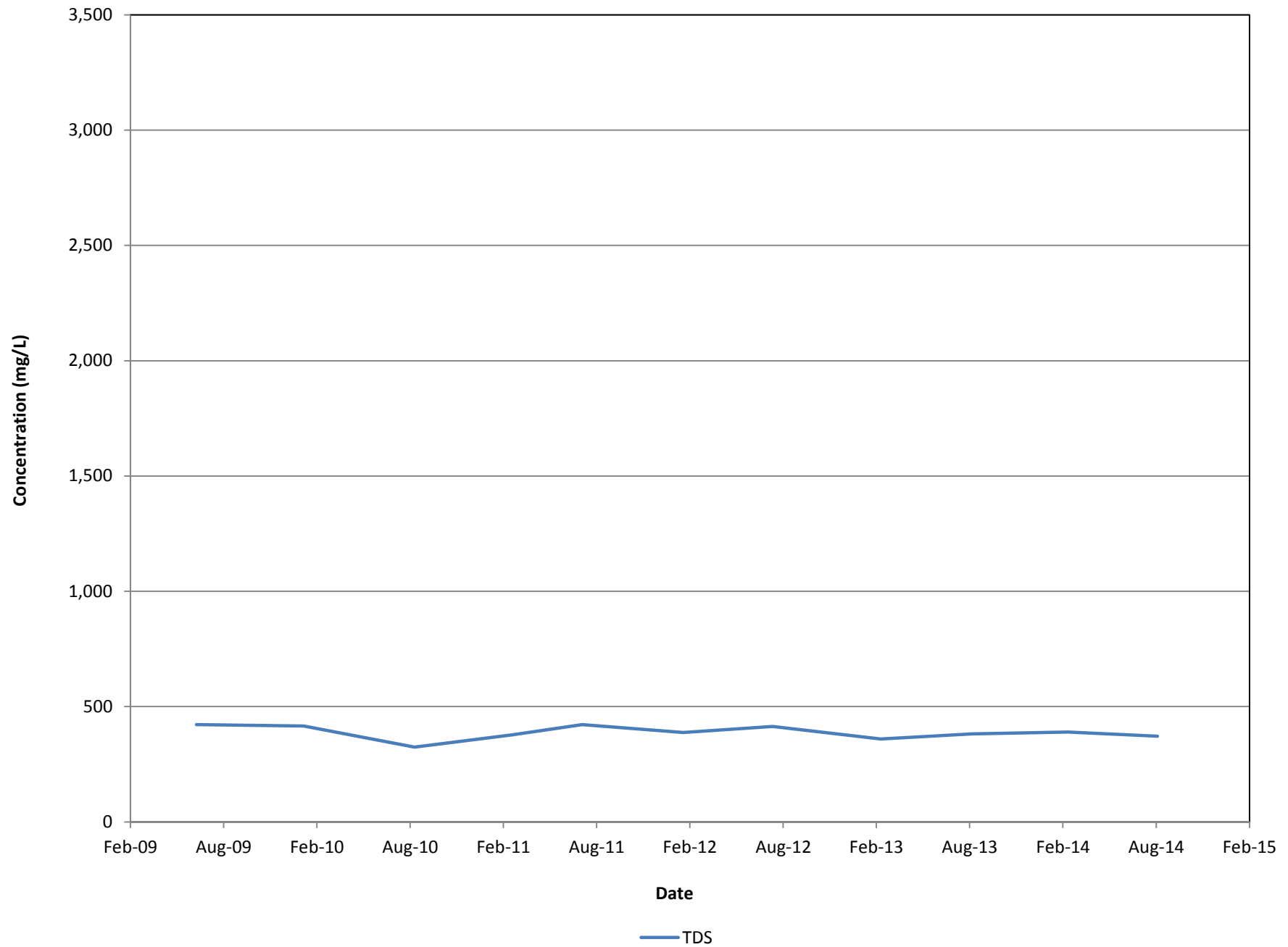
## MW-3: METAL CONCENTRATIONS OVER TIME



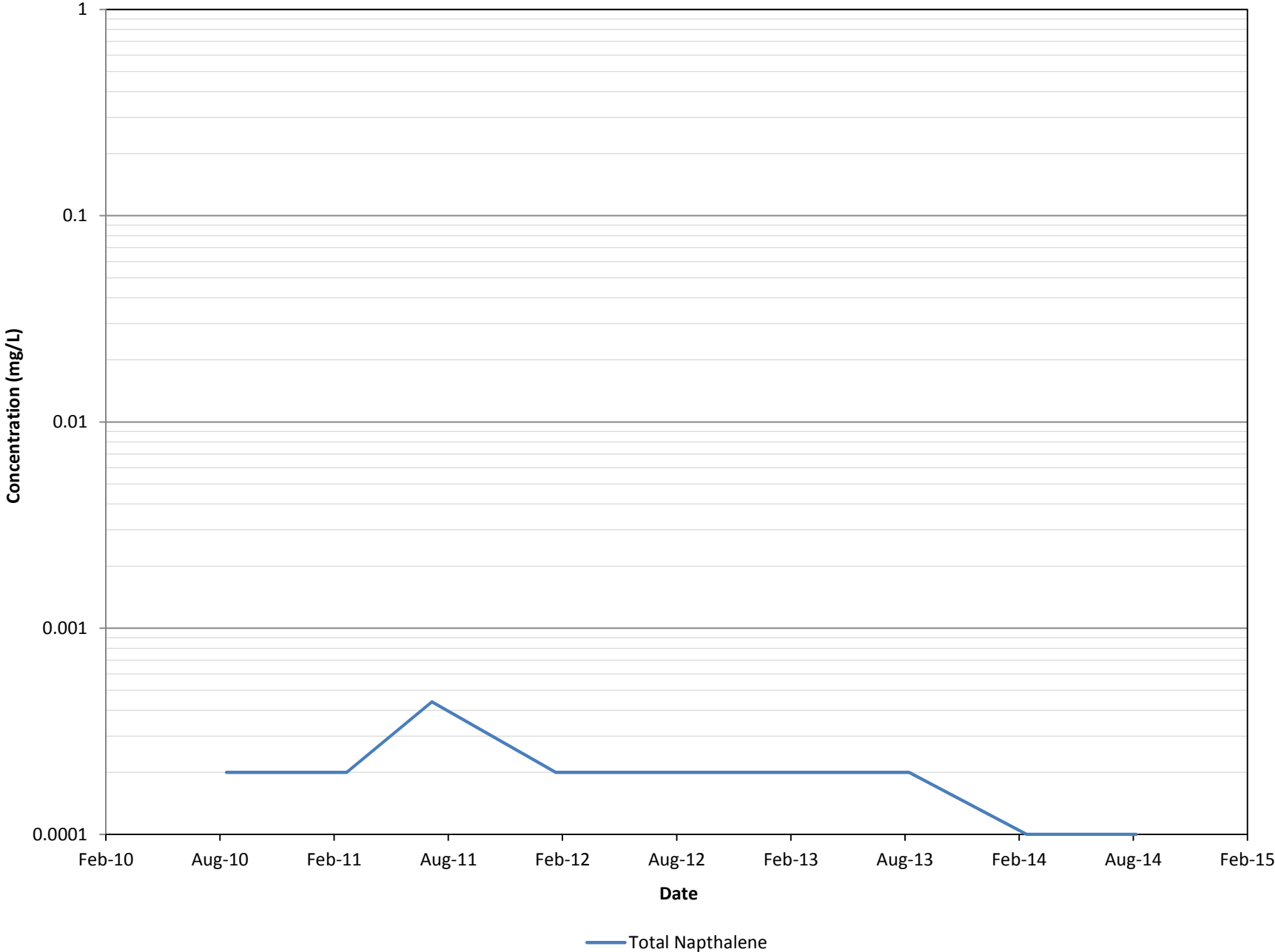
## MW-4: ANION CONCENTRATIONS OVER TIME



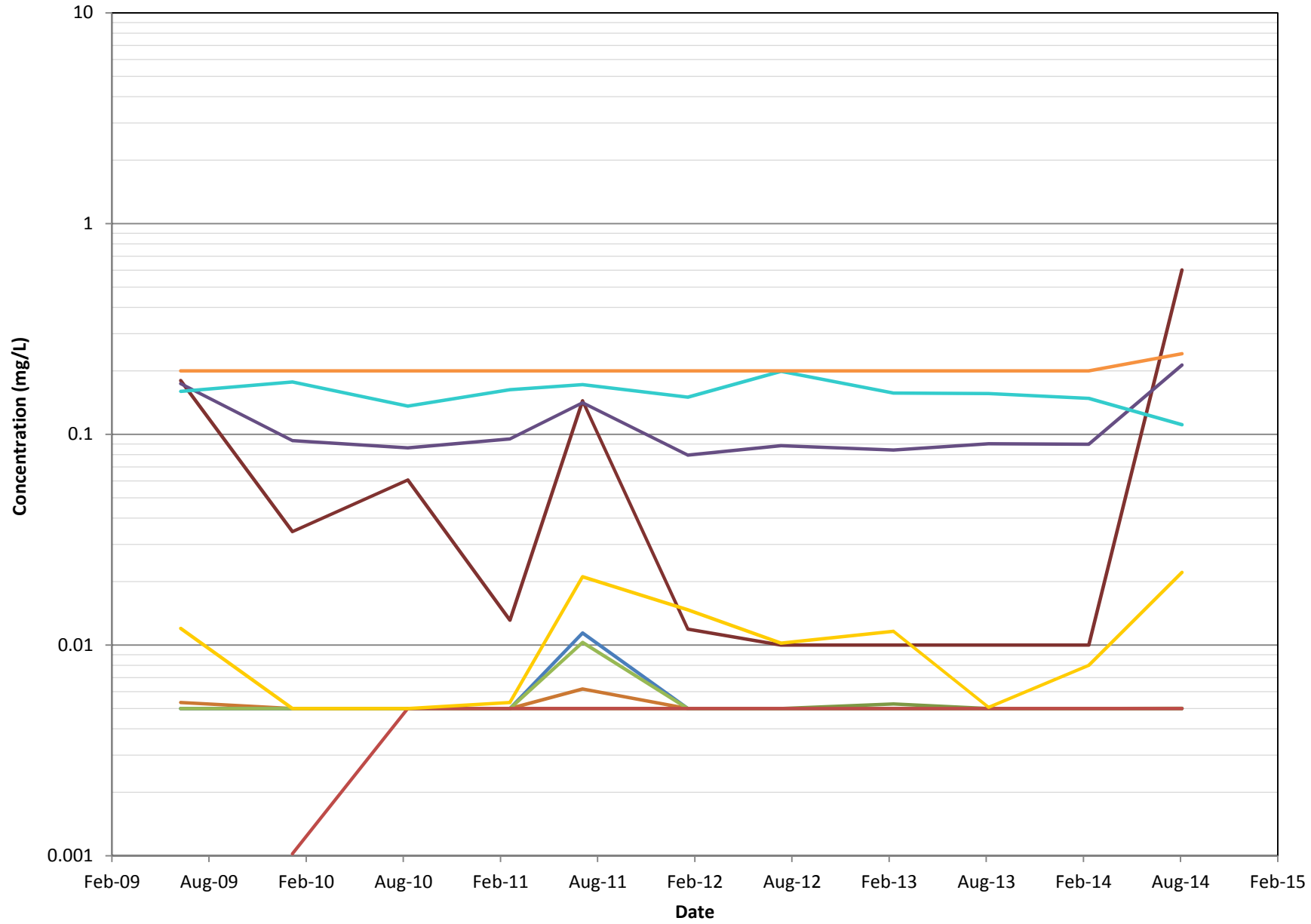
## MW-4: TDS CONCENTRATIONS OVER TIME



MW-4: SVOC CONCENTRATIONS OVER TIME

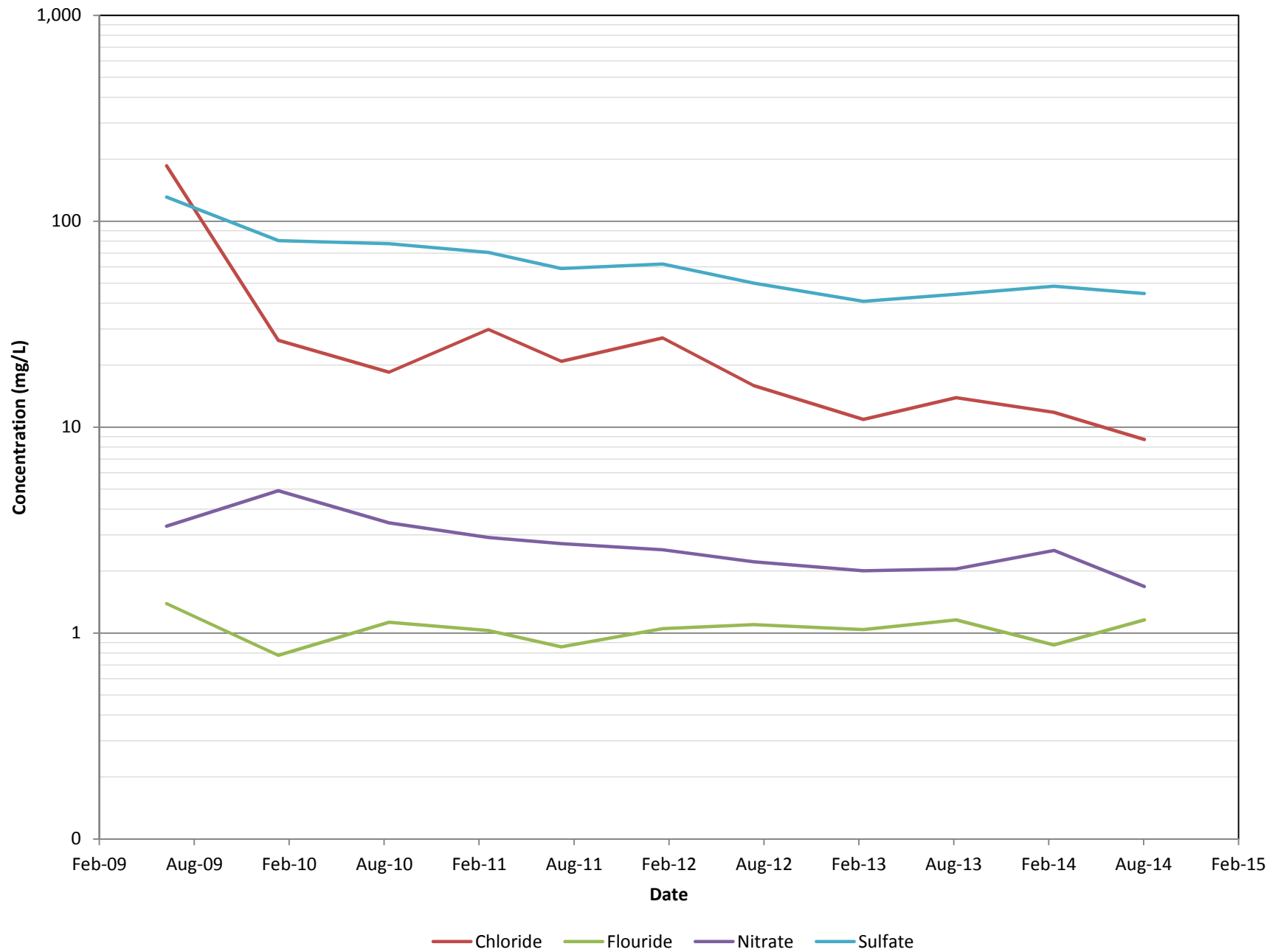


## MW-4: METAL CONCENTRATIONS OVER TIME



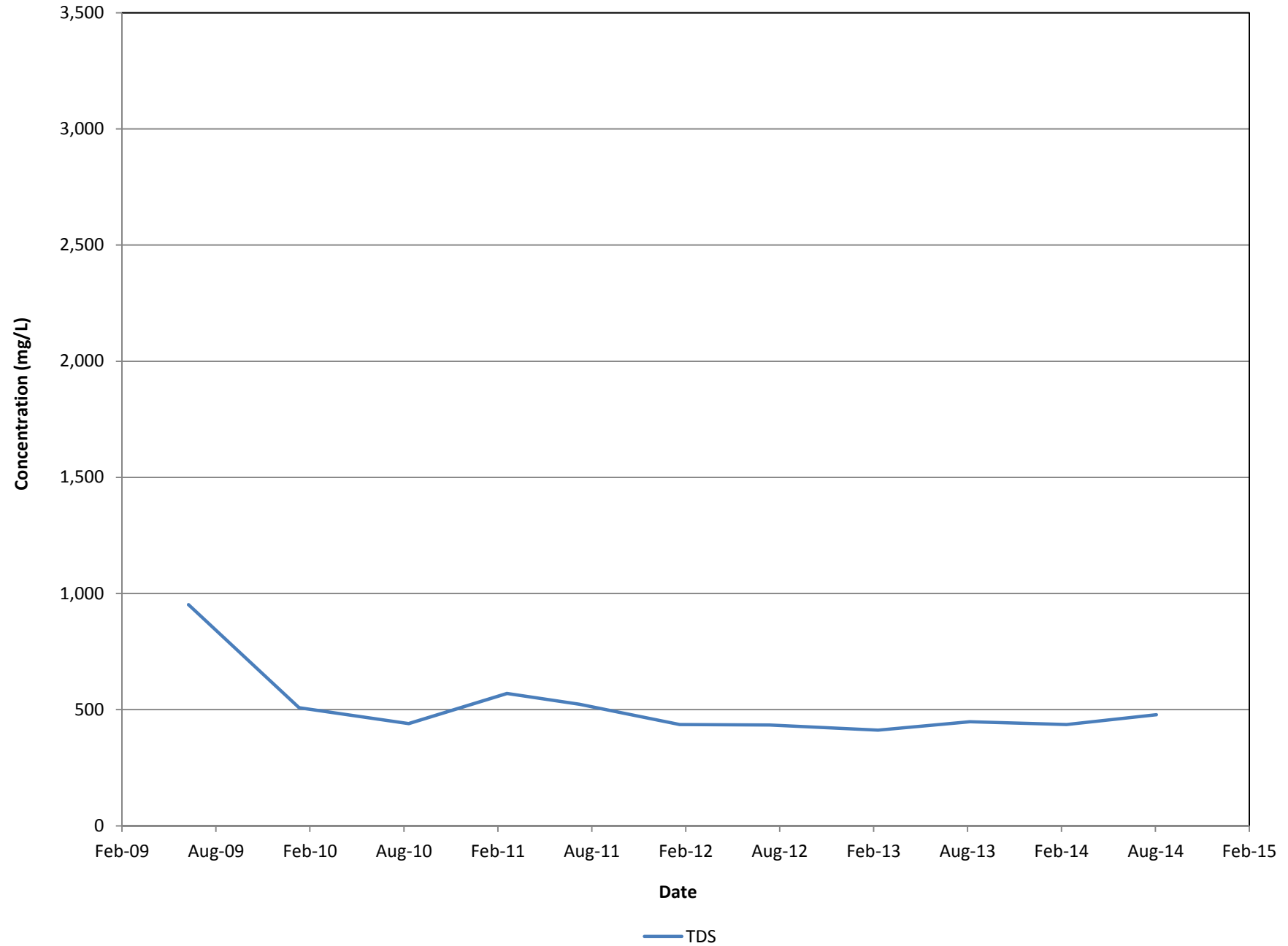
— Aluminum — Arsenic — Barium — Boron — Chromium — Iron — Manganese — Nickel — Uranium — Zinc

## MW-5: ANION CONCENTRATIONS OVER TIME

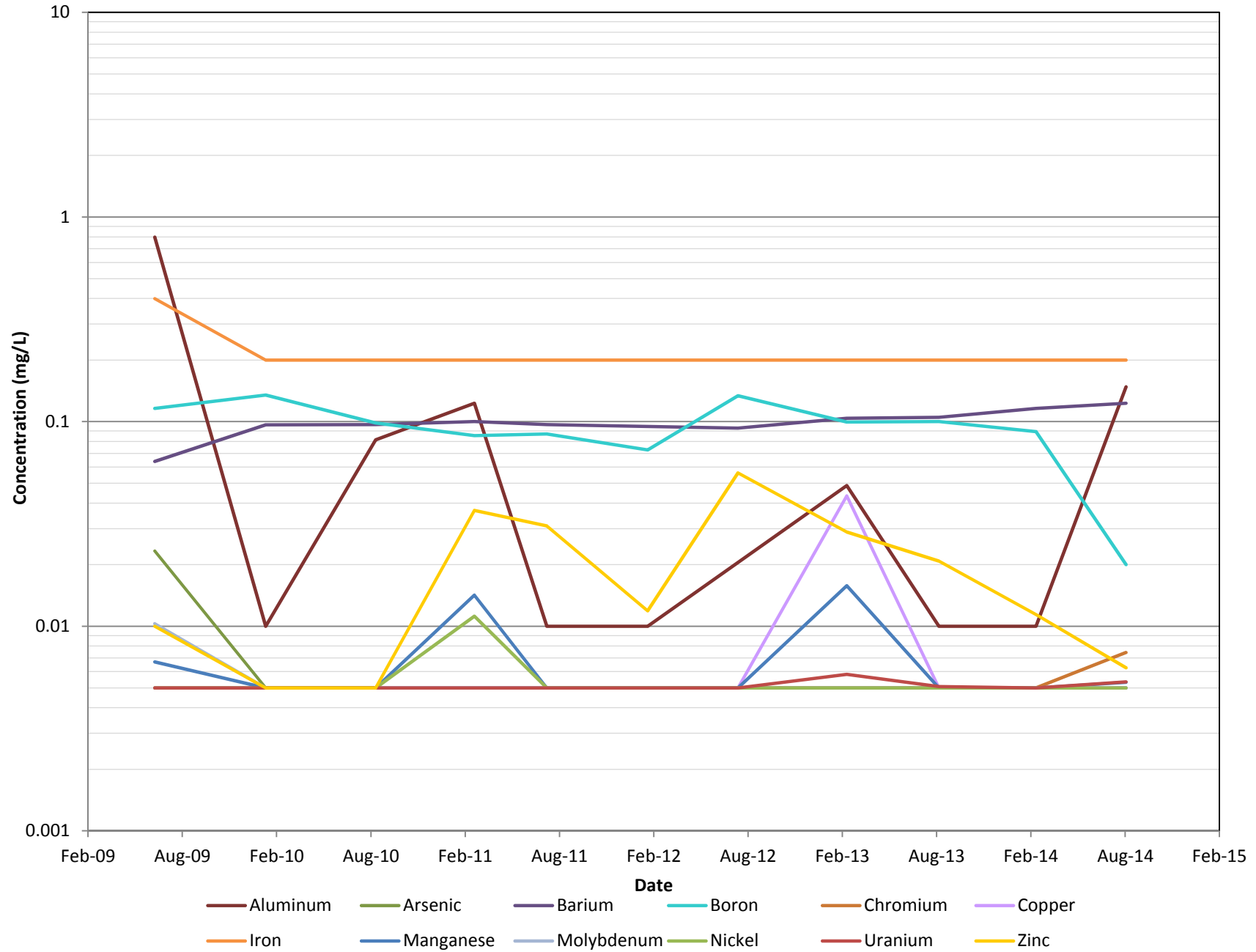




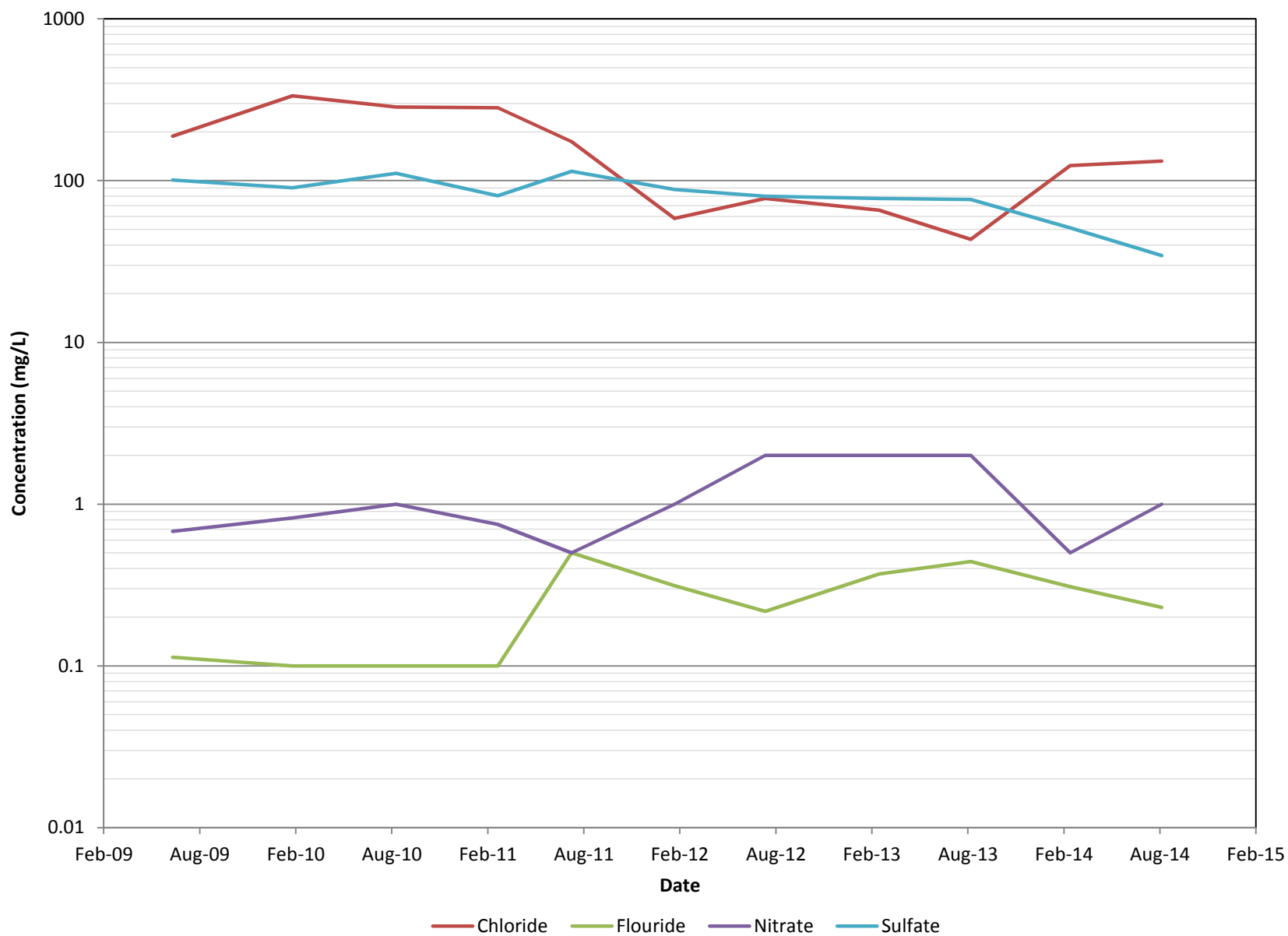
## MW-5: TDS CONCENTRATIONS OVER TIME



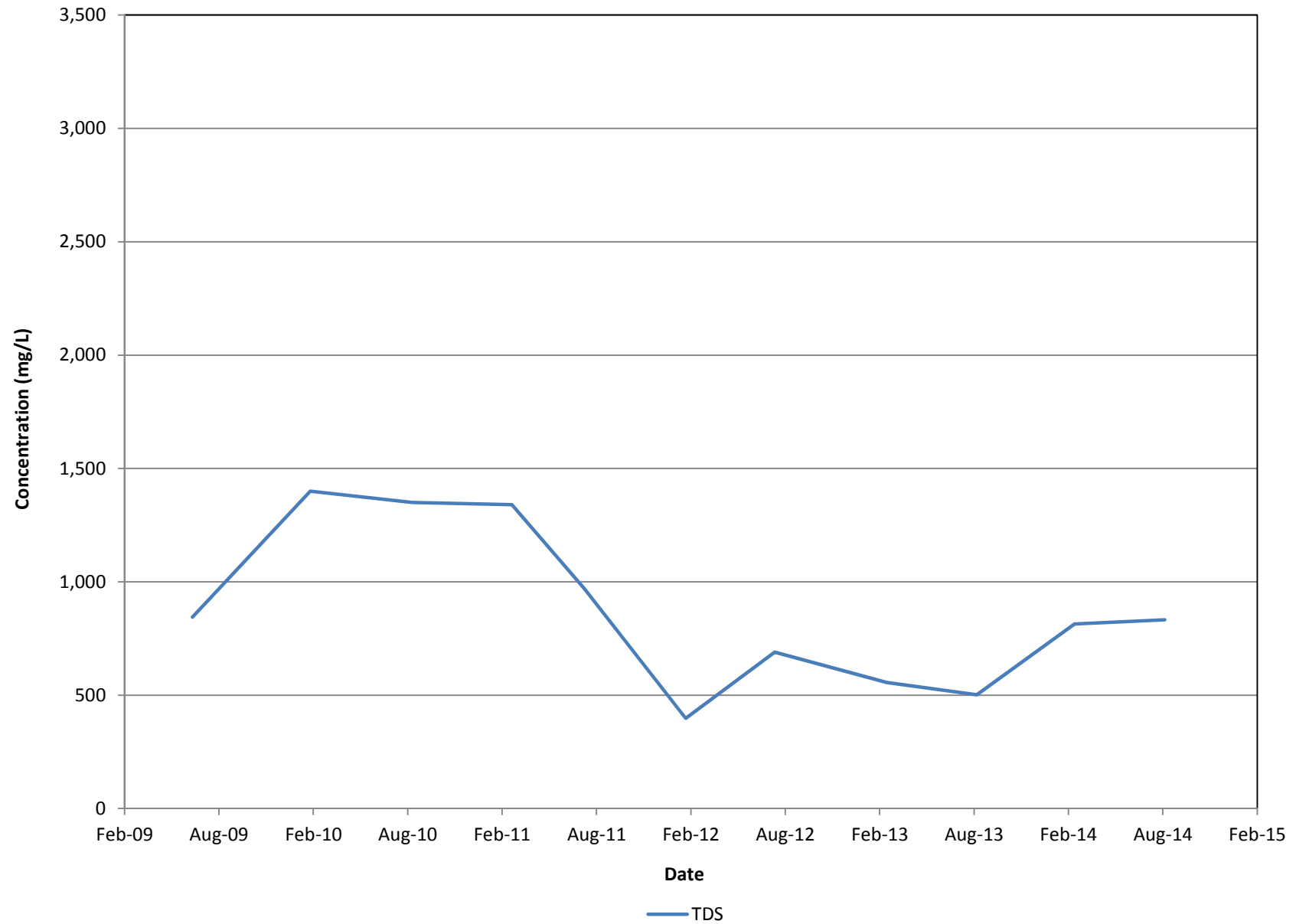
## MW-5: METAL CONCENTRATIONS OVER TIME



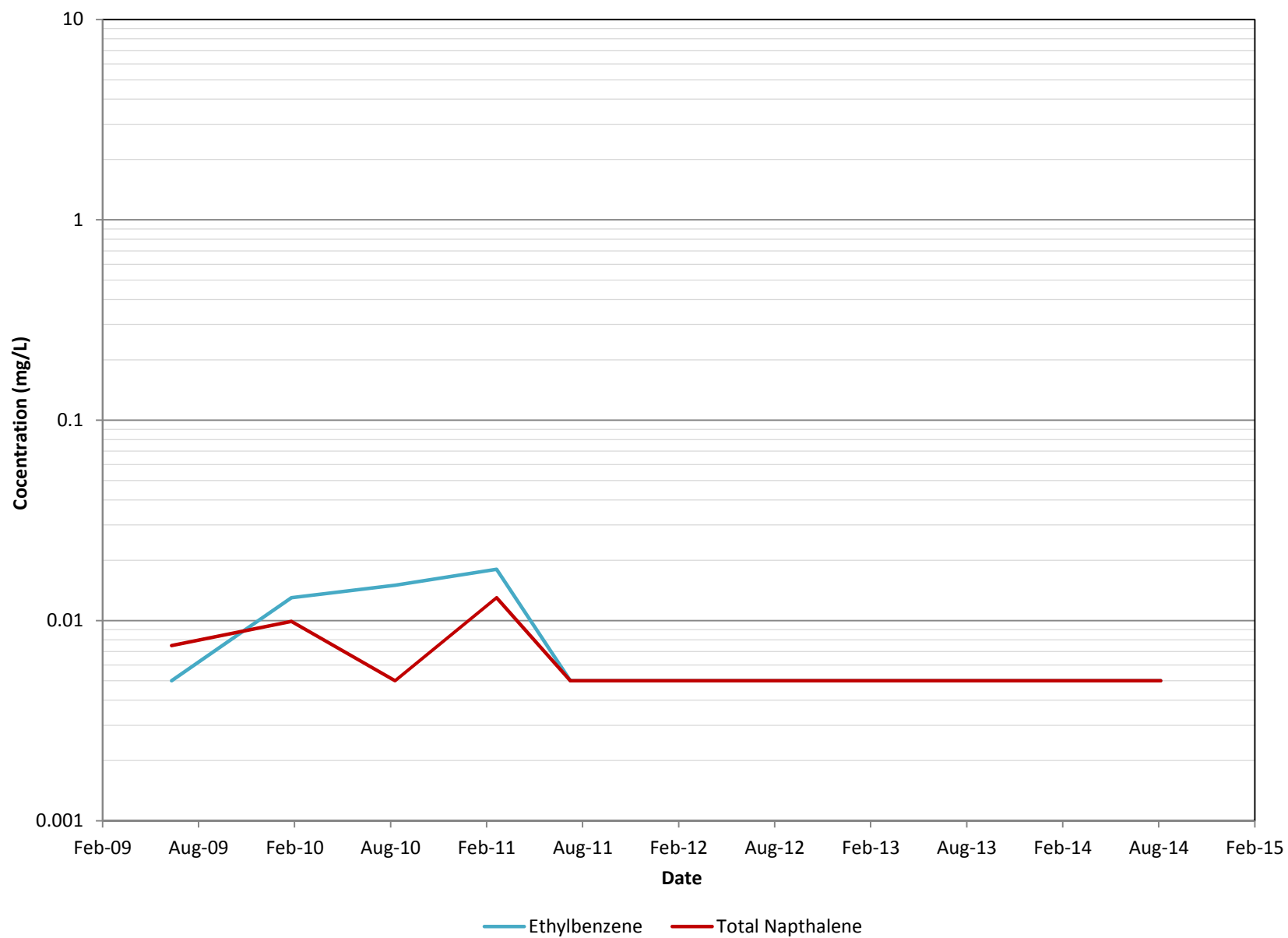
## MW-6: ANION CONCENTRATIONS OVER TIME



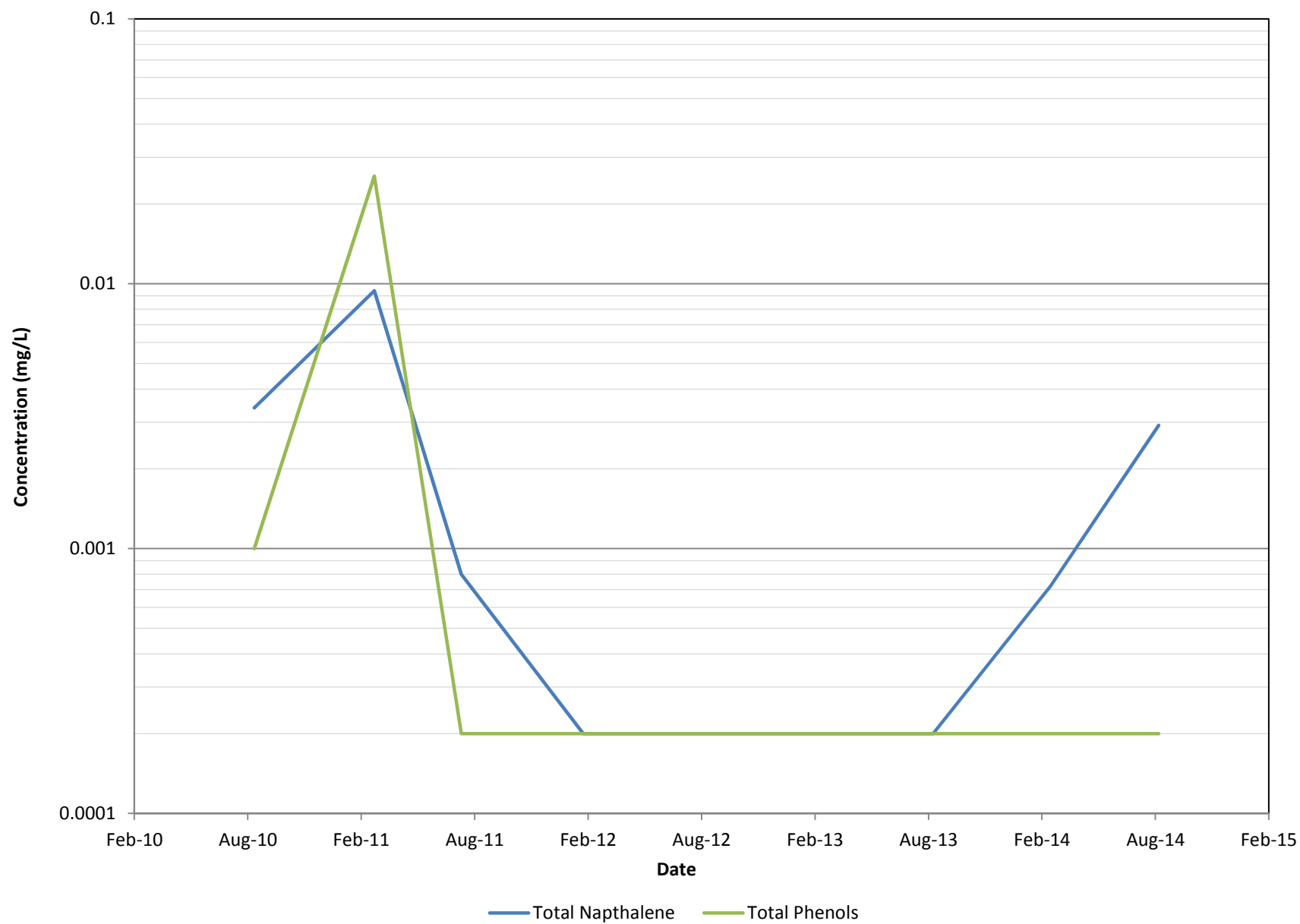
## MW-6: TDS CONCENTRATIONS OVER TIME



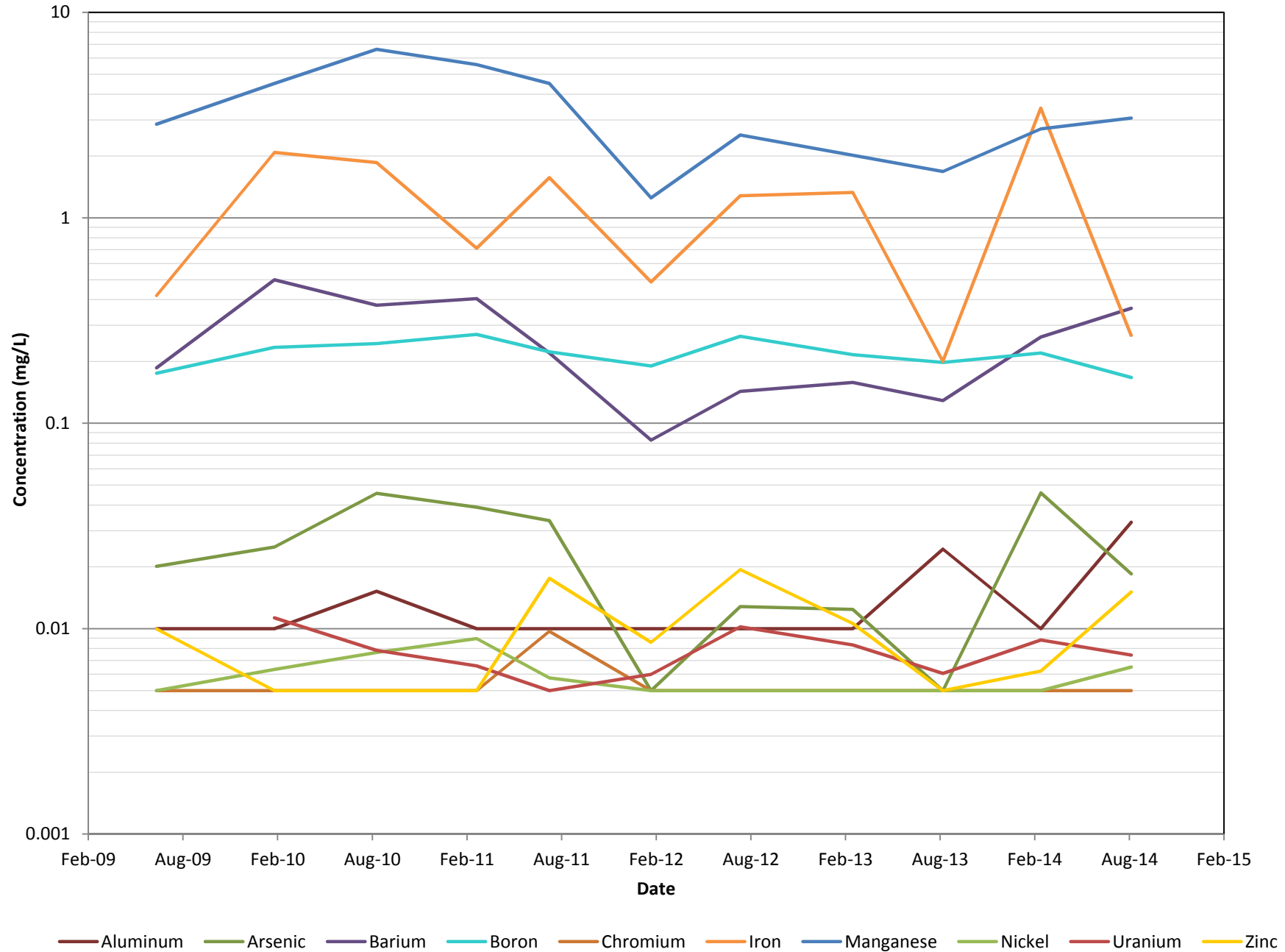
## MW-6: VOC CONCENTRATIONS OVER TIME



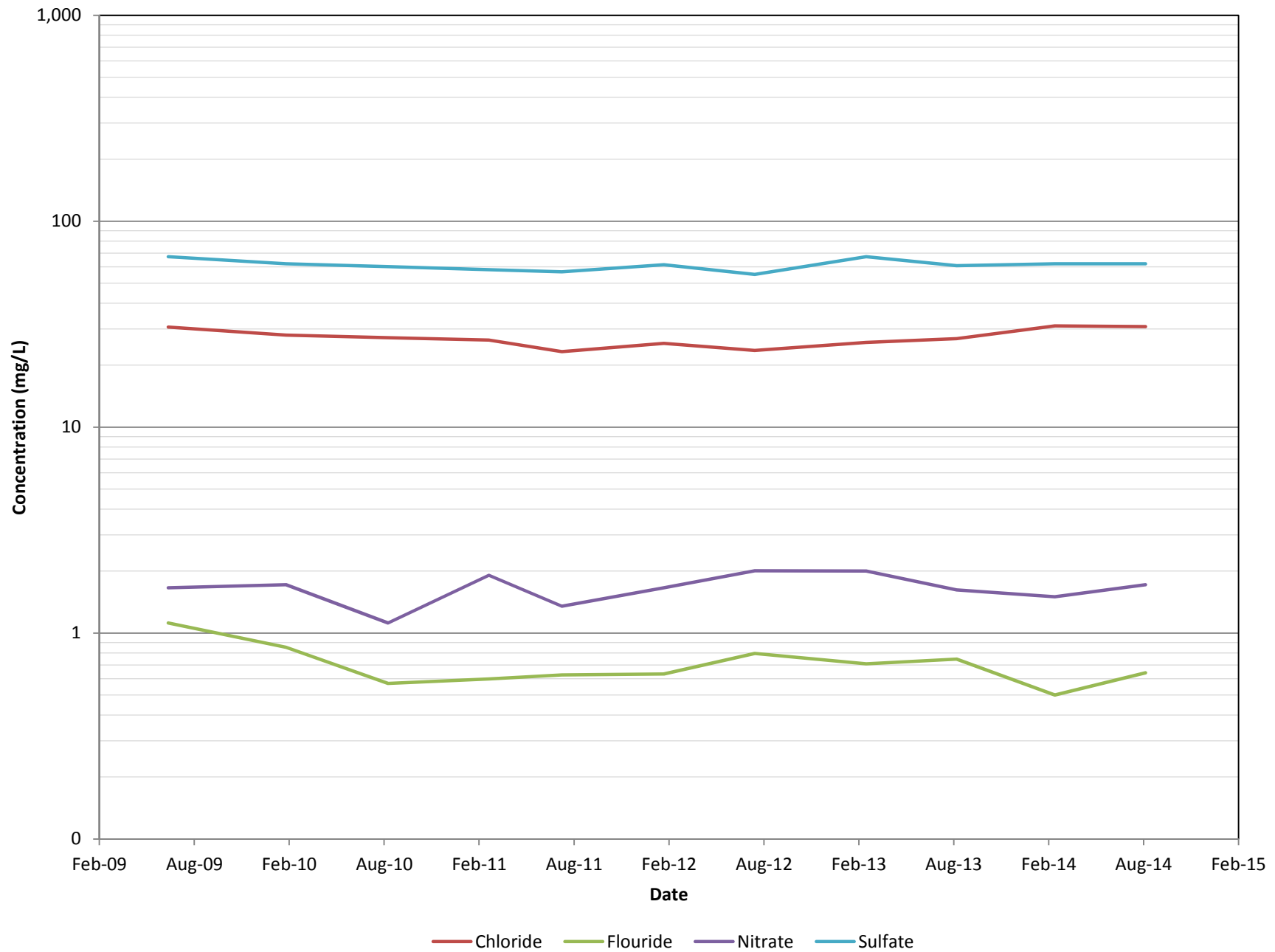
## MW-6: SVOC CONCENTRATIONS OVER TIME



## MW-6: METAL CONCENTRATIONS OVER TIME

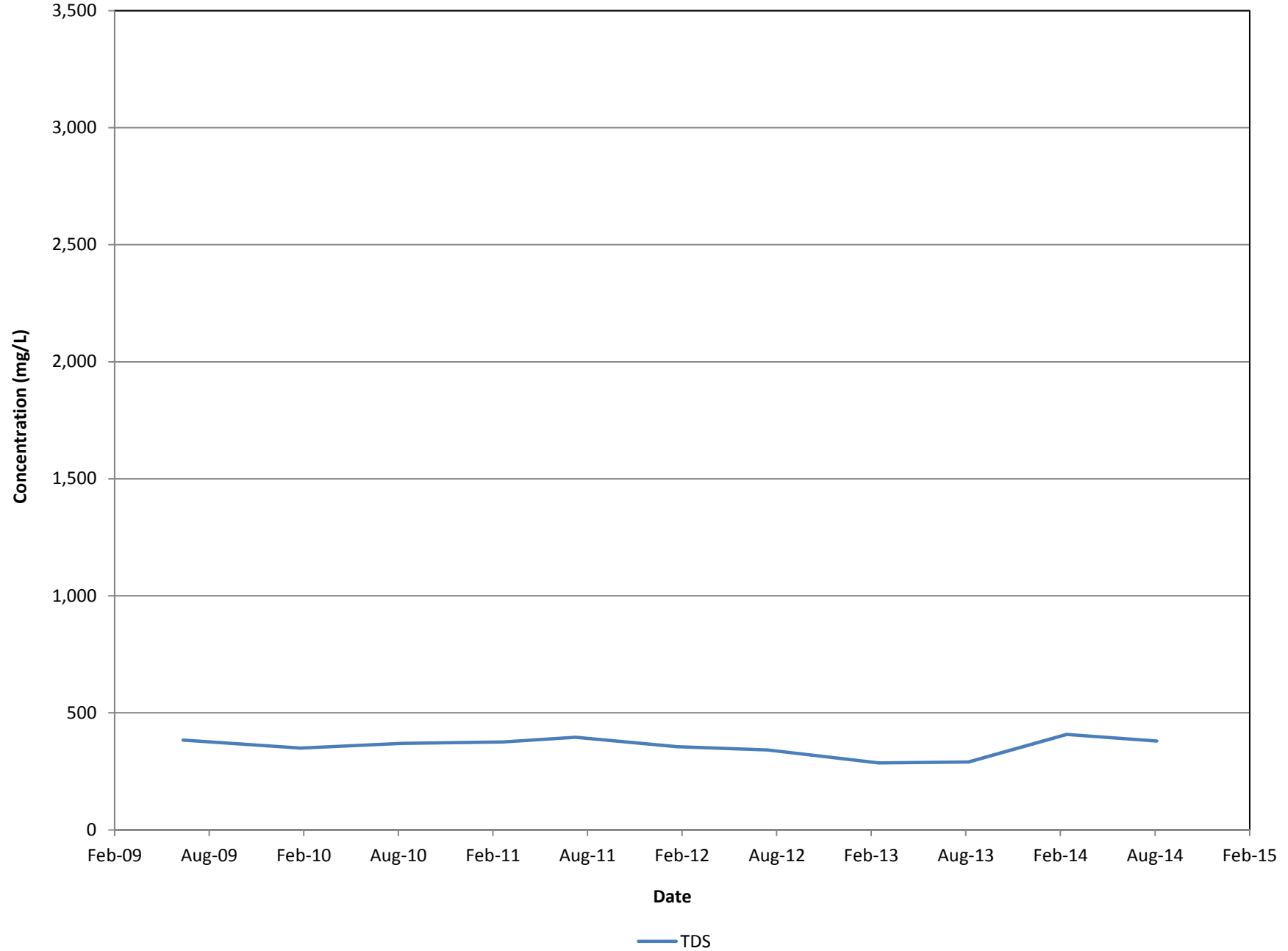


## MW-7: ANION CONCENTRATIONS OVER TIME

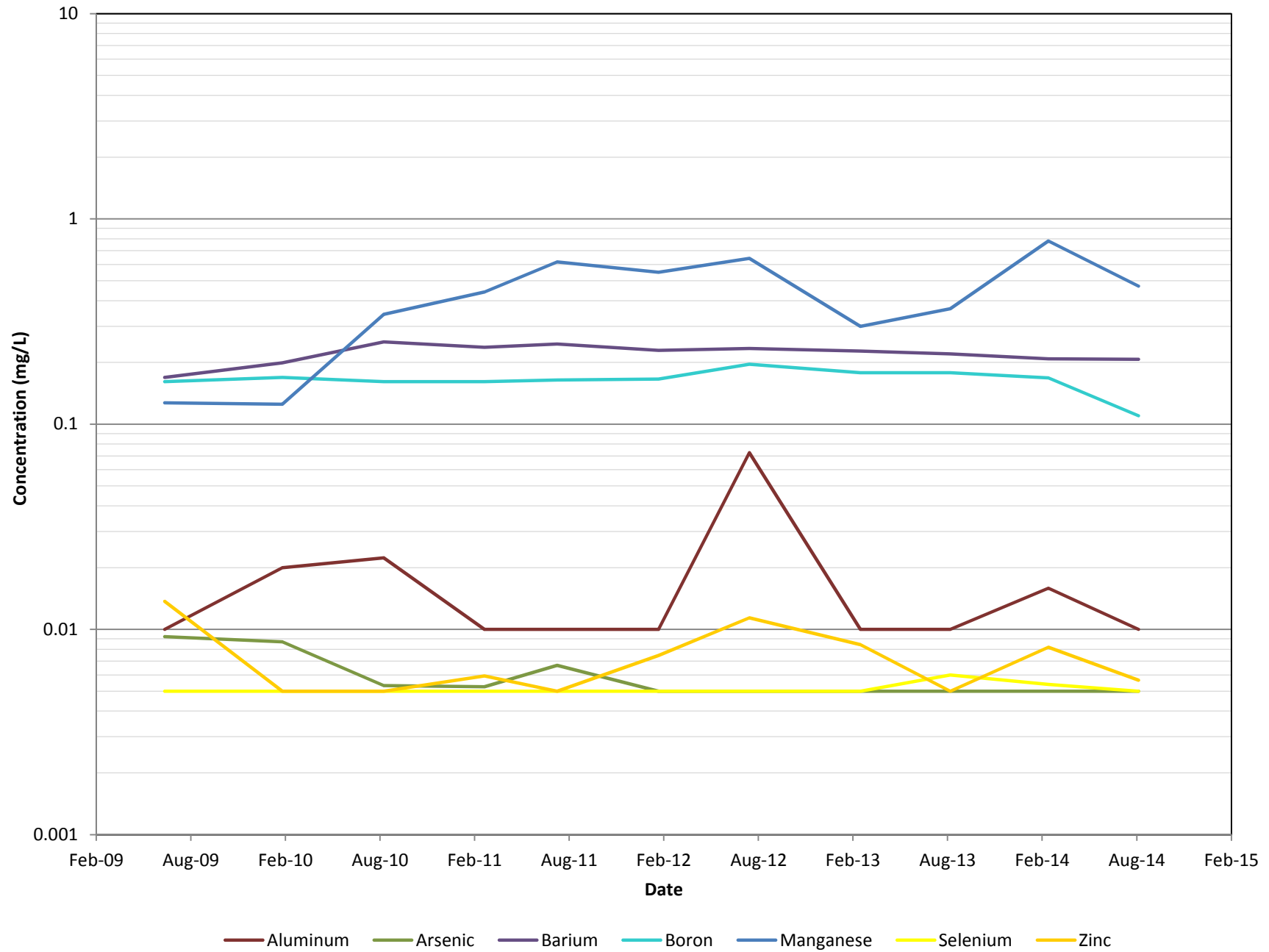




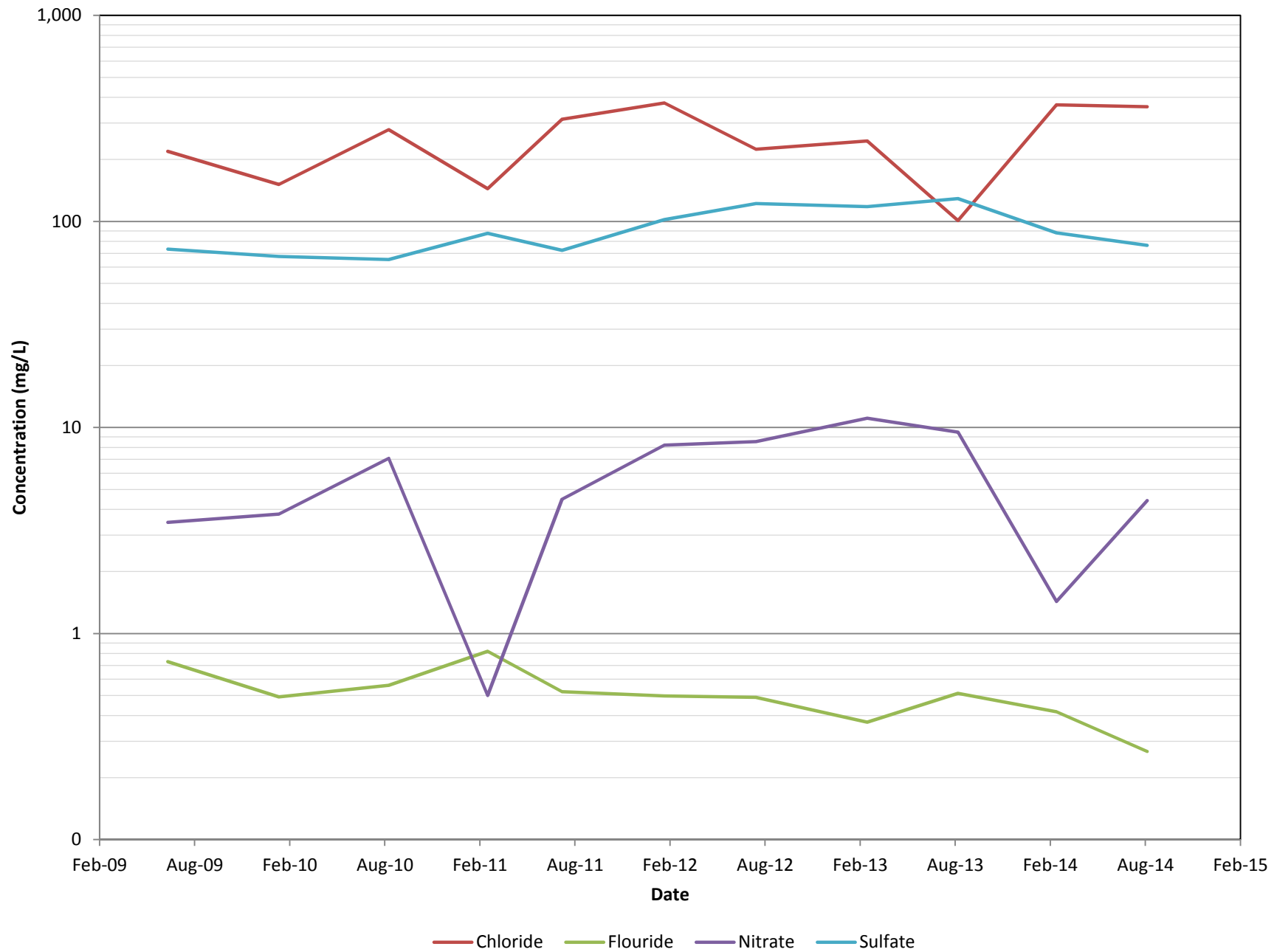
## MW-7: TDS CONCENTRATIONS OVER TIME



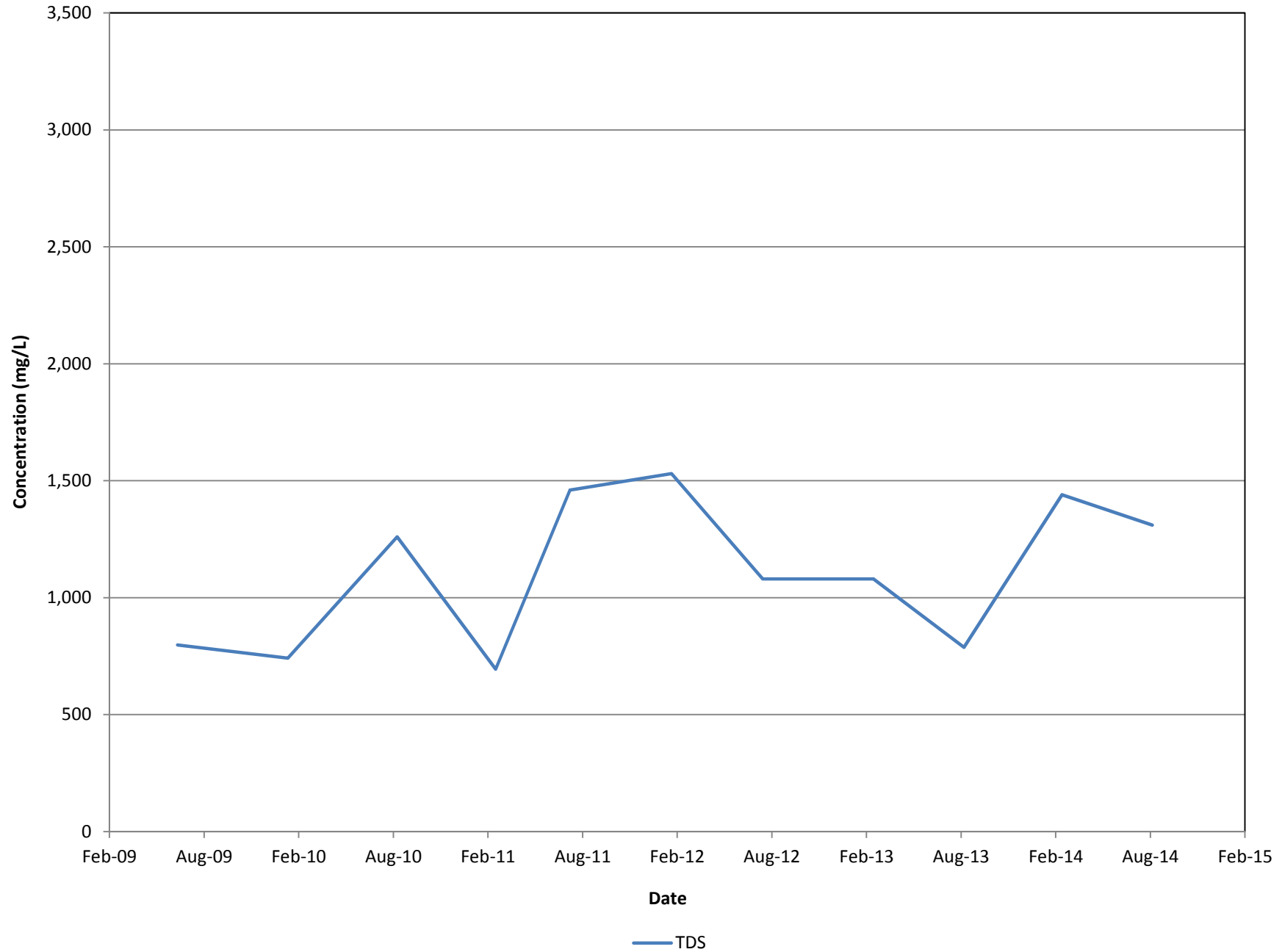
## MW-7: METAL CONCENTRATIONS OVER TIME



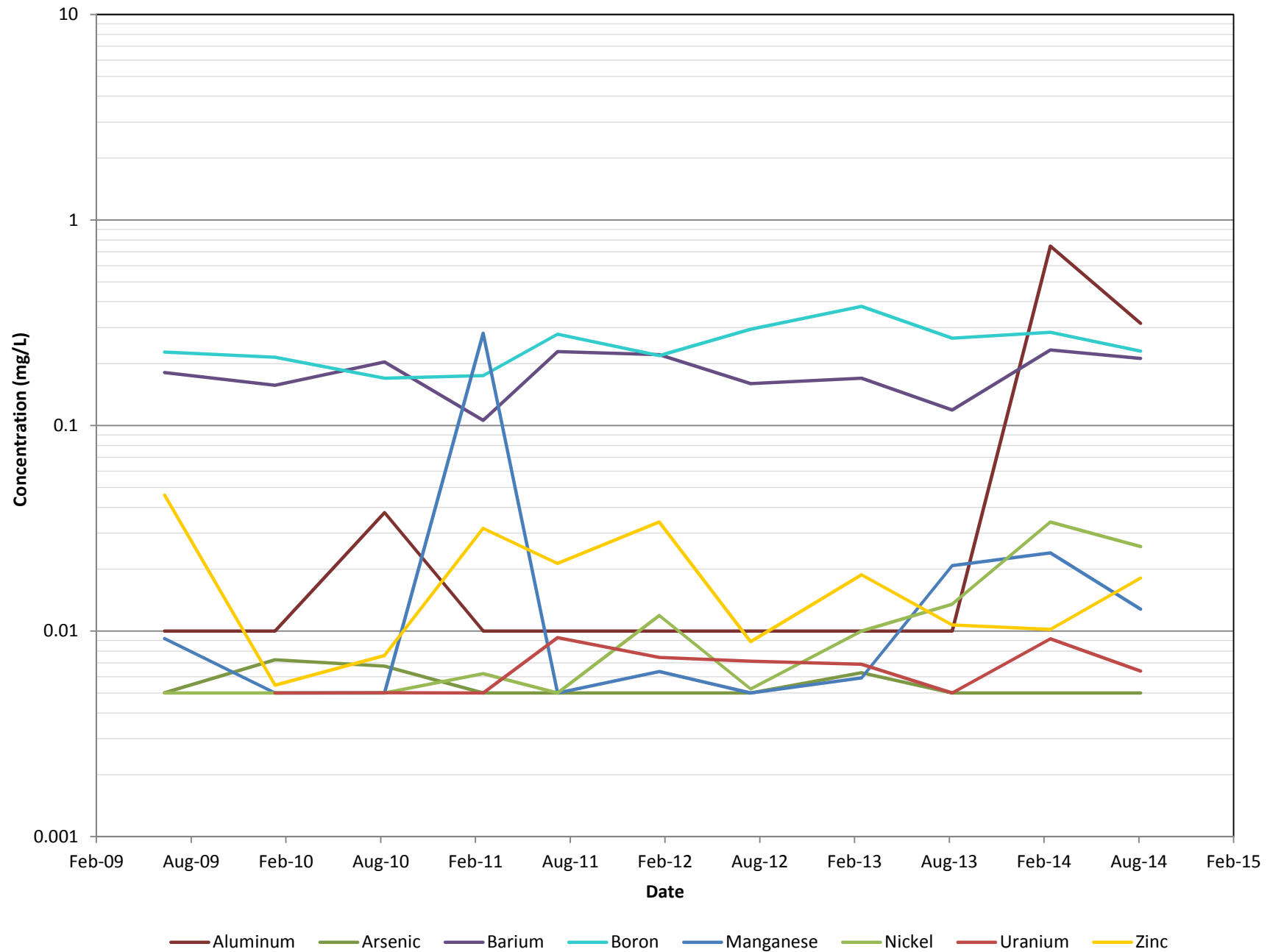
## MW-8: ANION CONCENTRATIONS OVER TIME



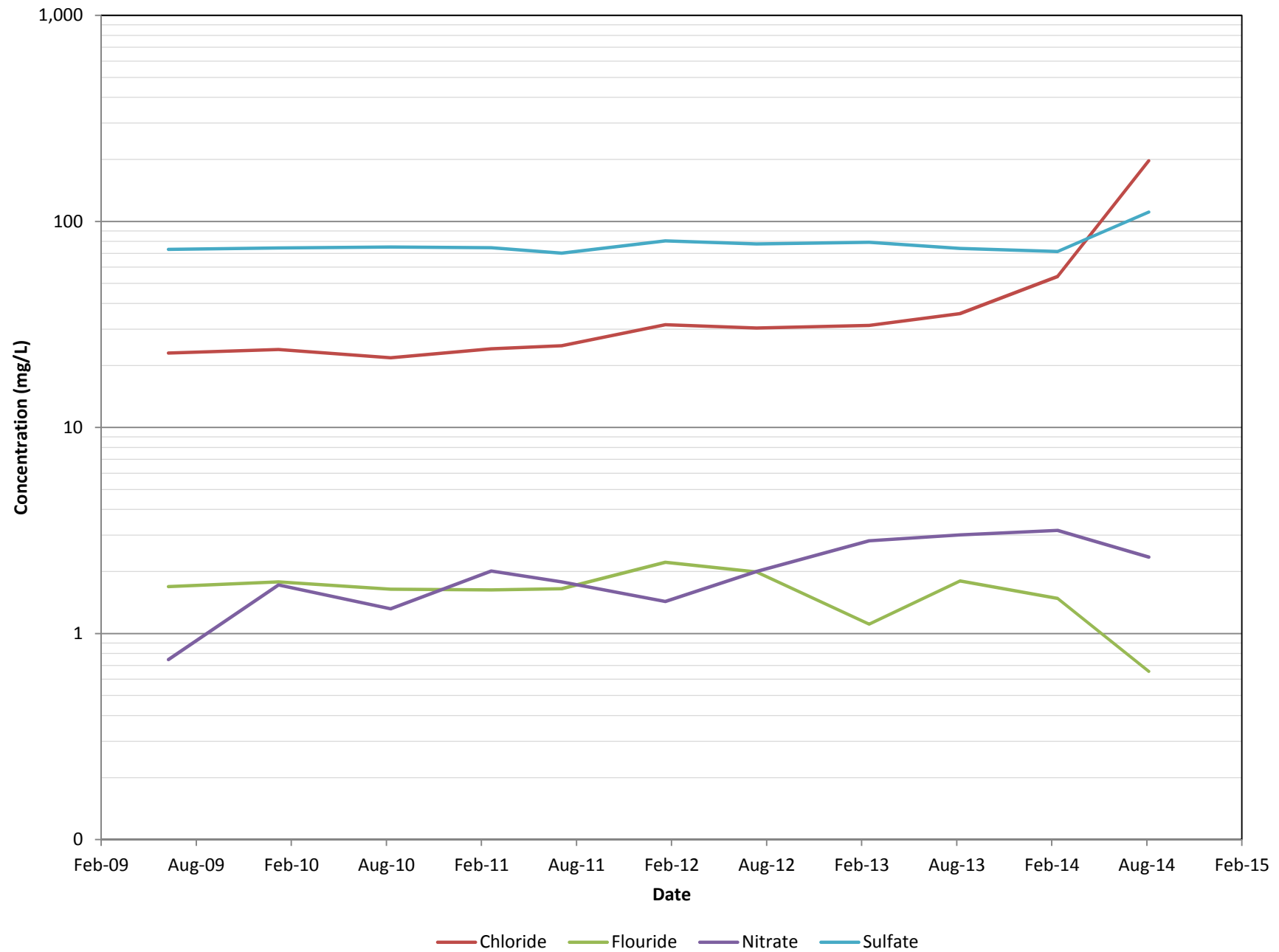
## MW-8: TDS CONCENTRATIONS OVER TIME



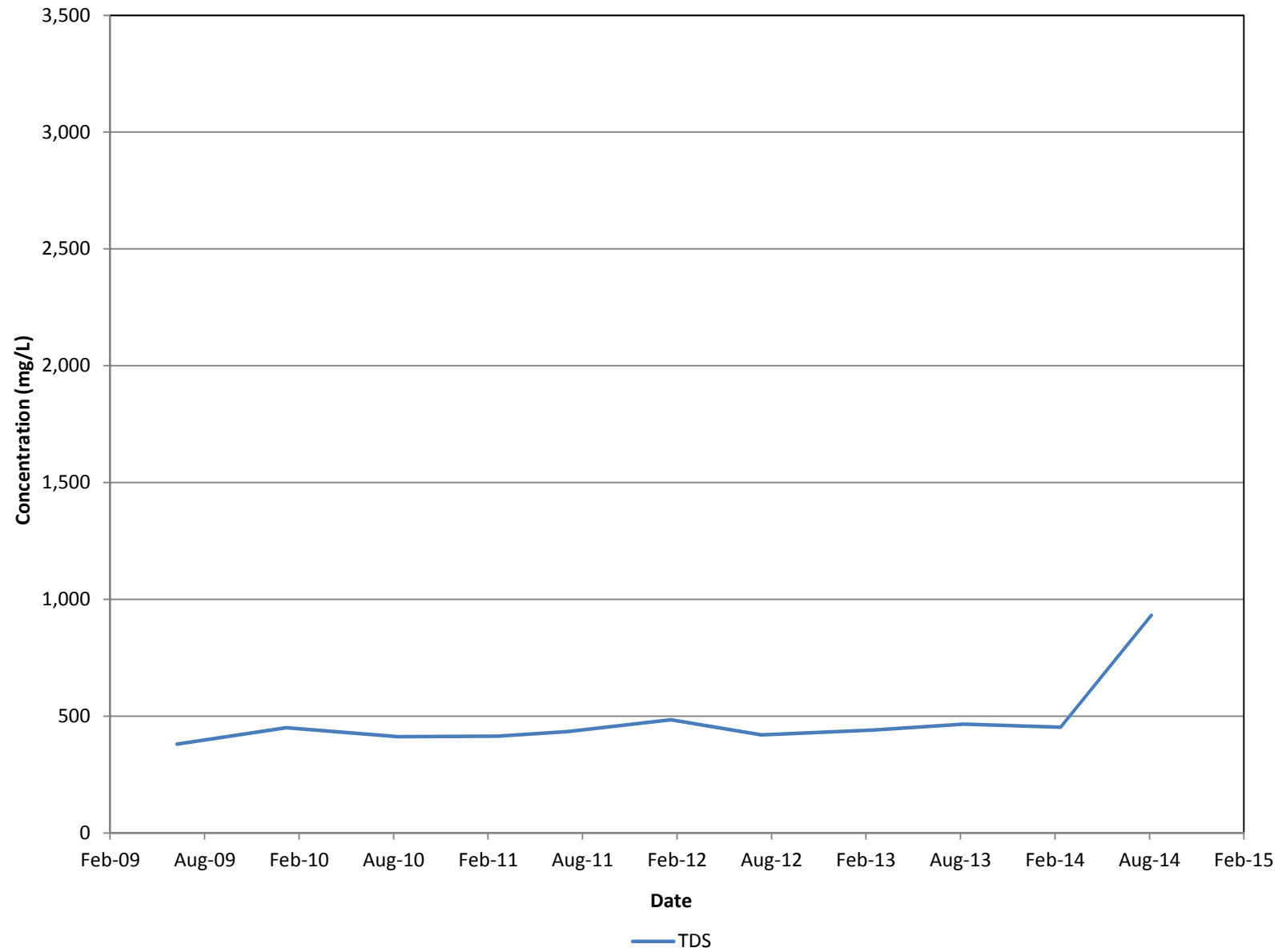
## MW-8: METAL CONCENTRATIONS OVER TIME



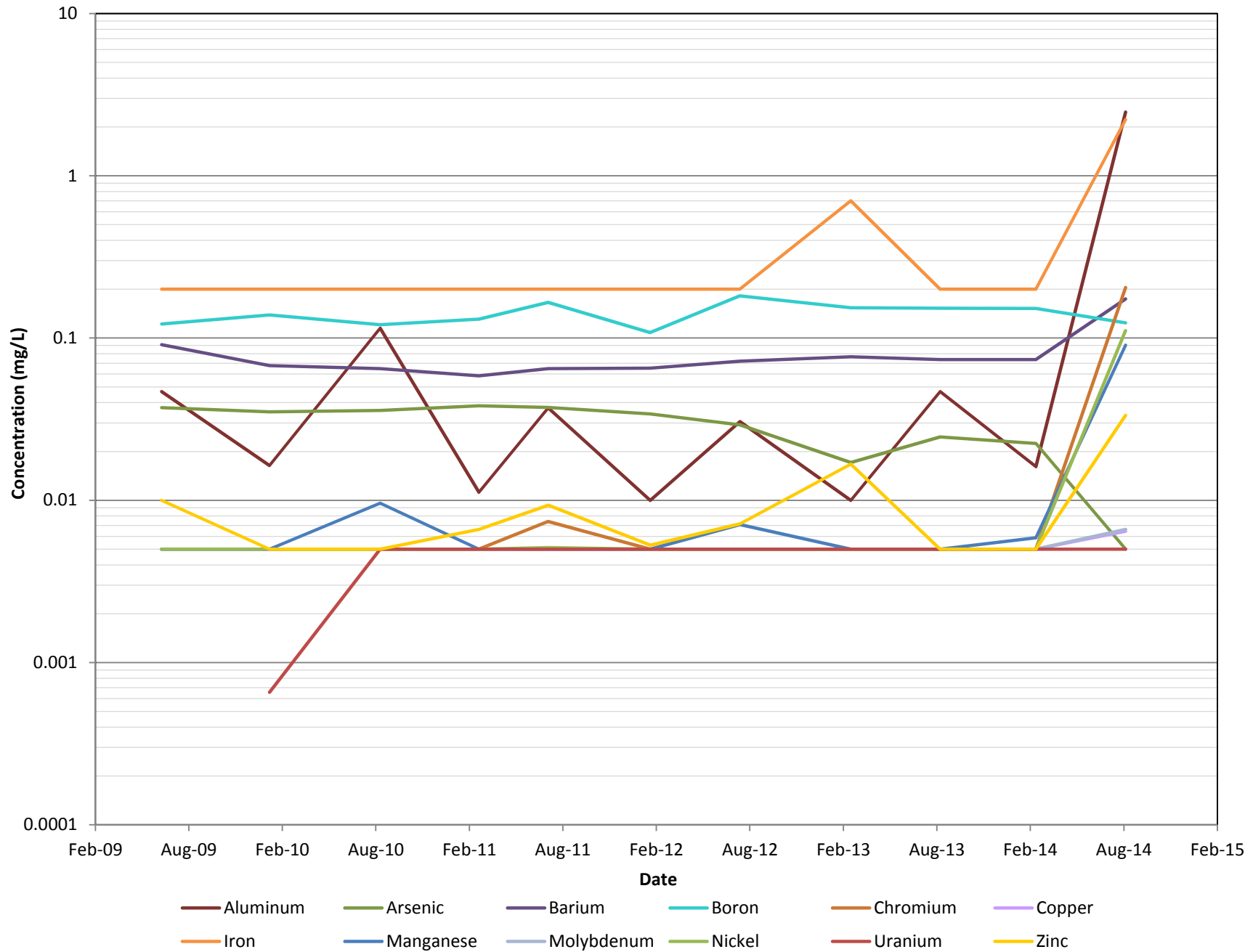
## MW-9: ANION CONCENTRATIONS OVER TIME



## MW-9: TDS CONCENTRATIONS OVER TIME

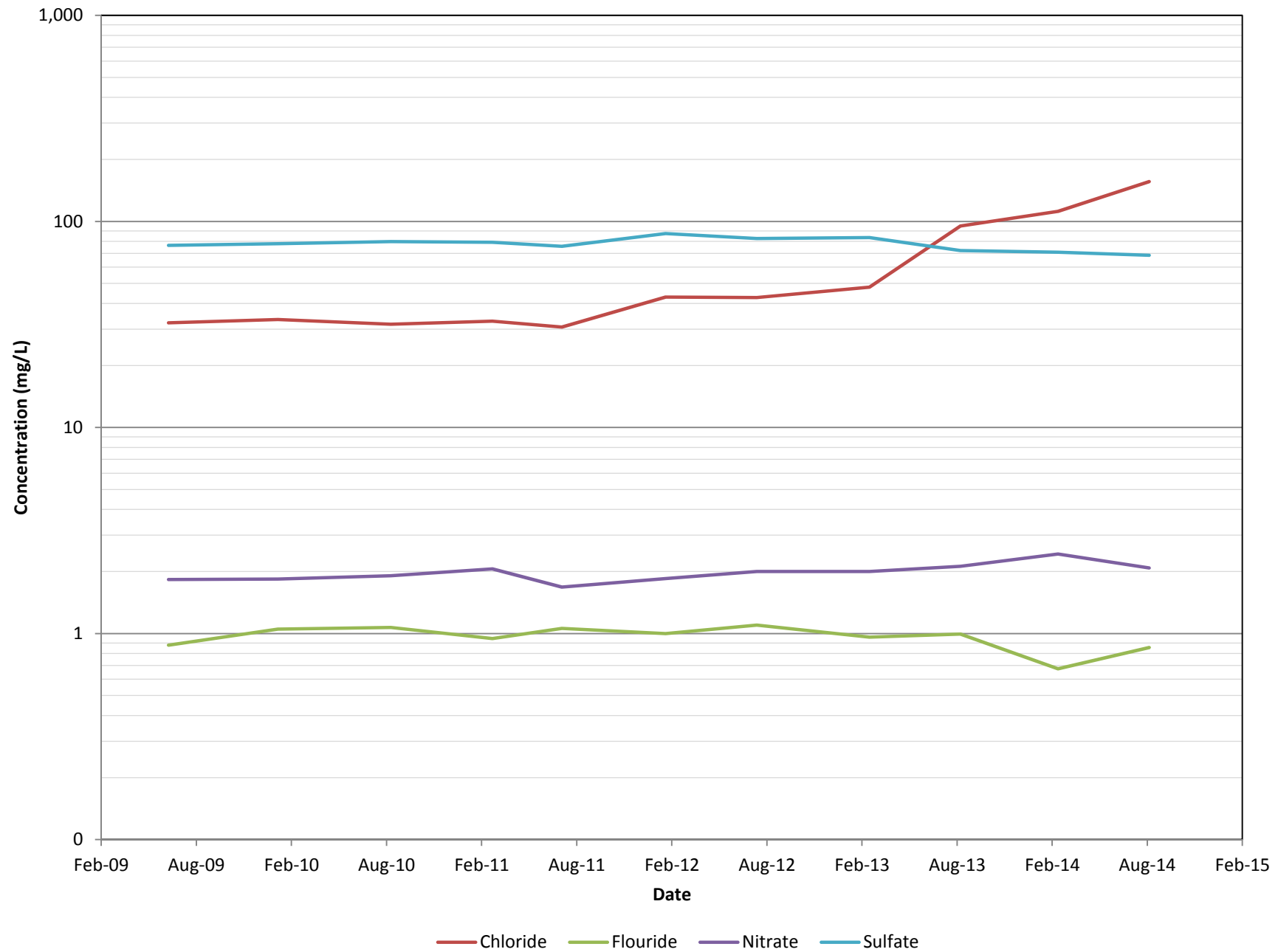


## MW-9: METAL CONCENTRATIONS OVER TIME

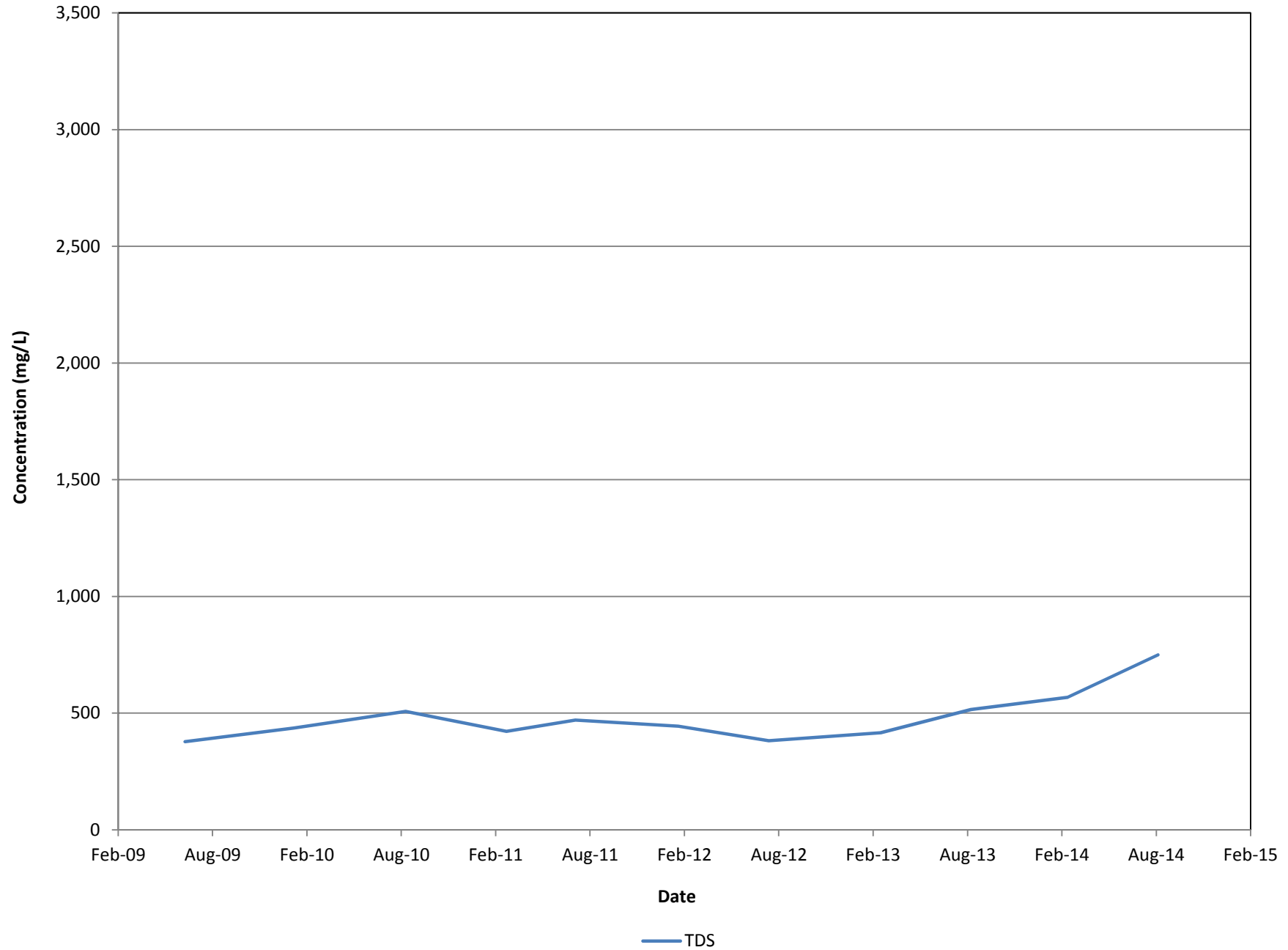




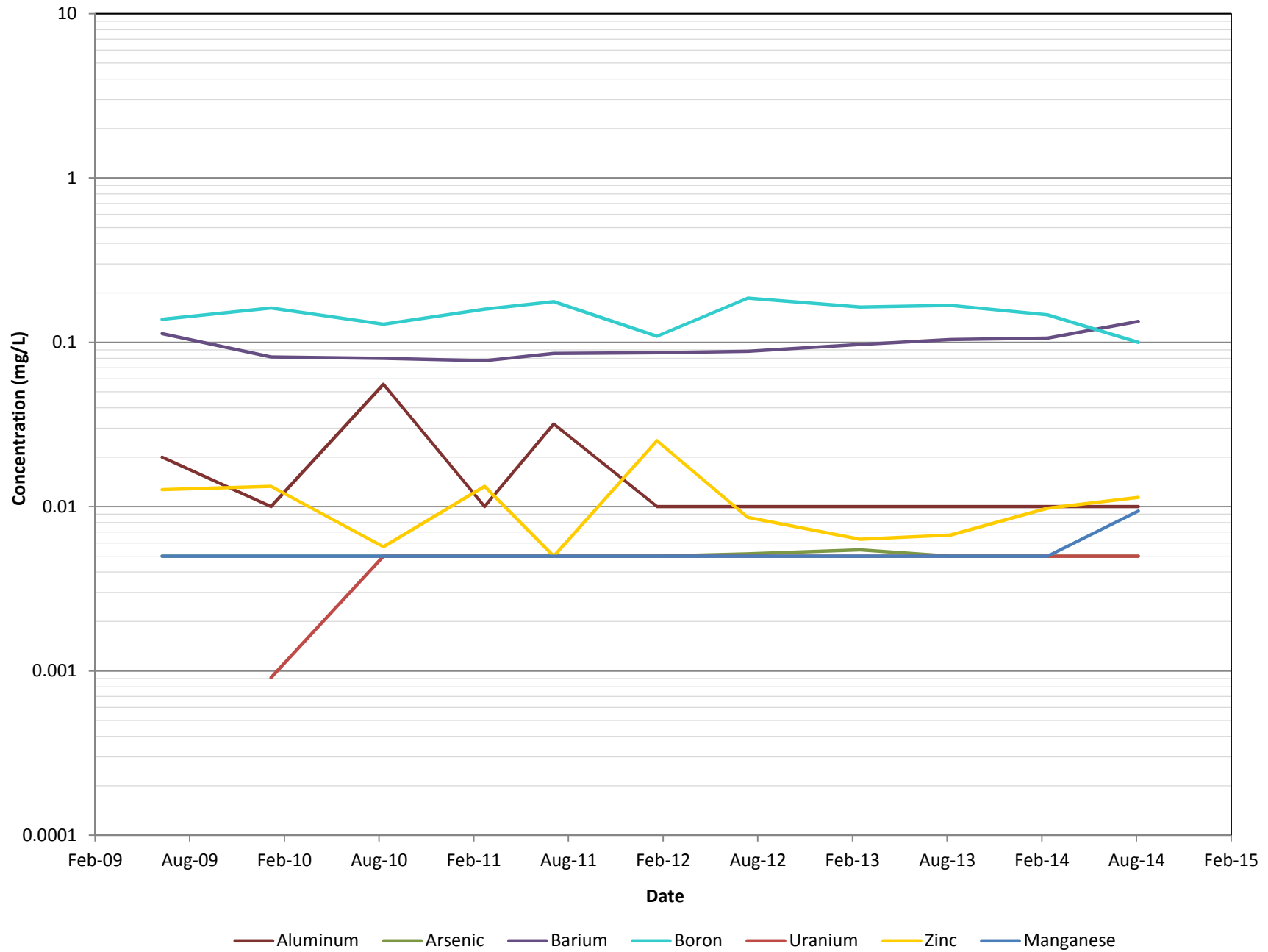
## MW-10: ANION CONCENTRATIONS OVER TIME



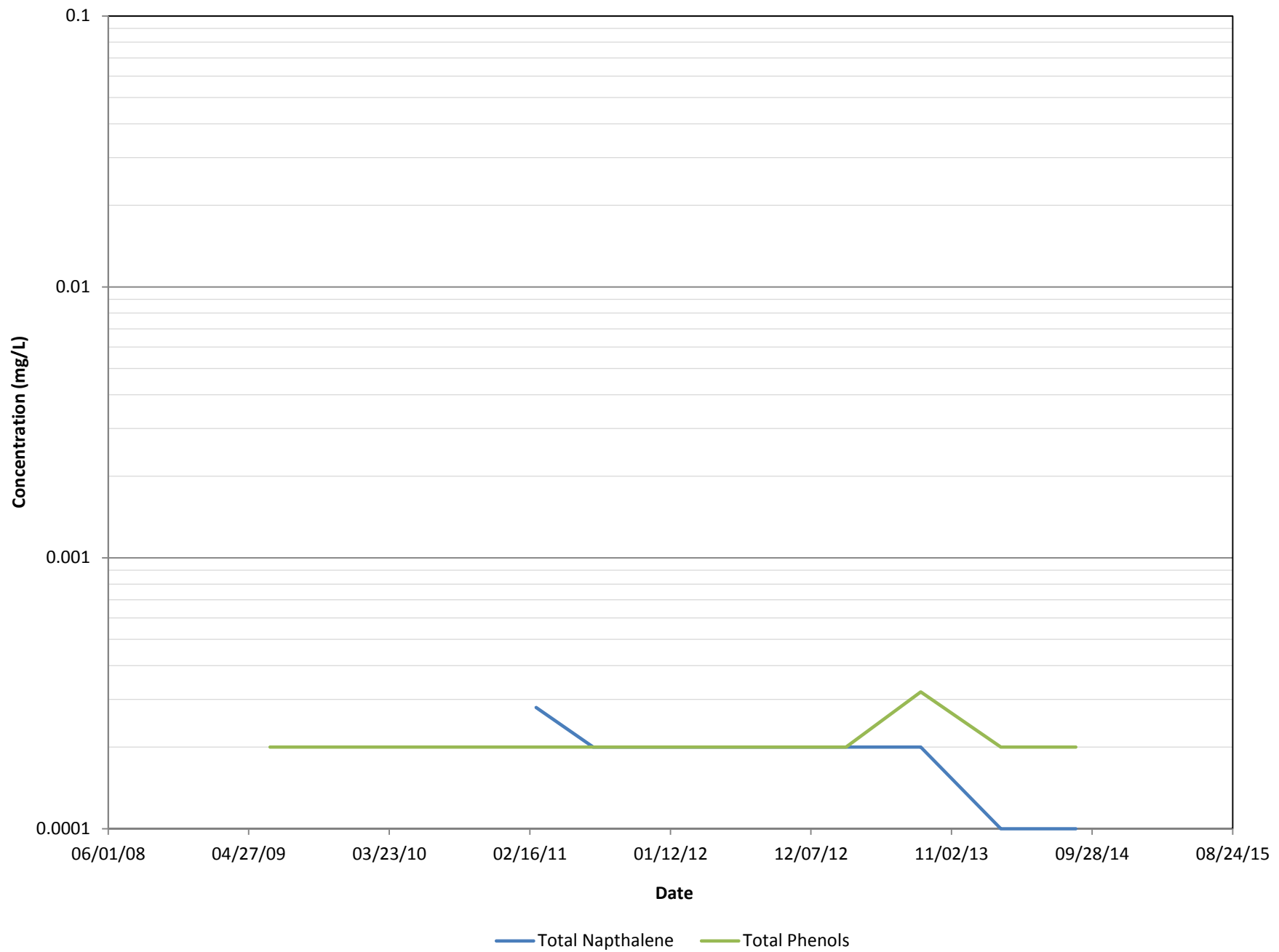
## MW-10: TDS CONCENTRATIONS OVER TIME



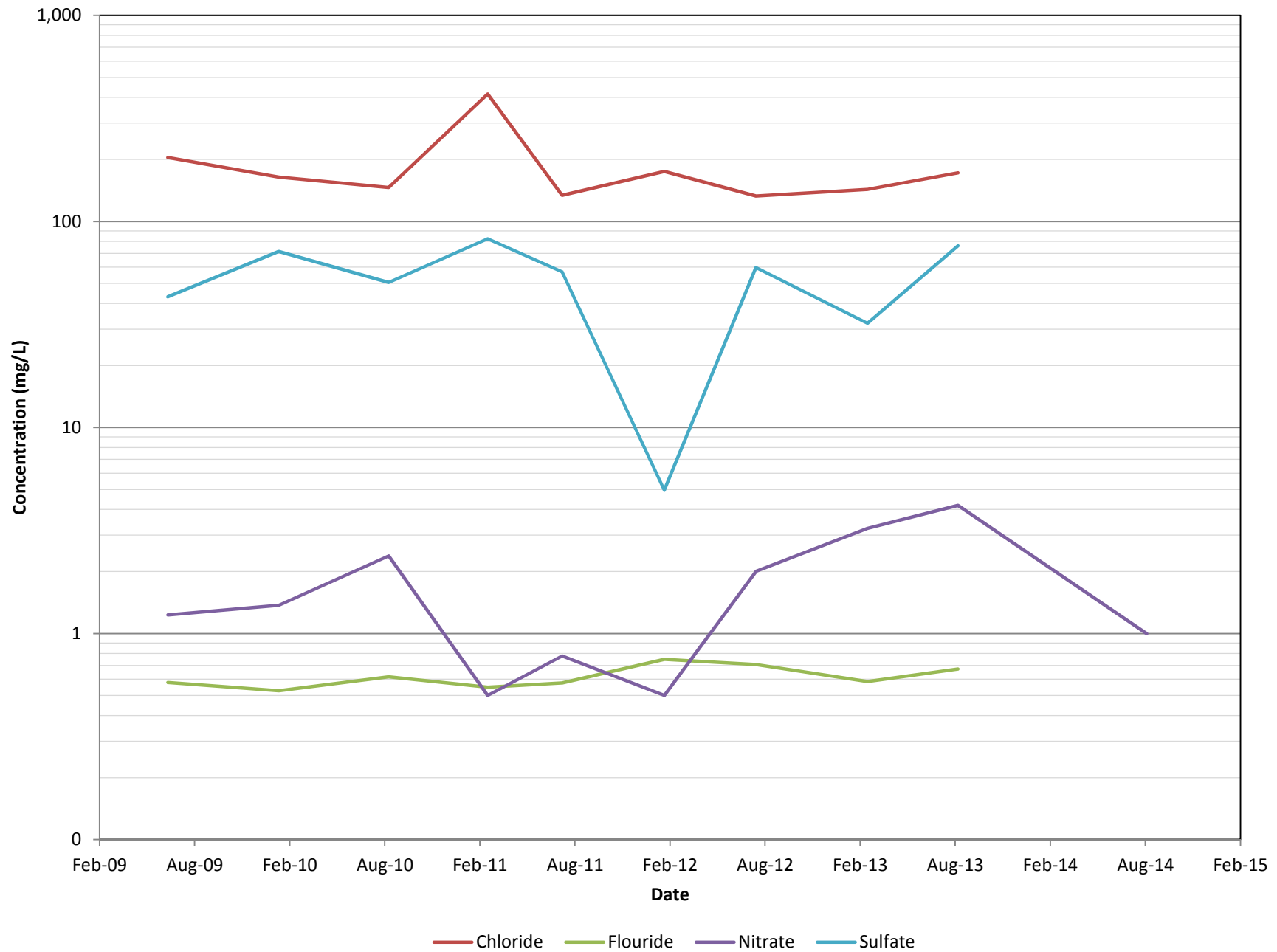
## MW-10: METAL CONCENTRATIONS OVER TIME



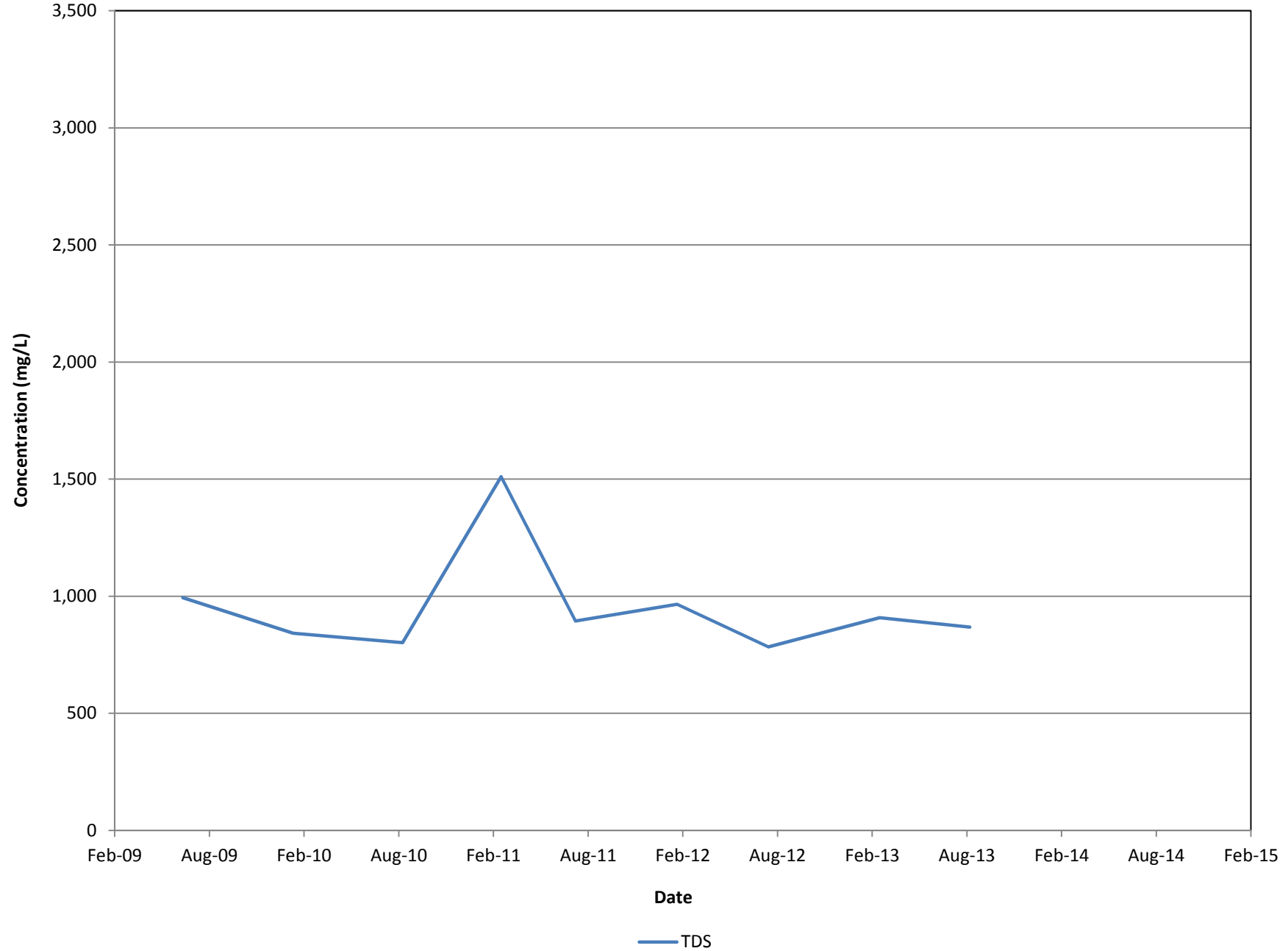
## MW-10: SVOC CONCENTRATIONS OVER TIME



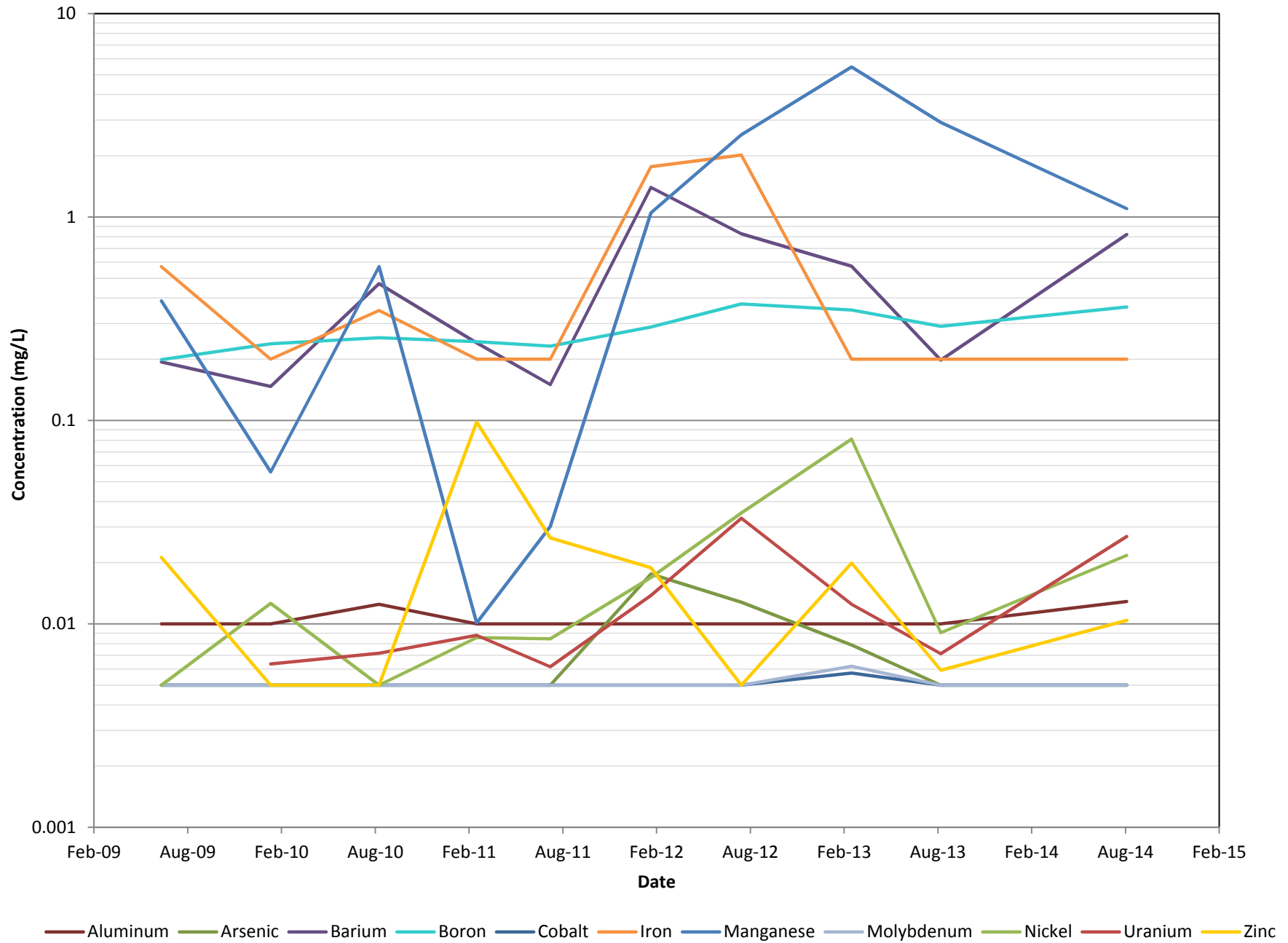
## MW-11: ANION CONCENTRATIONS OVER TIME



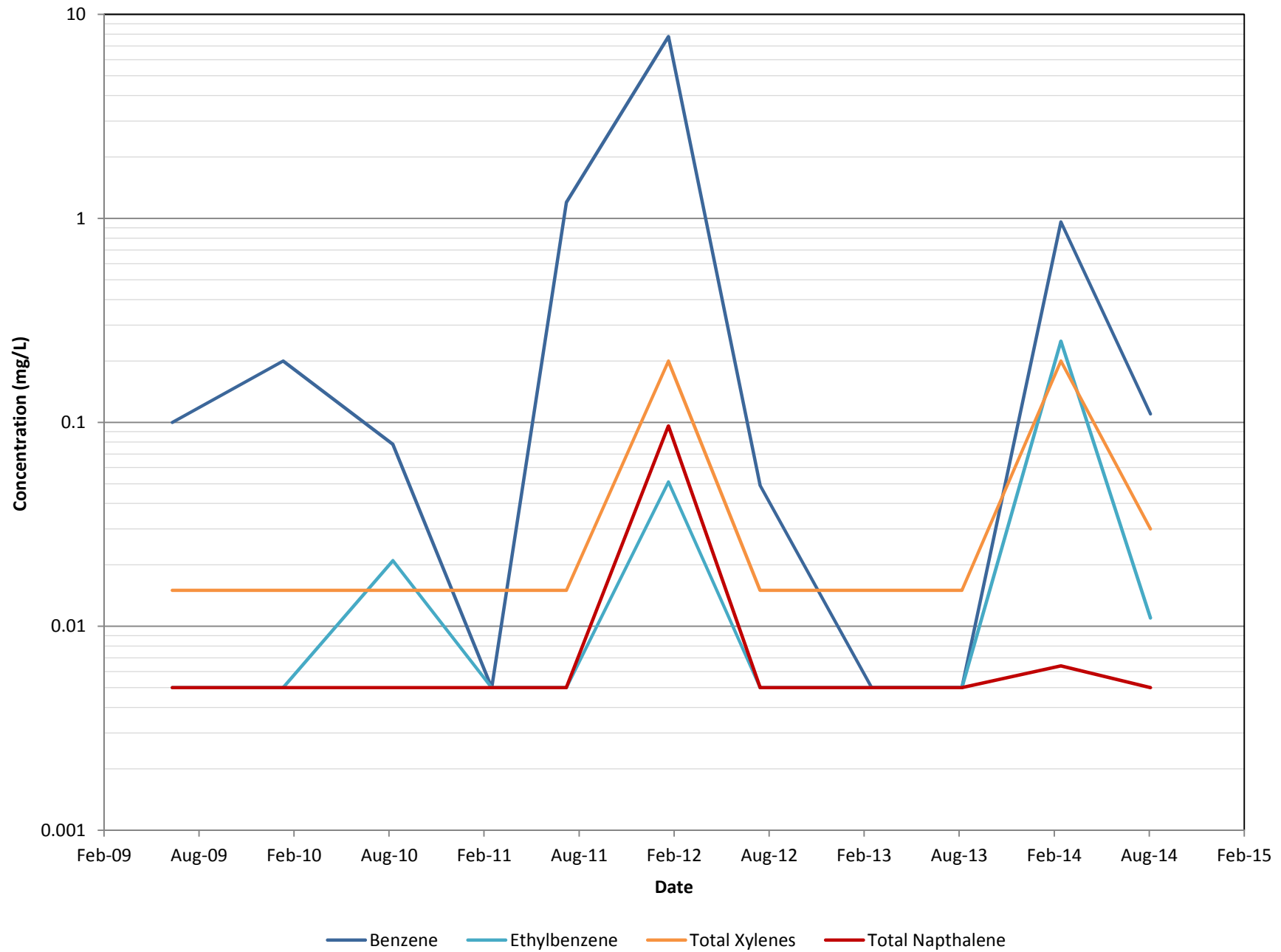
## MW-11: TDS CONCENTRATIONS OVER TIME



## MW-11: METAL CONCENTRATIONS OVER TIME

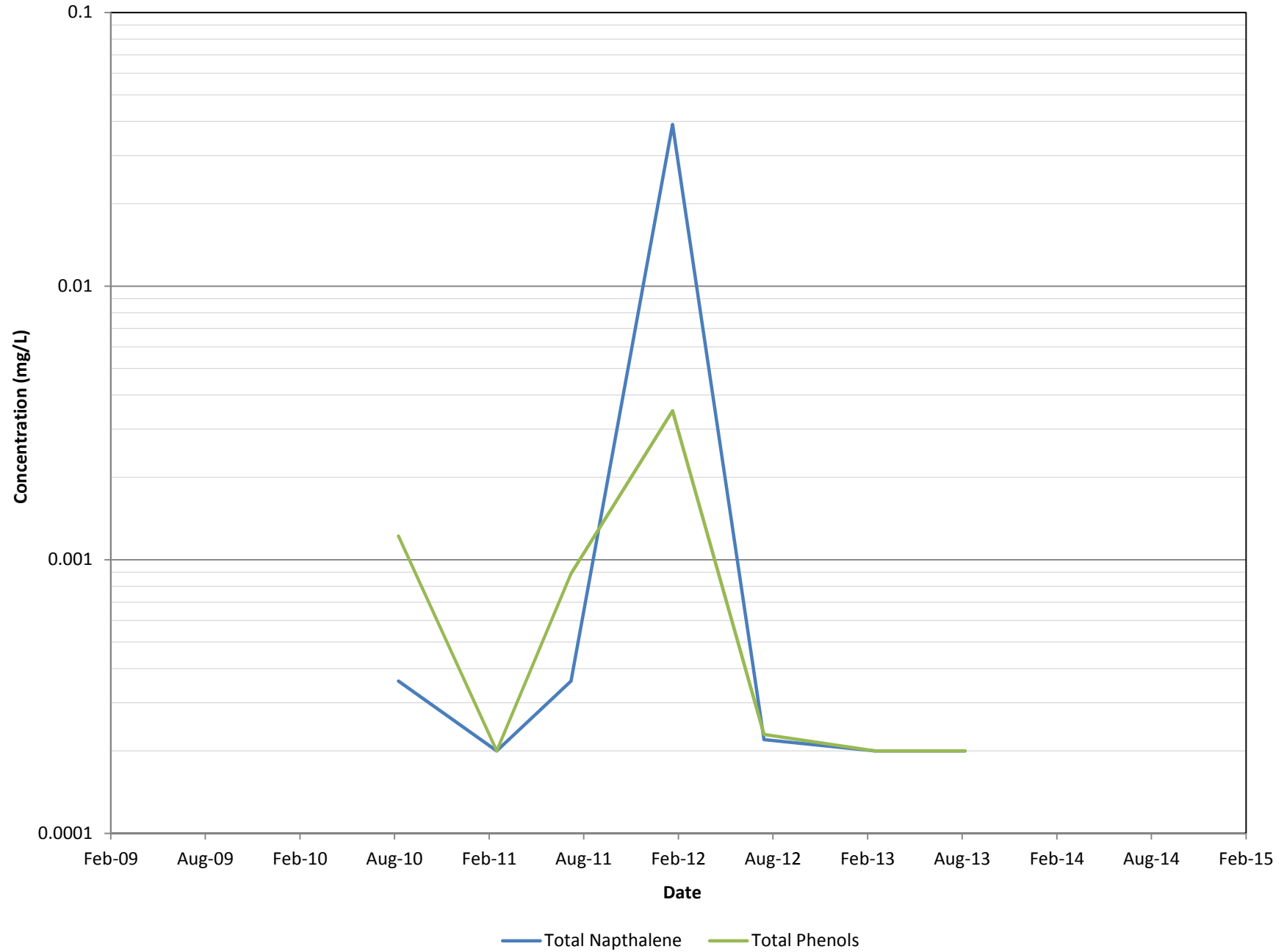


## MW-11: VOC CONCENTRATIONS OVER TIME

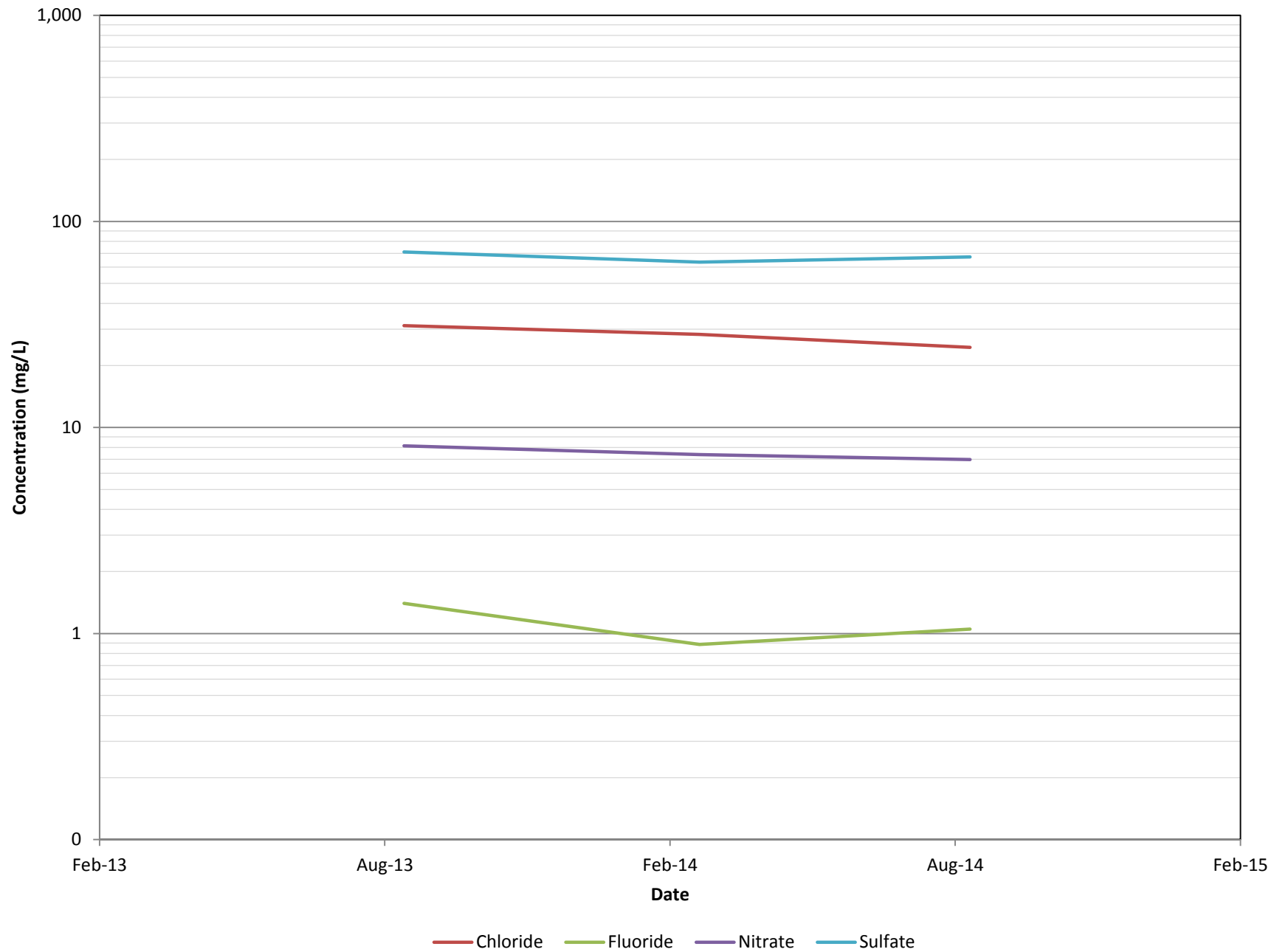




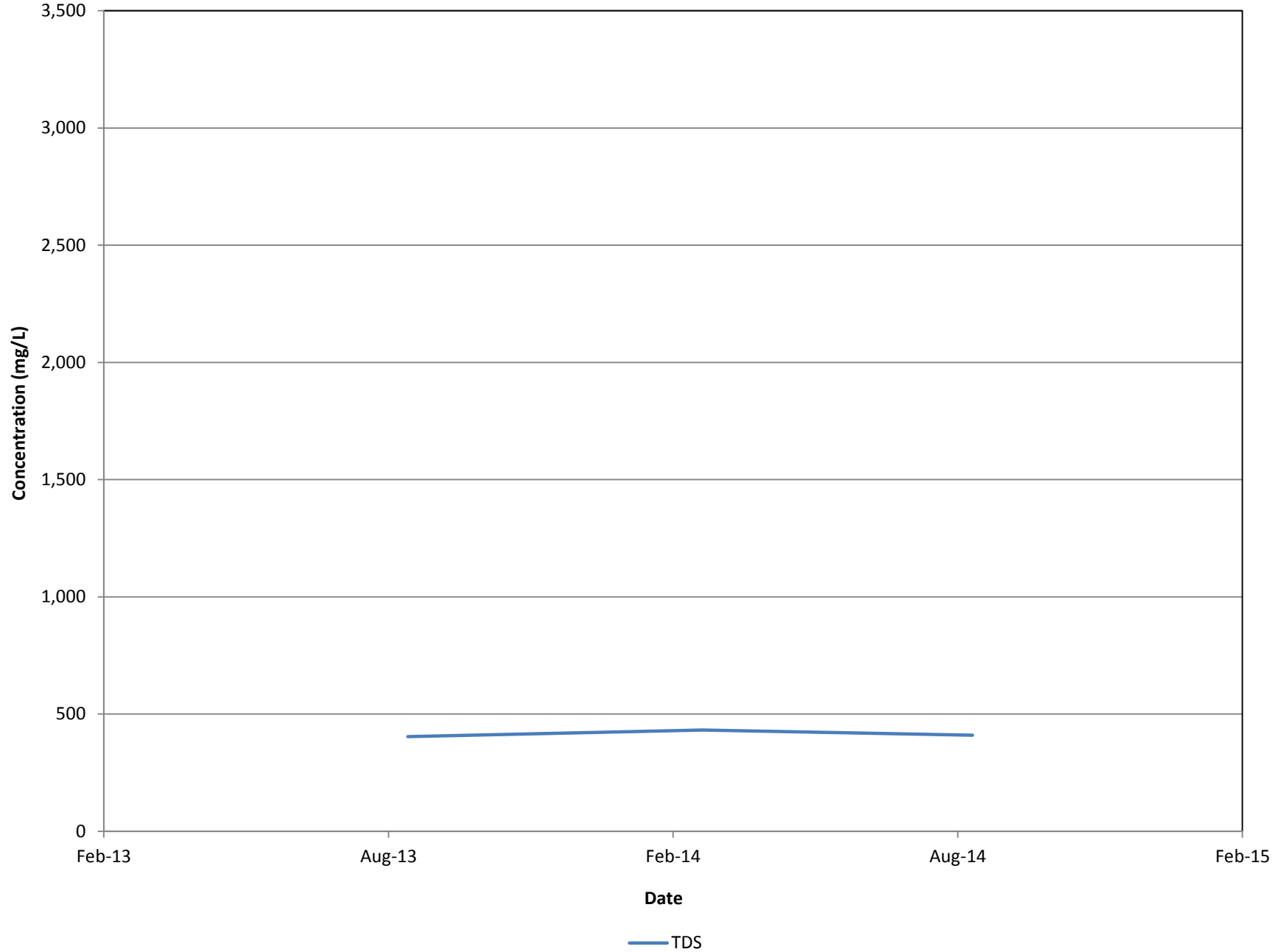
## MW-11: SVOC CONCENTRATIONS OVER TIME



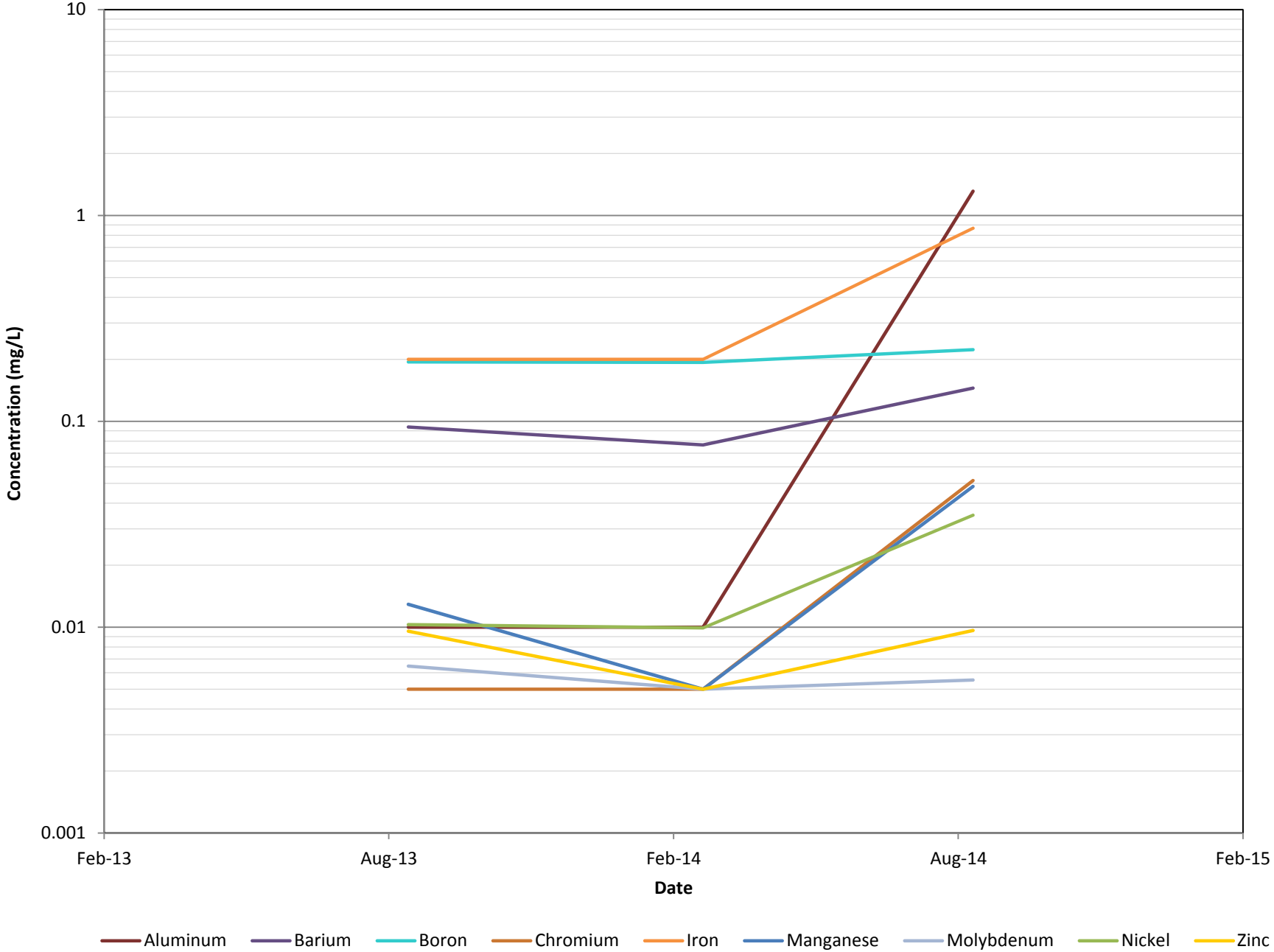
## MW-12R: ANION CONCENTRATIONS OVER TIME



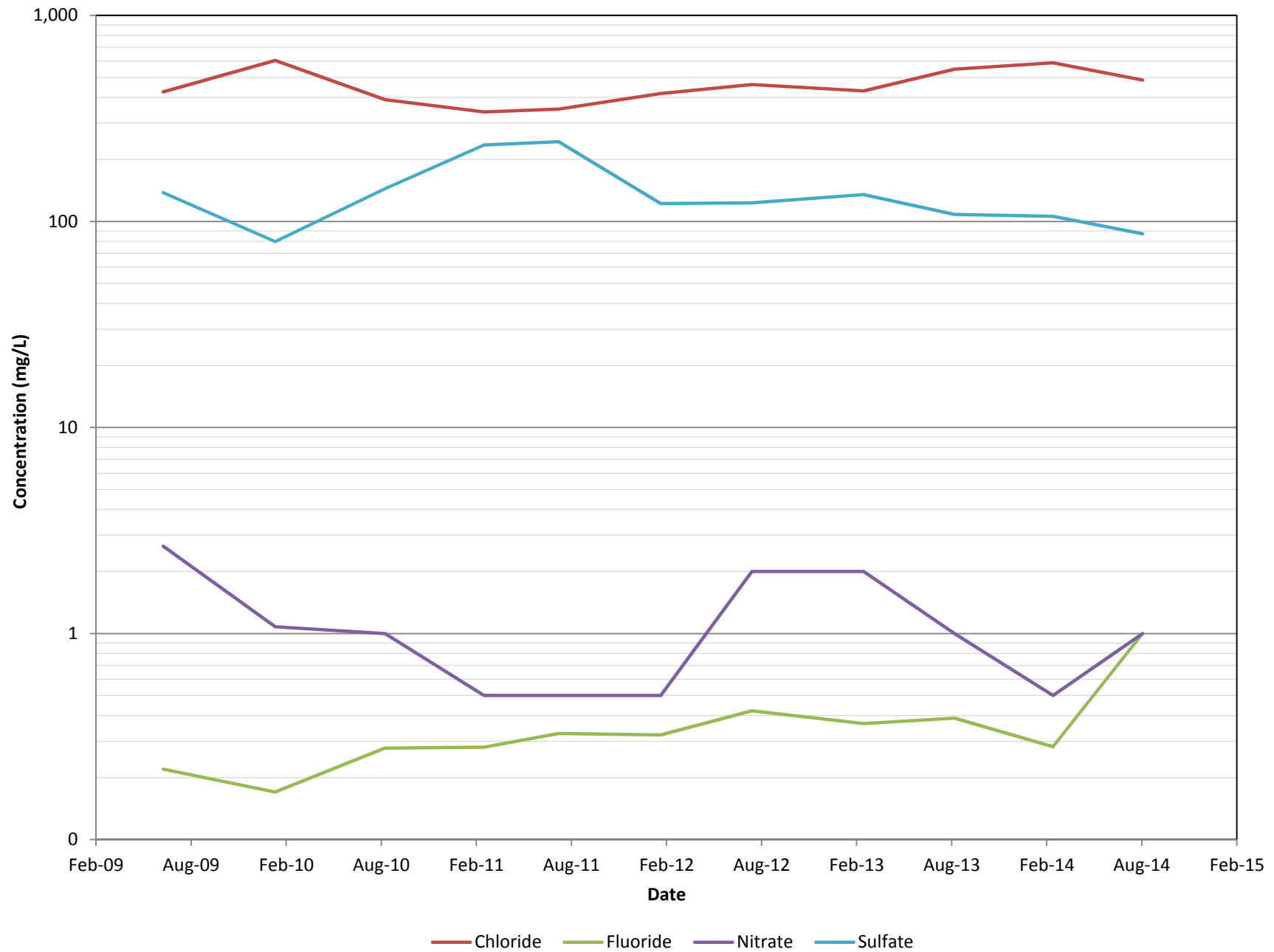
## MW-12R: TDS CONCENTRATIONS OVER TIME



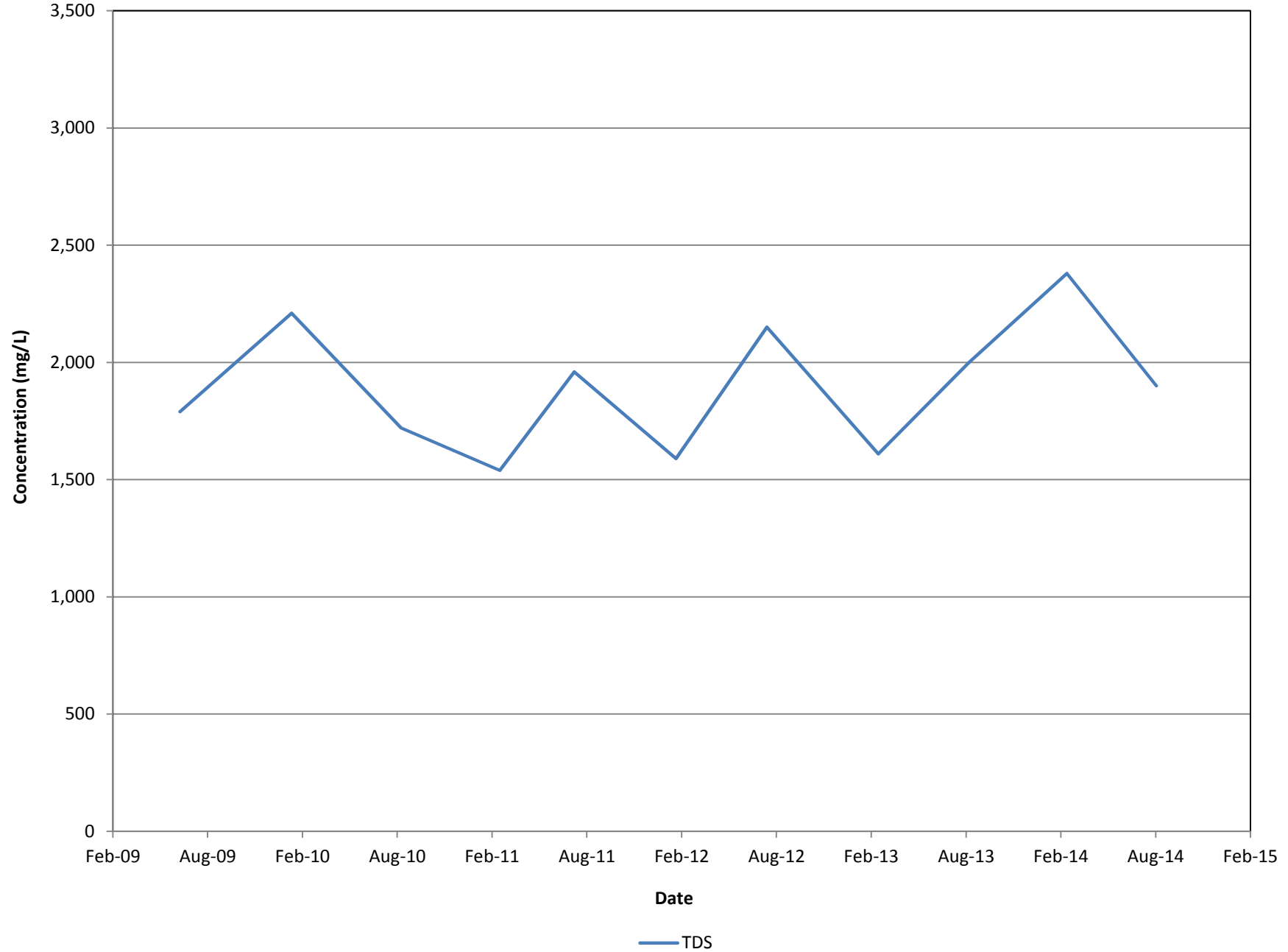
## MW-12R: METAL CONCENTRATIONS OVER TIME



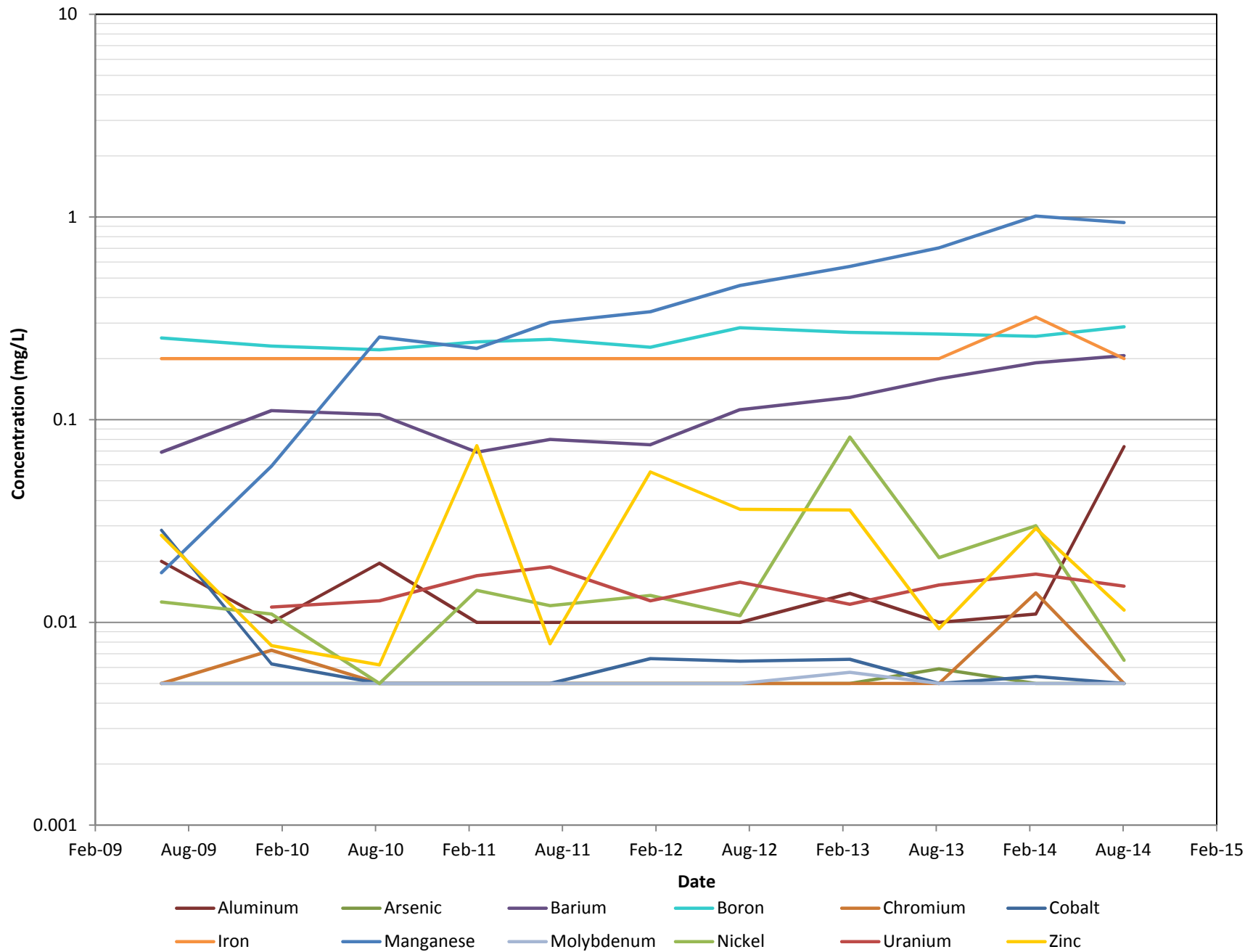
## MW-13: ANION CONCENTRATIONS OVER TIME



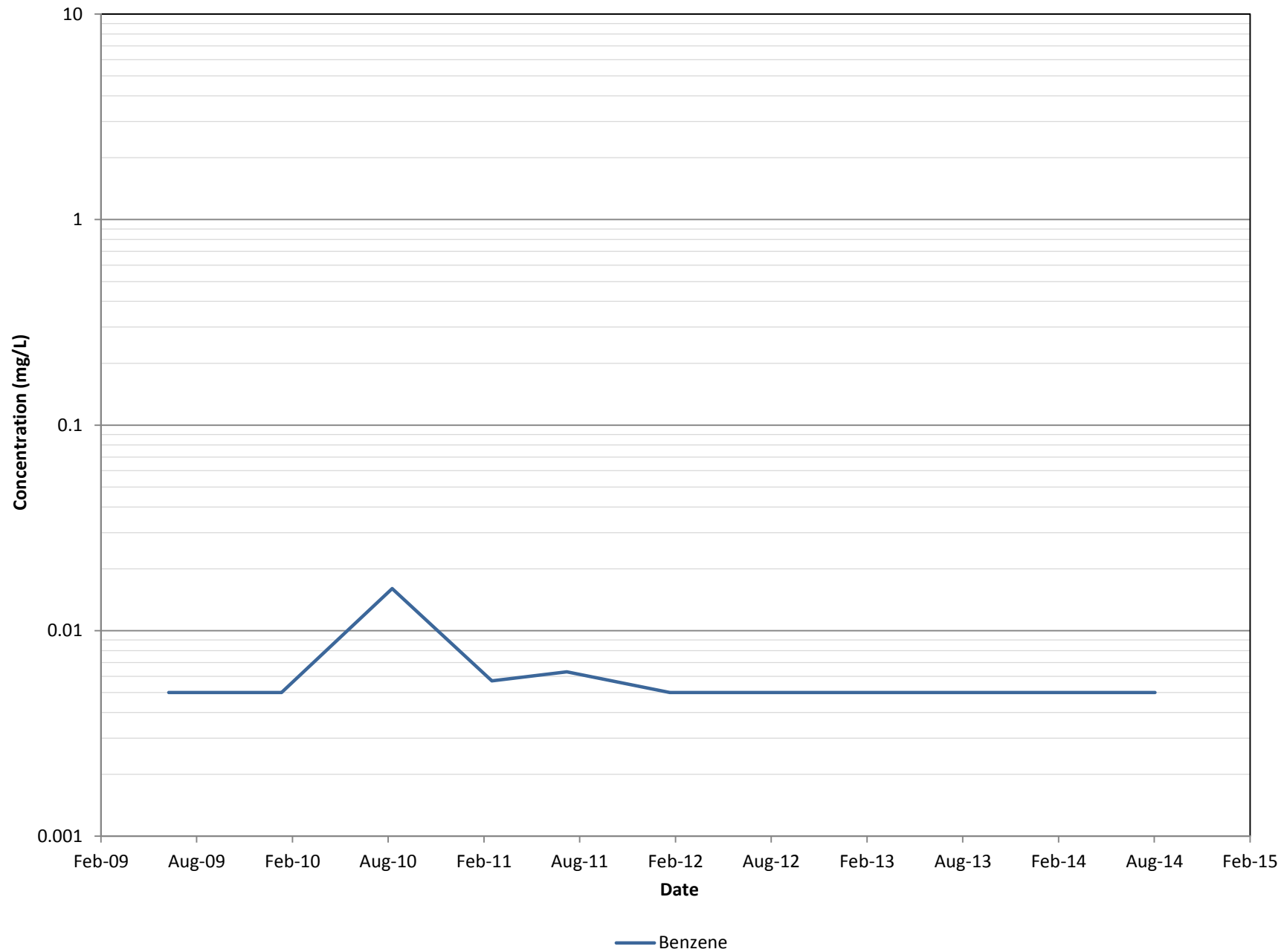
## MW-13: TDS CONCENTRATIONS OVER TIME



# MW-13: METAL CONCENTRATIONS OVER TIME

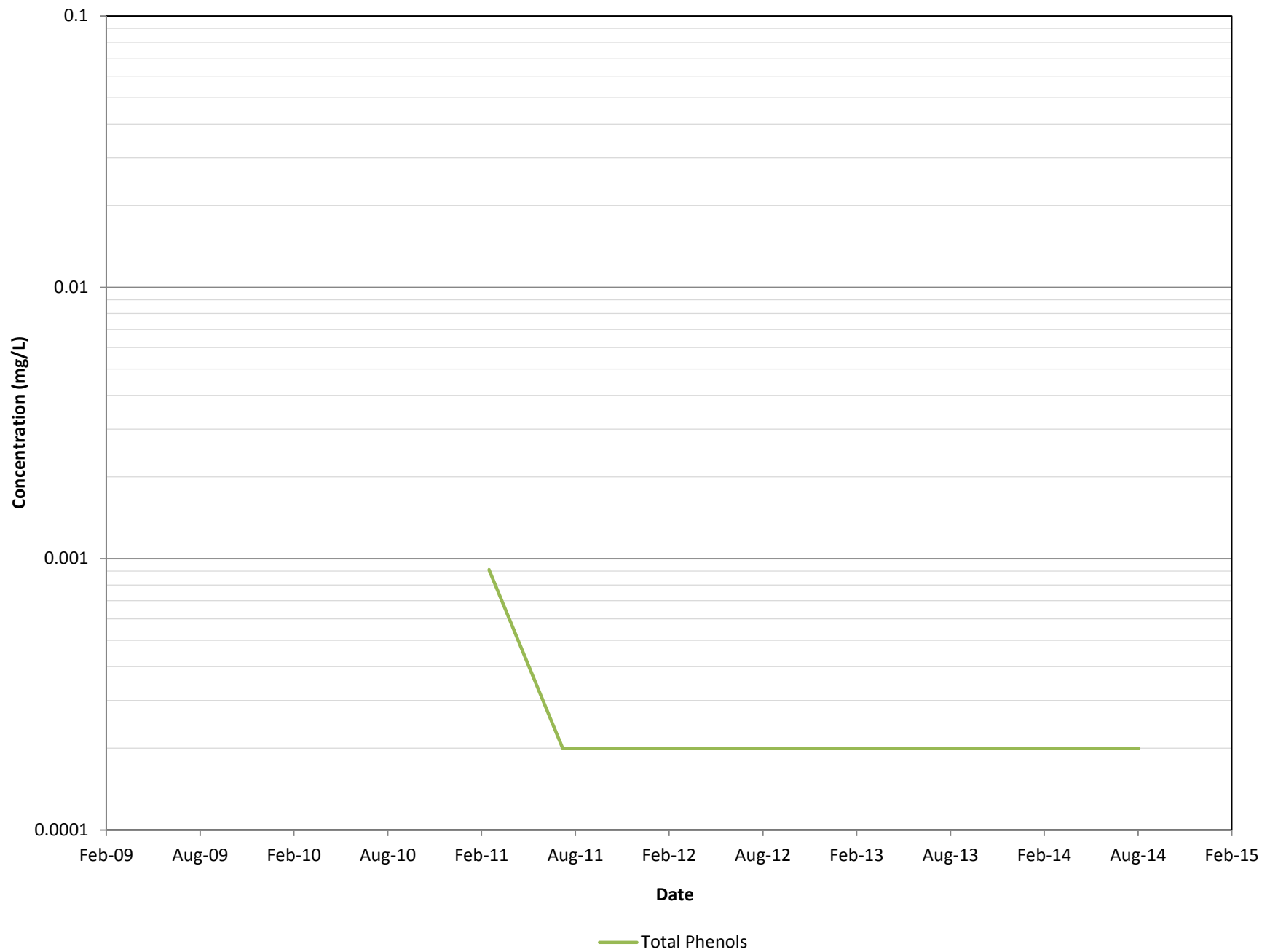


## MW-13: VOC CONCENTRATIONS OVER TIME

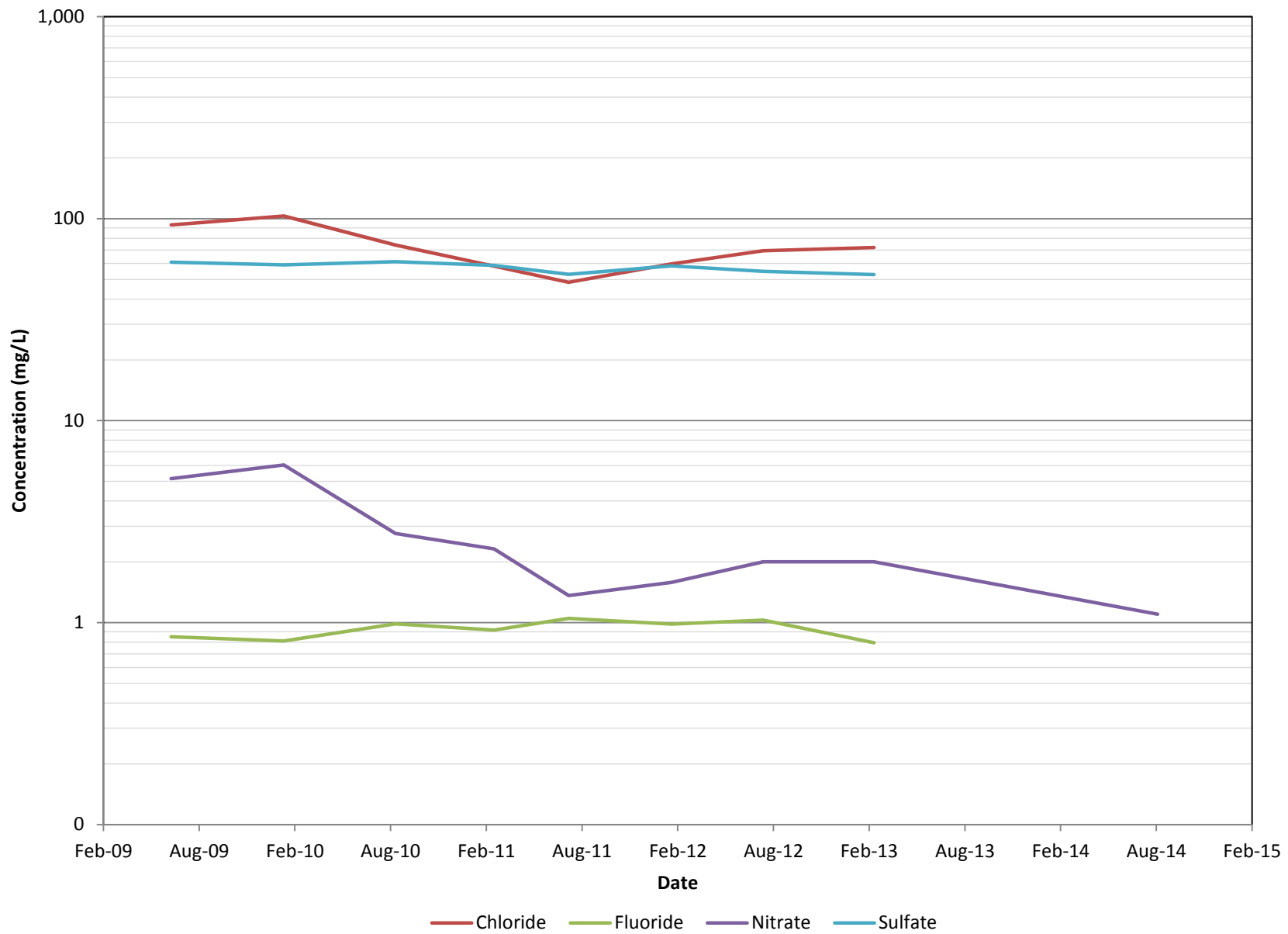




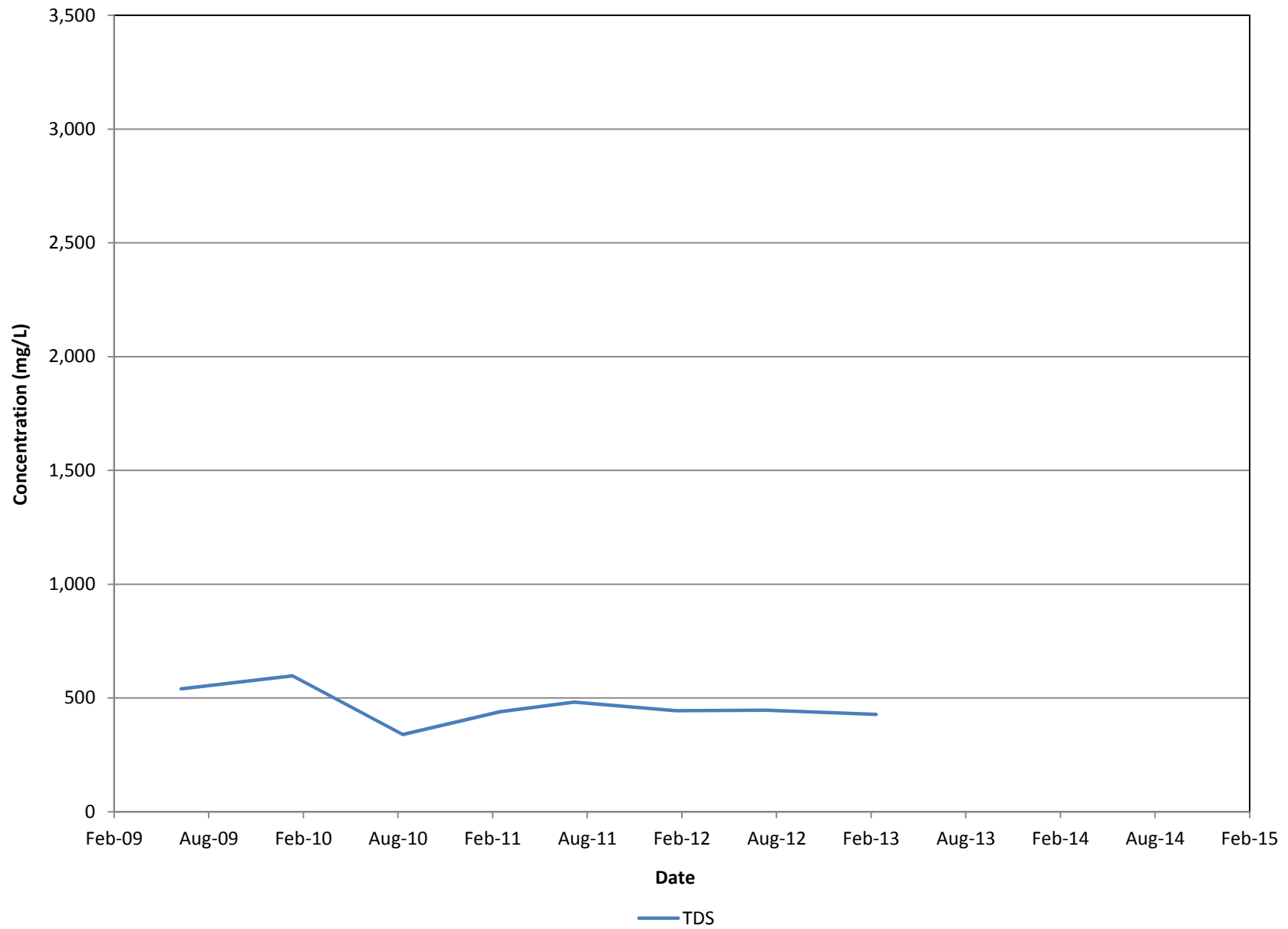
## MW-13: SVOC CONCENTRATIONS OVER TIME



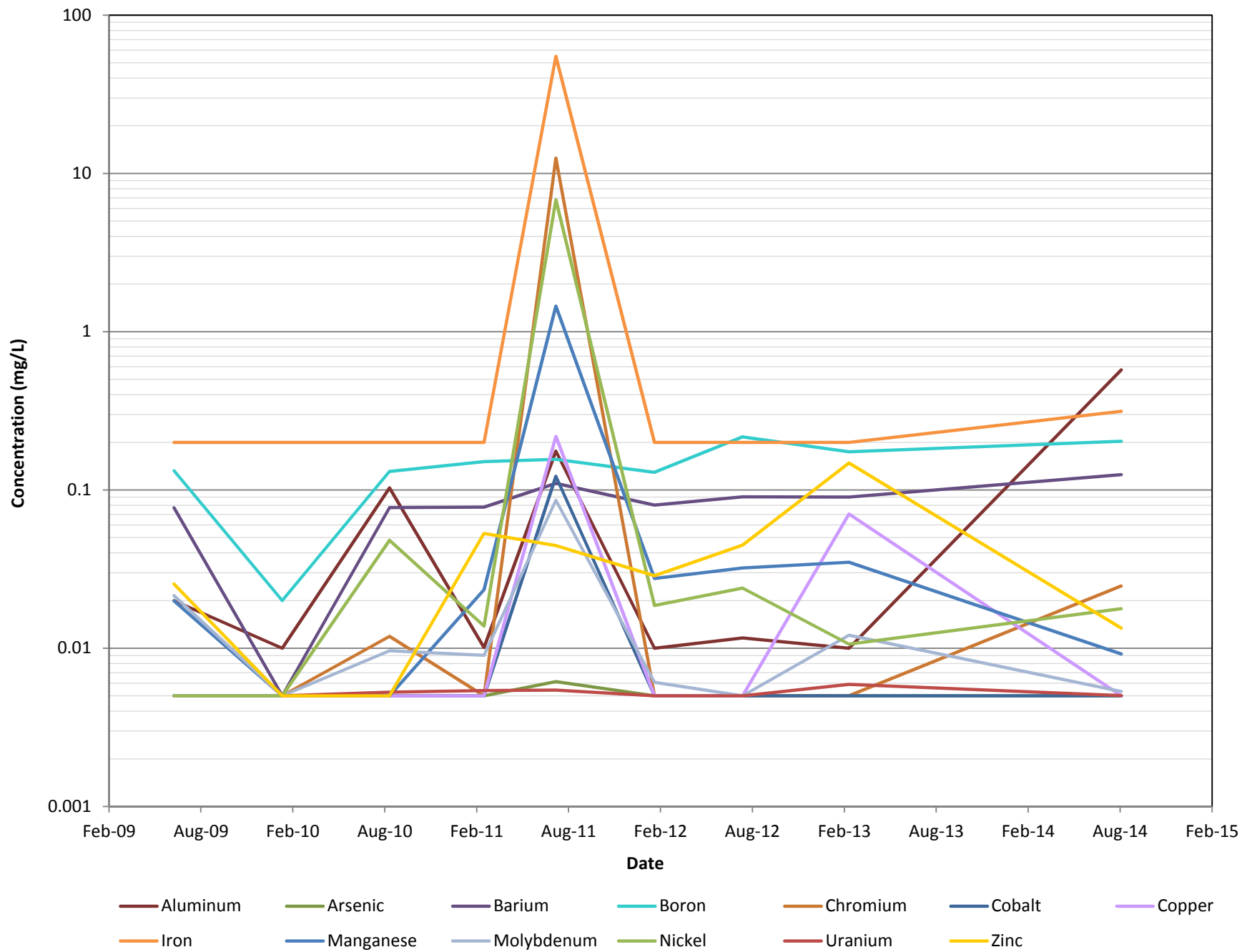
## MW-14: ANION CONCENTRATIONS OVER TIME



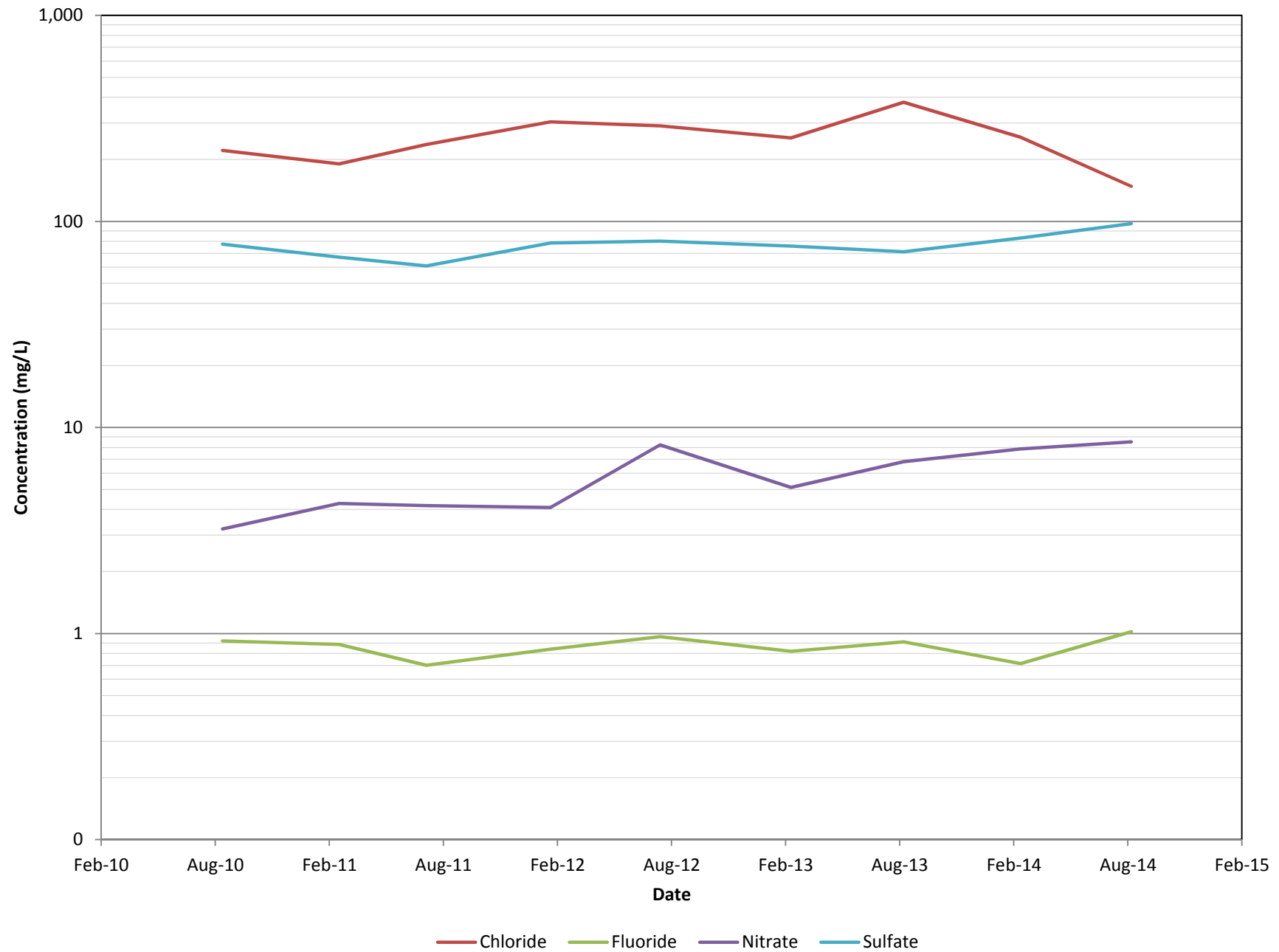
## MW-14: TDS CONCENTRATIONS OVER TIME



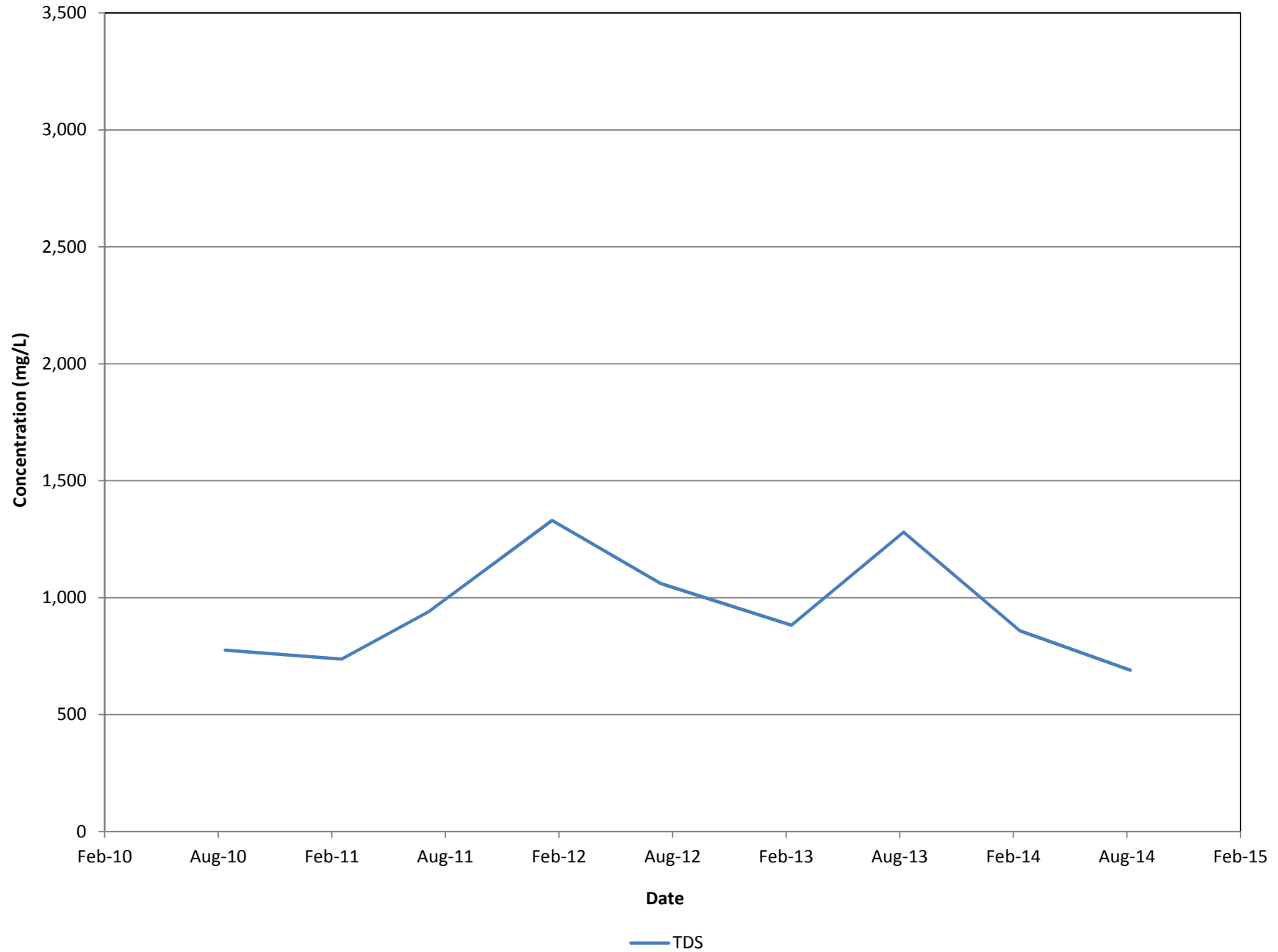
## MW-14: METAL CONCENTRATIONS OVER TIME



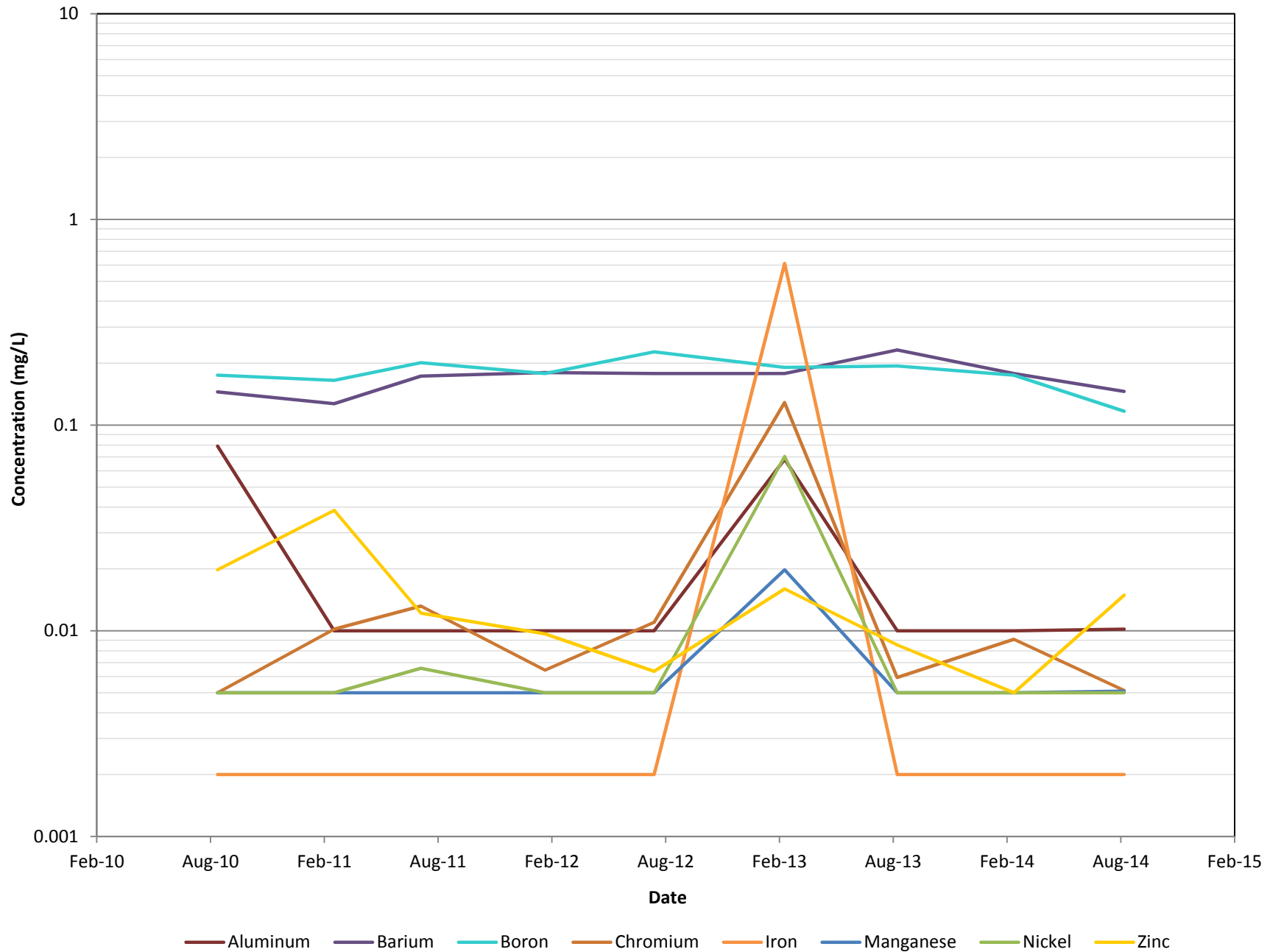
## MW-15: ANION CONCENTRATIONS OVER TIME



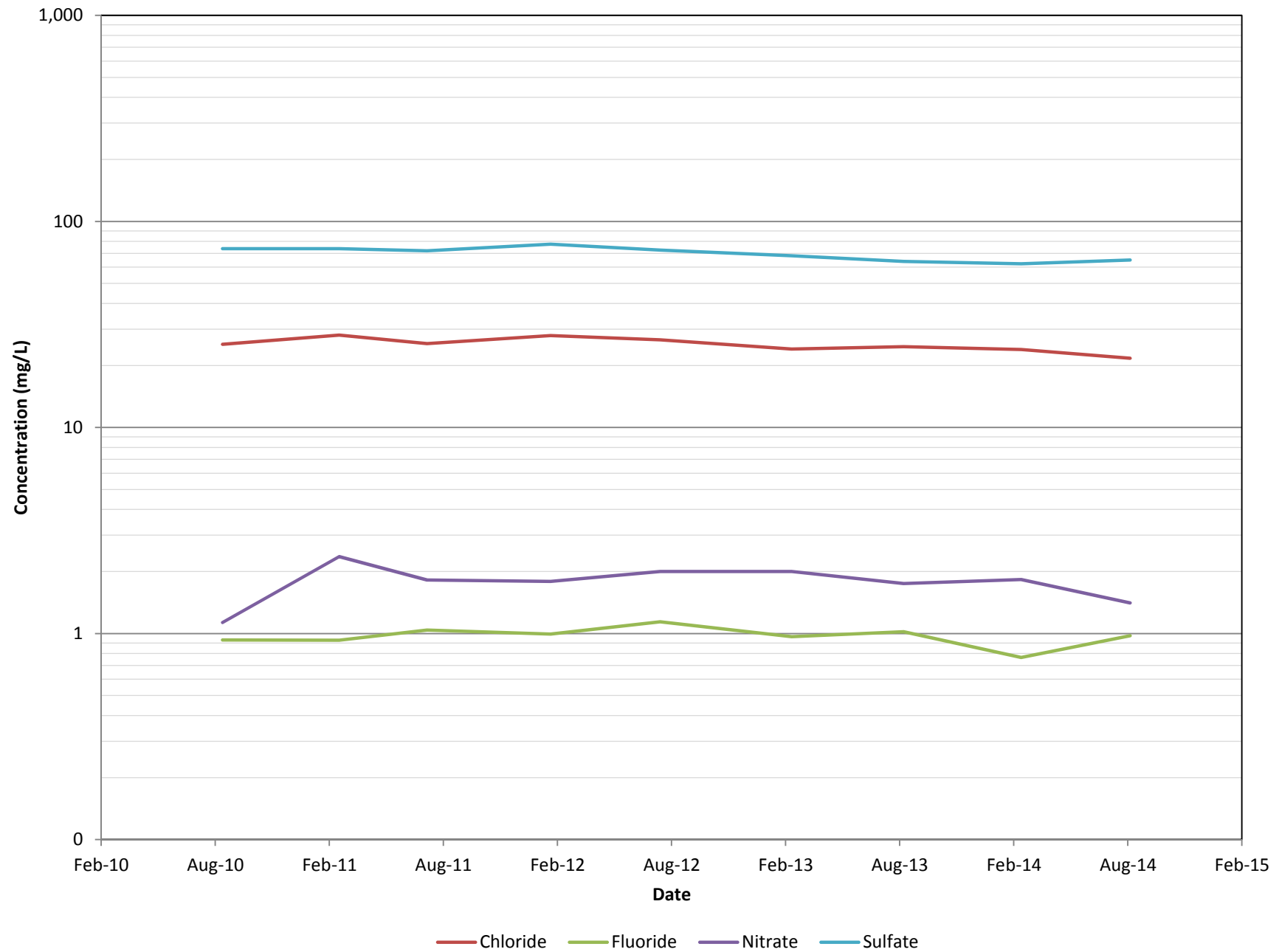
## MW-15: TDS CONCENTRATIONS OVER TIME



## MW-15: METAL CONCENTRATIONS OVER TIME

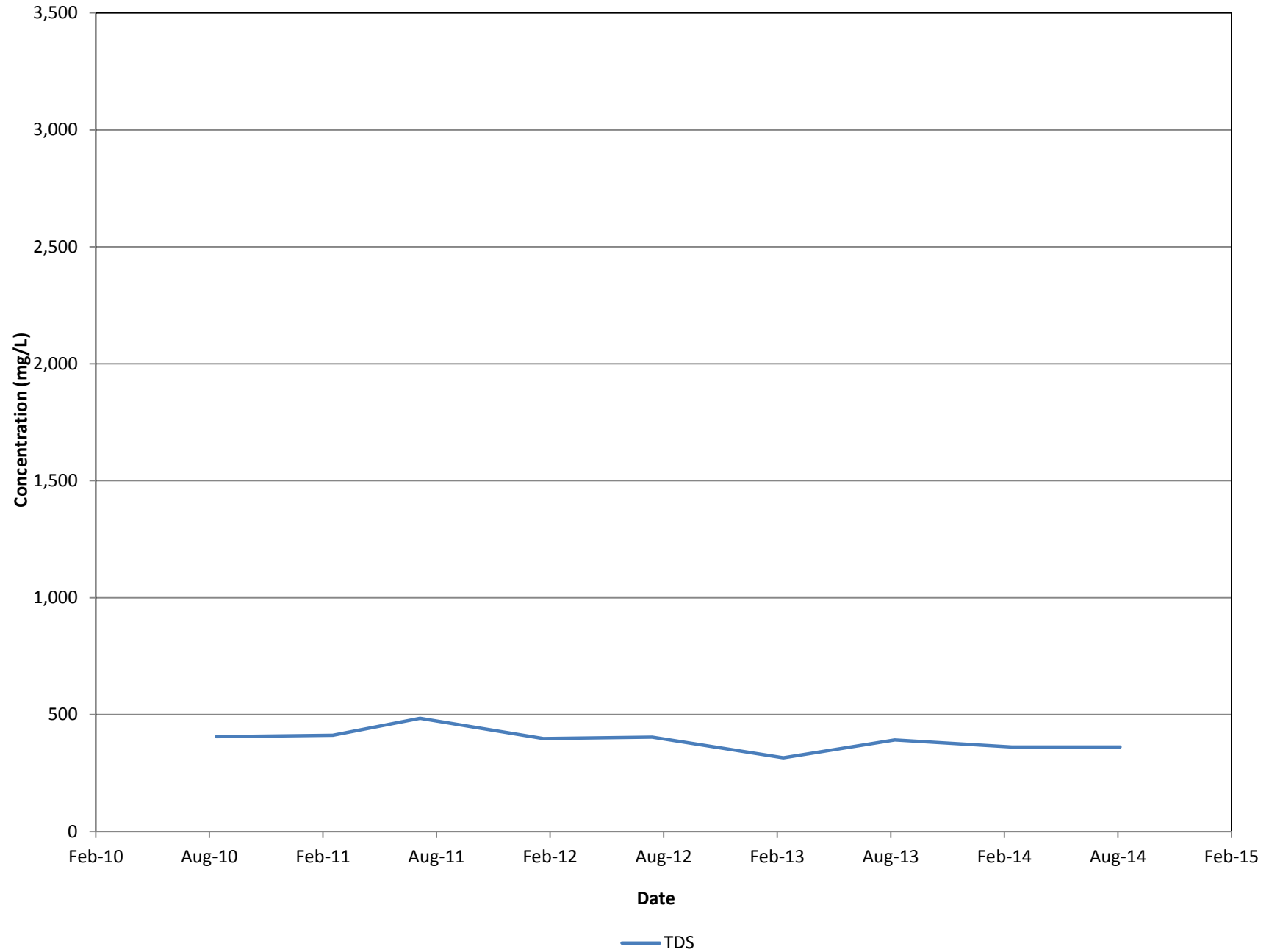


## MW-16: ANION CONCENTRATIONS OVER TIME

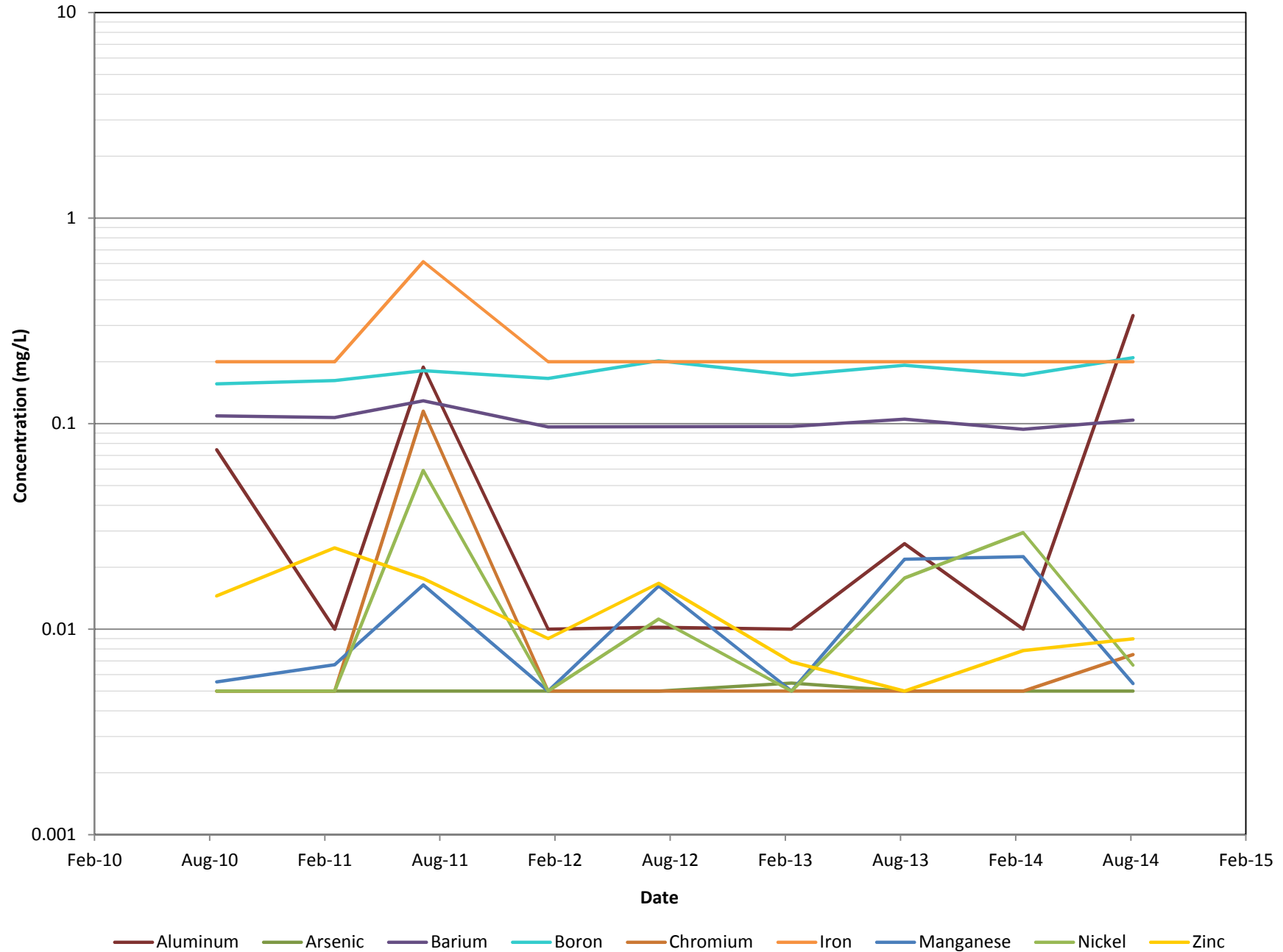




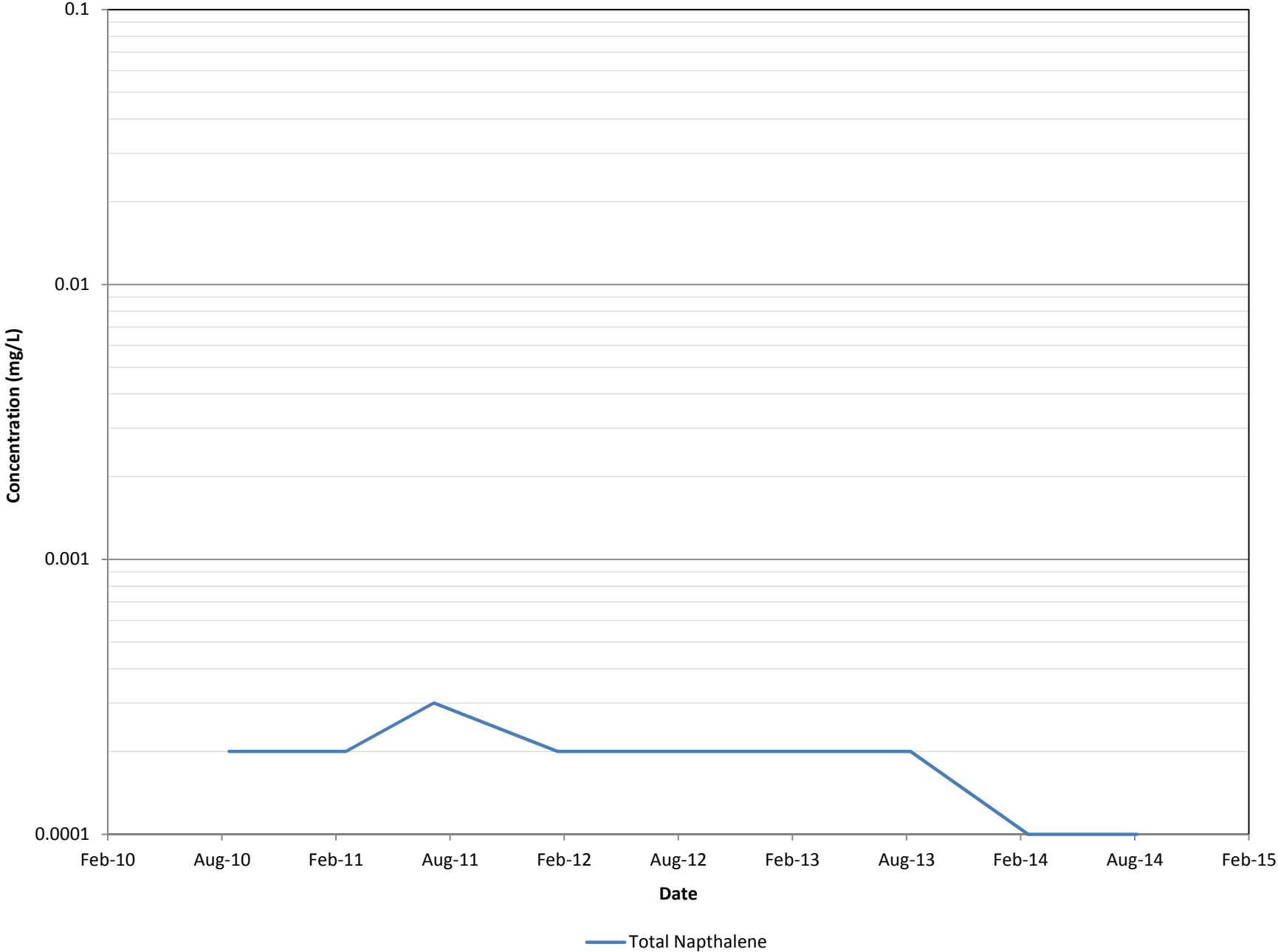
## MW-16: TDS CONCENTRATIONS OVER TIME



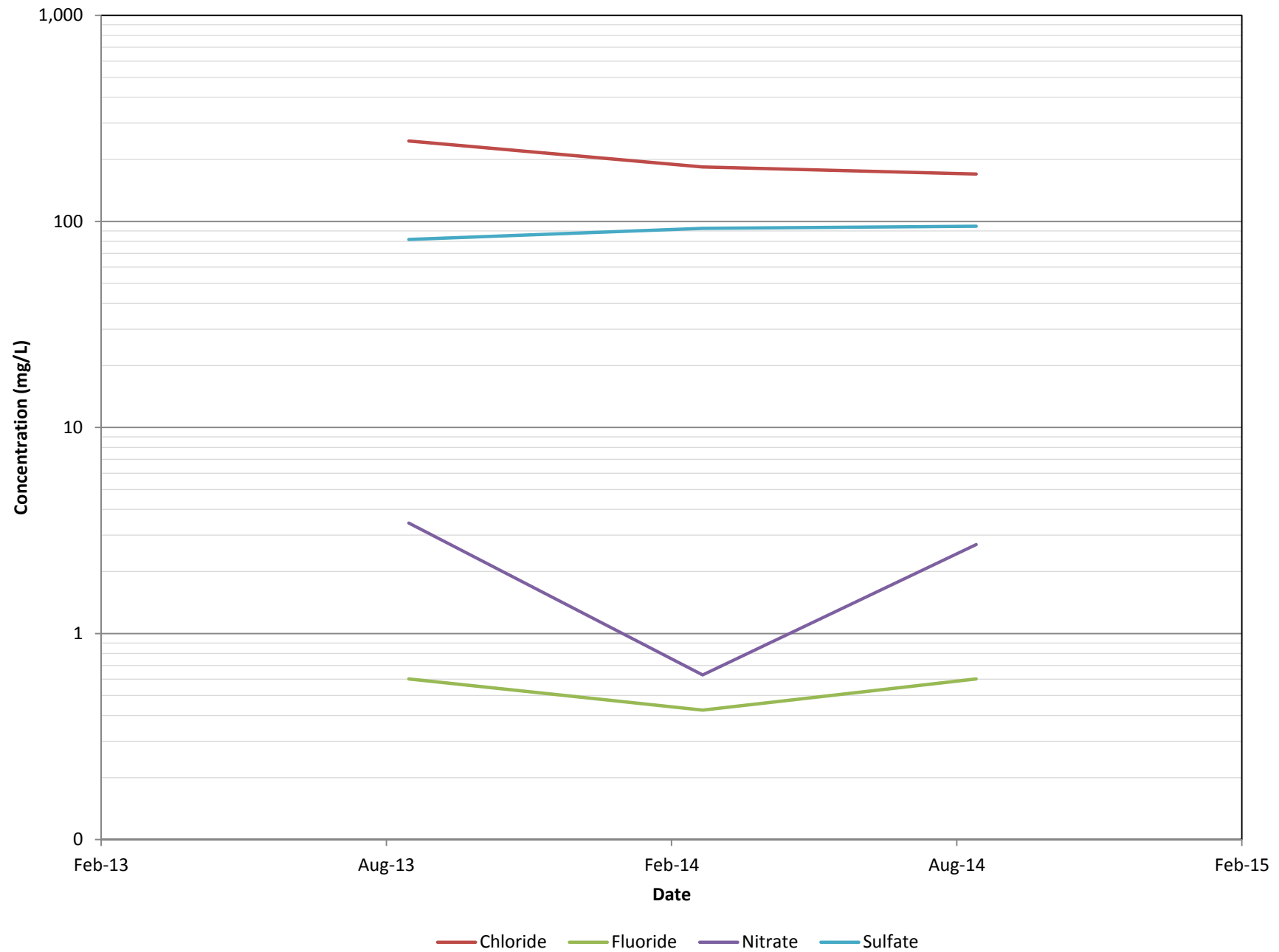
## MW-16: METAL CONCENTRATIONS OVER TIME



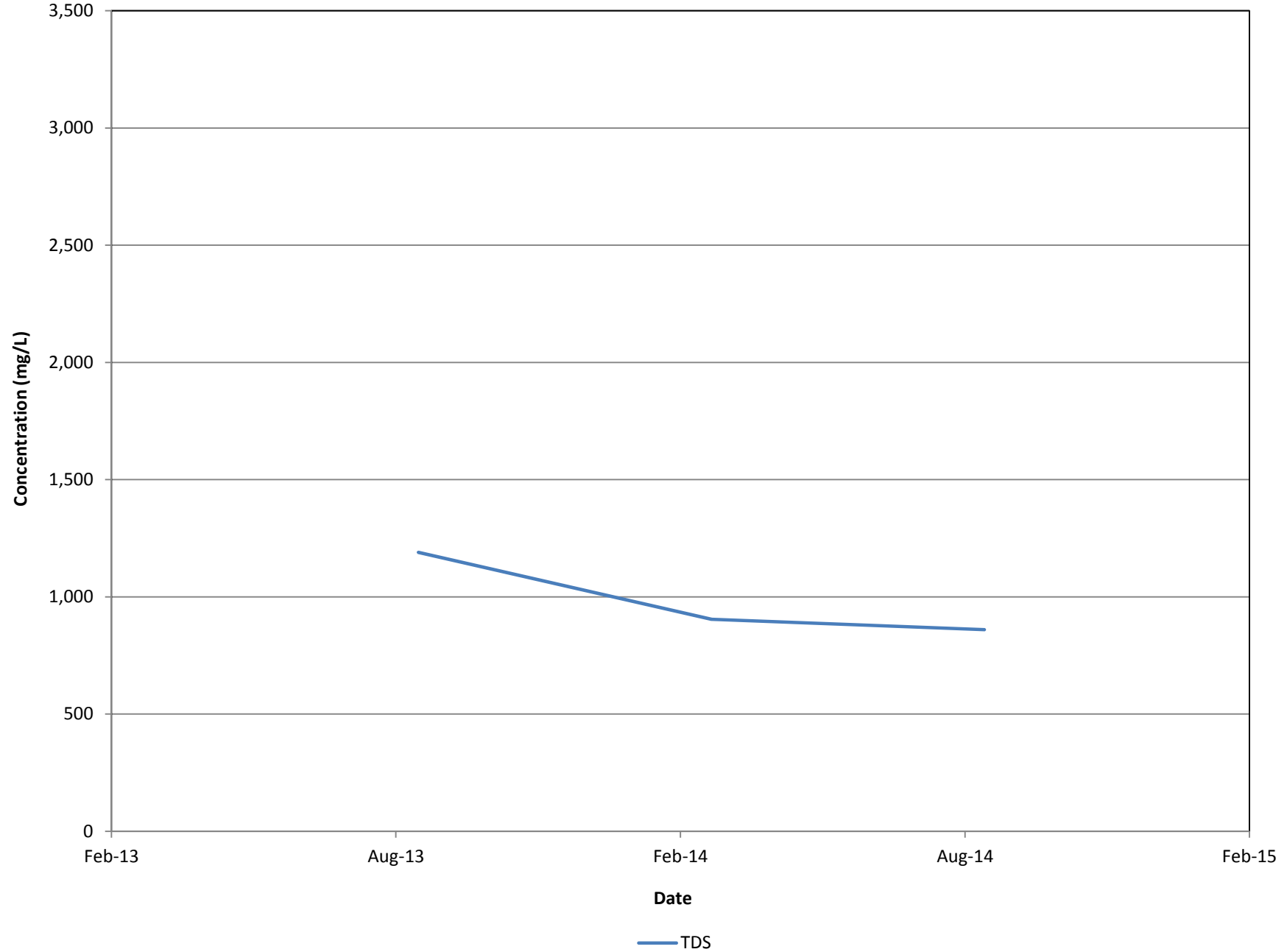
MW-16: SVOC CONCENTRATIONS OVER TIME



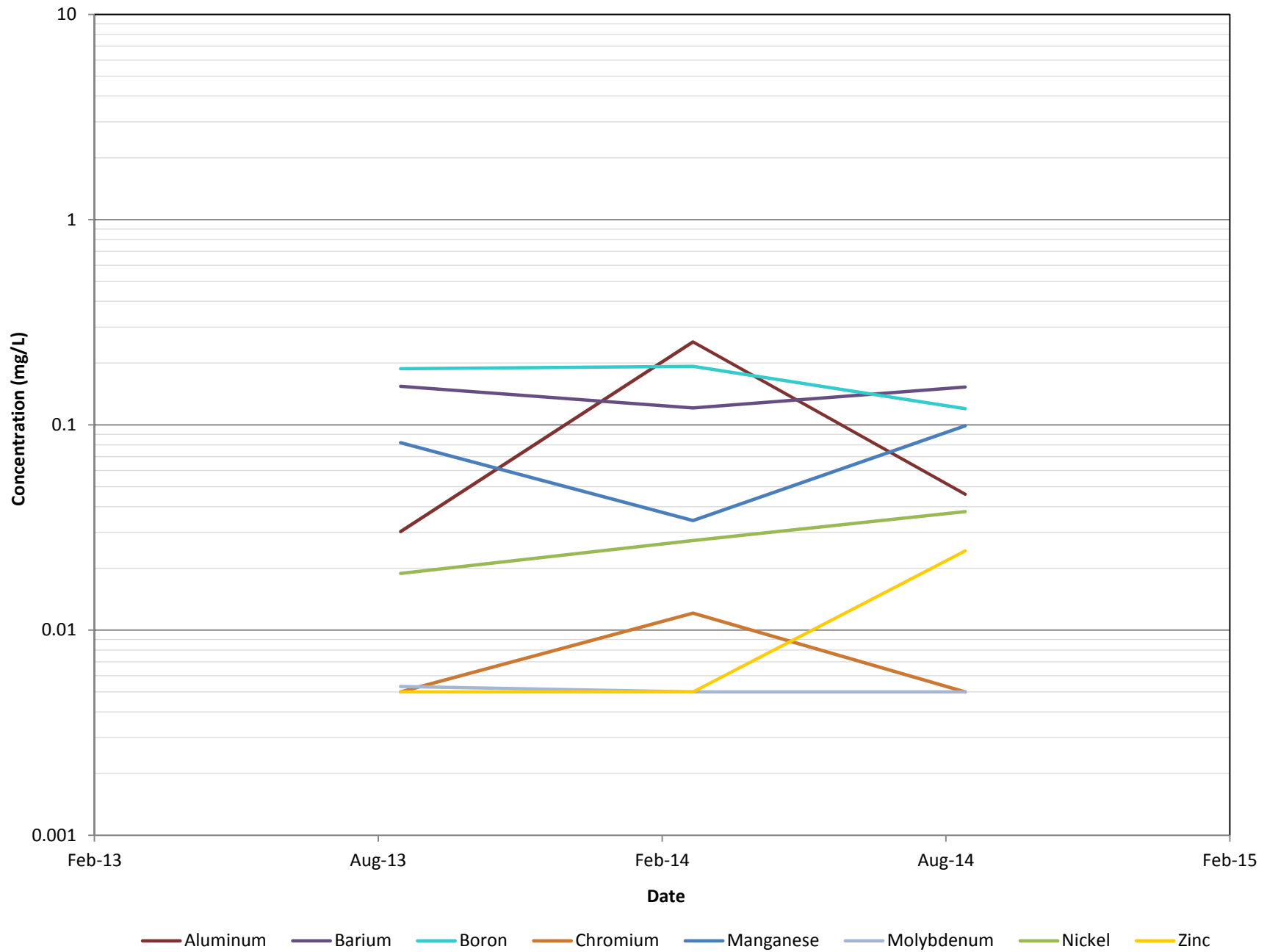
## MW-17R: ANION CONCENTRATIONS OVER TIME



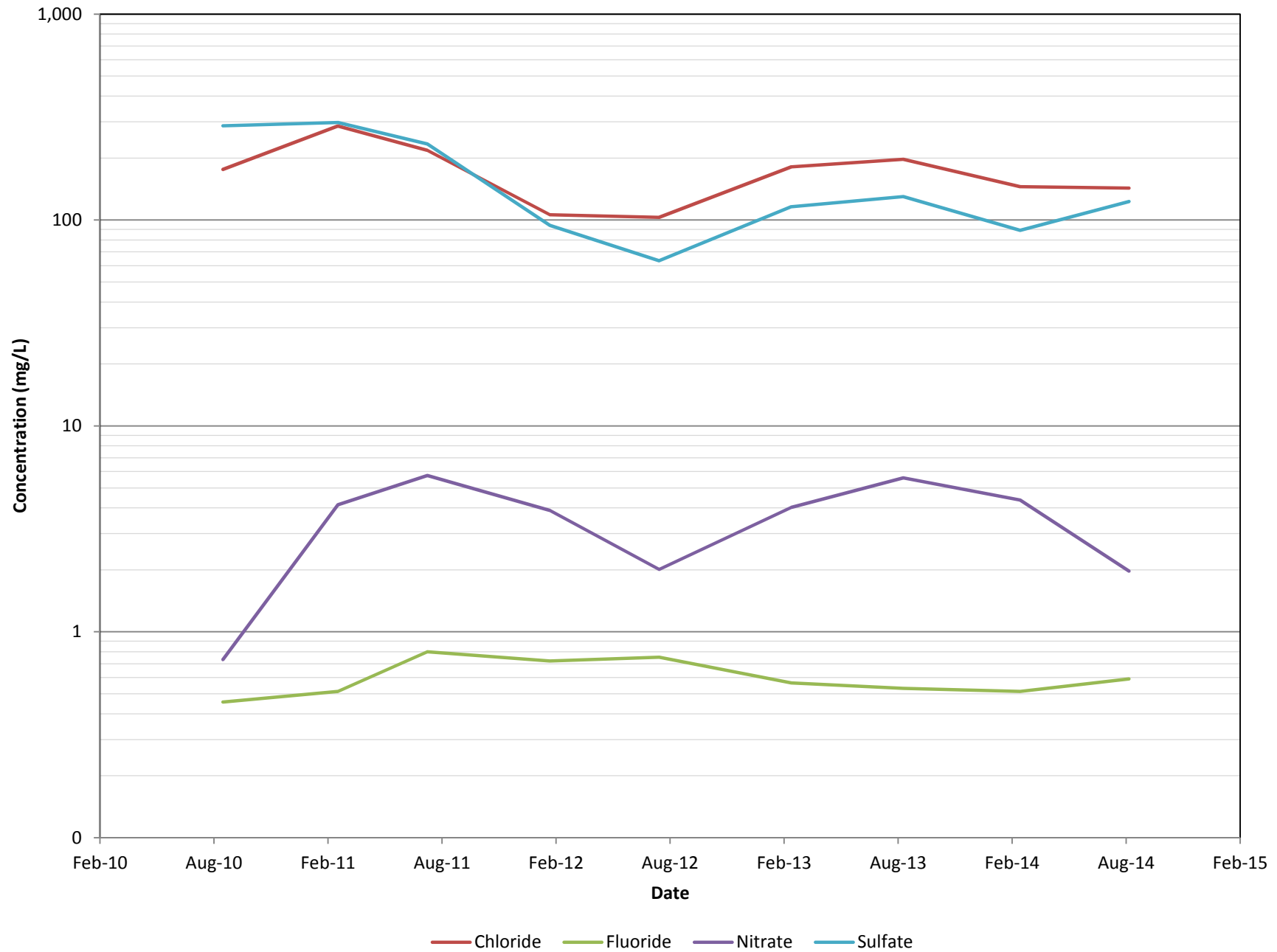
## MW-17R: TDS CONCENTRATIONS OVER TIME



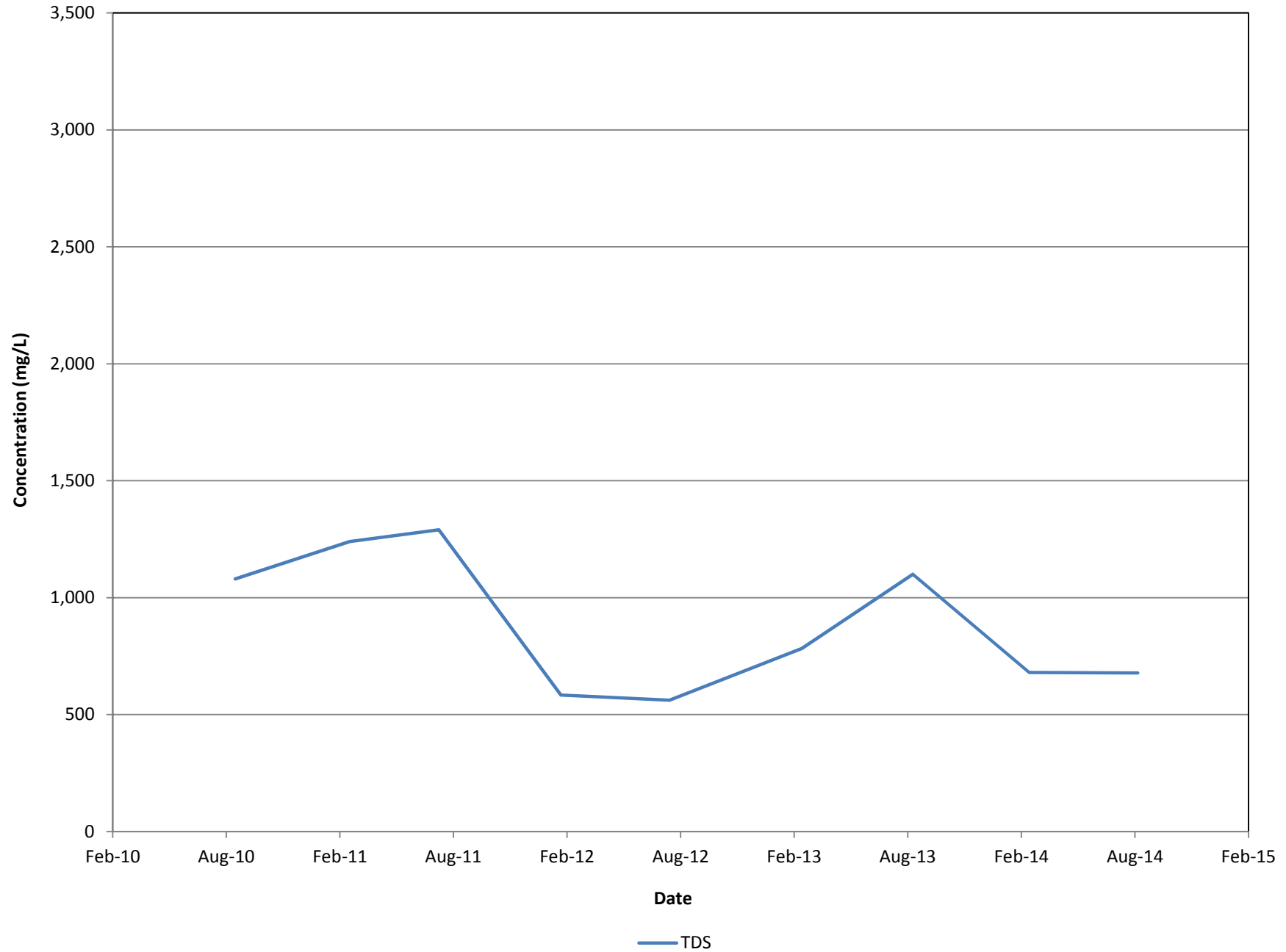
## MW-17R: METAL CONCENTRATIONS OVER TIME



## MW-18: ANION CONCENTRATIONS OVER TIME

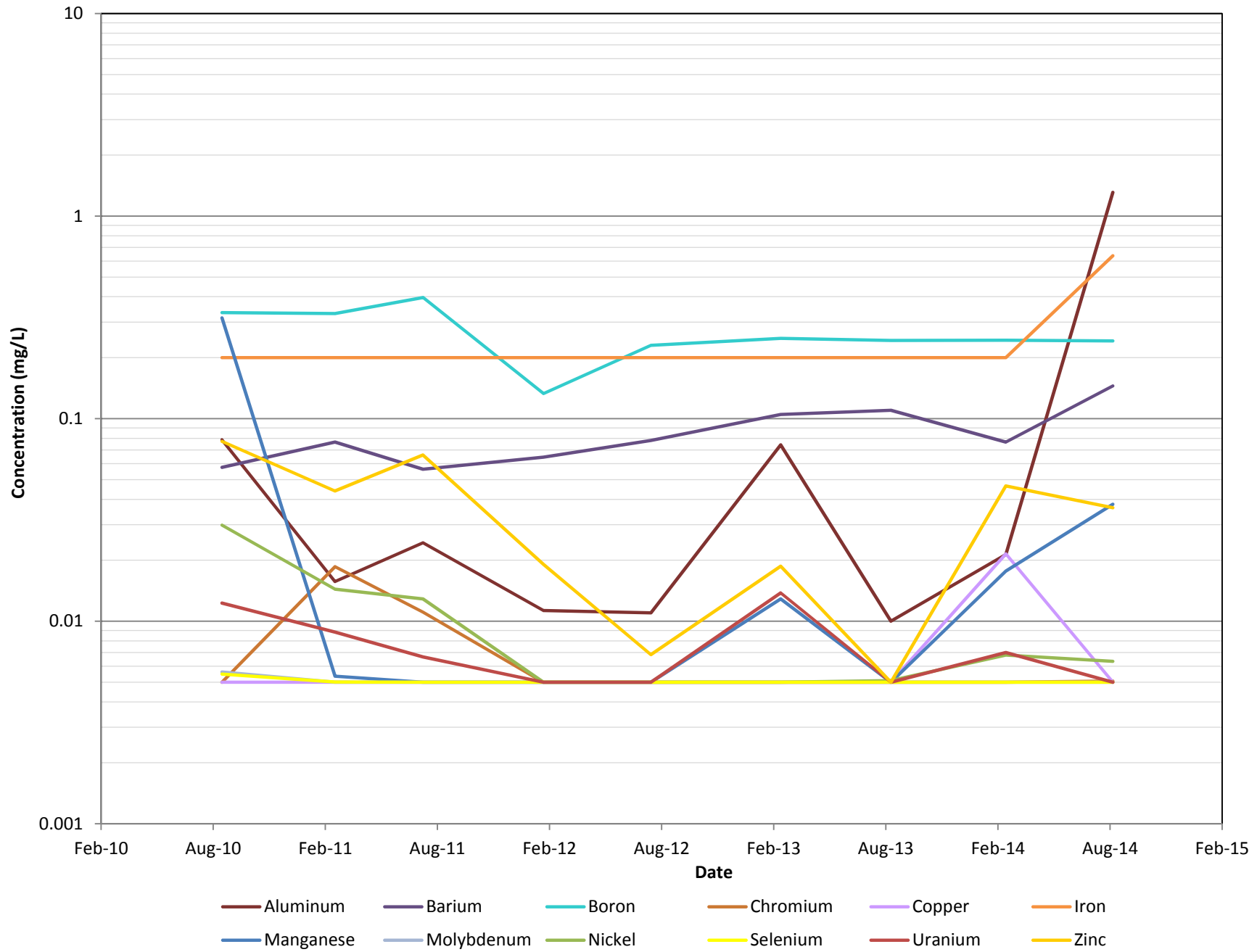


## MW-18: TDS CONCENTRATIONS OVER TIME

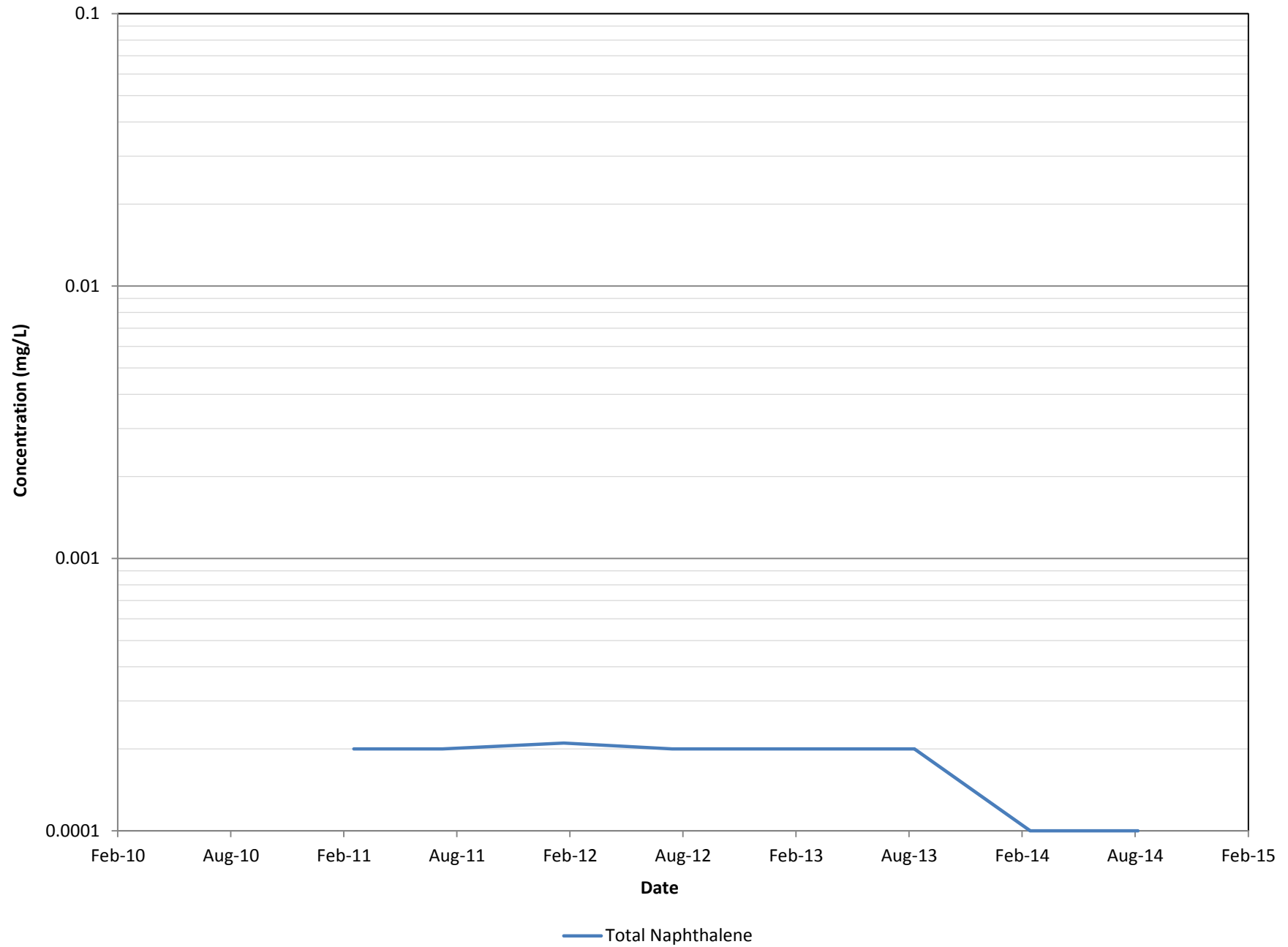




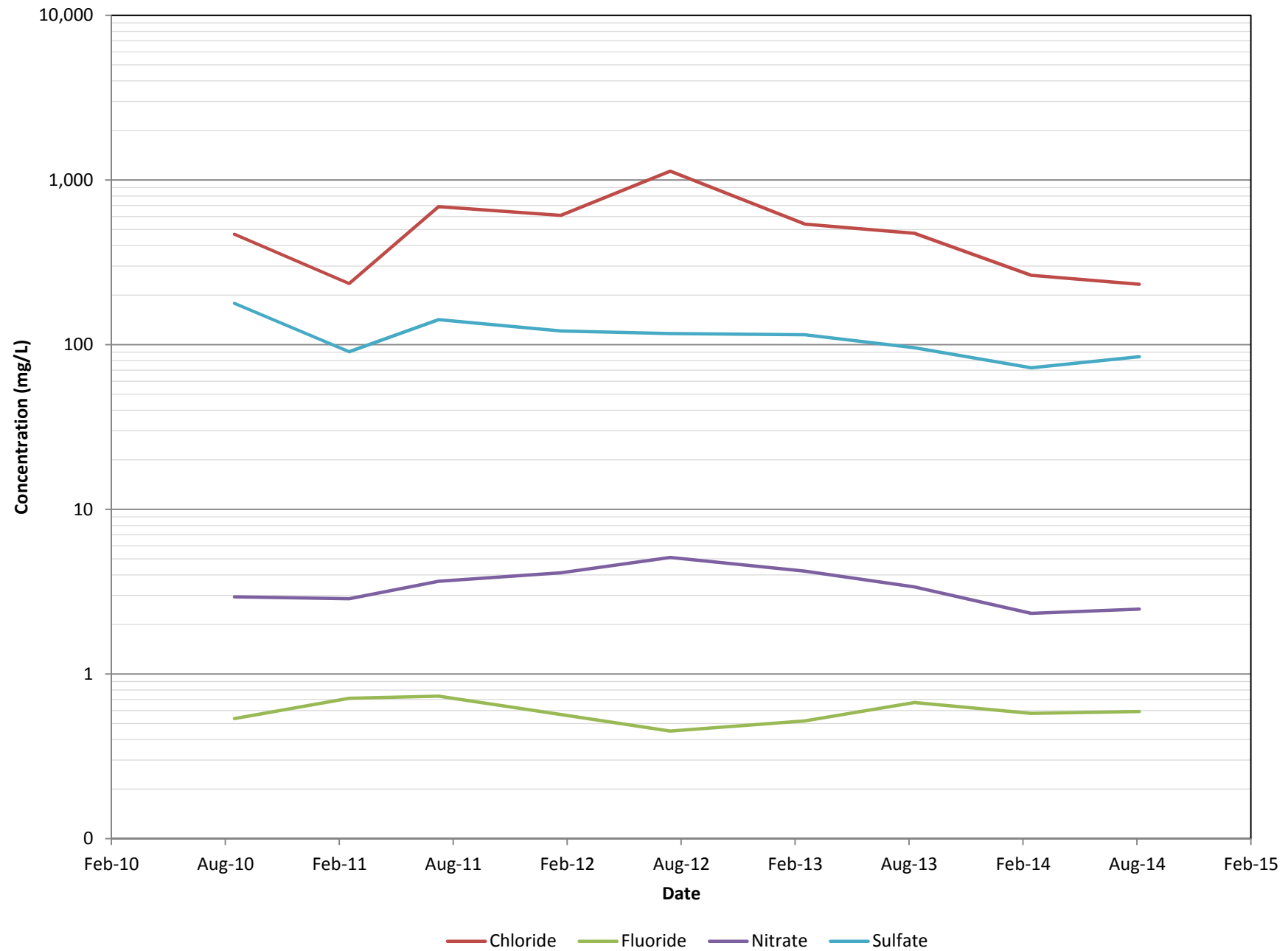
## MW-18: METAL CONCENTRATIONS OVER TIME



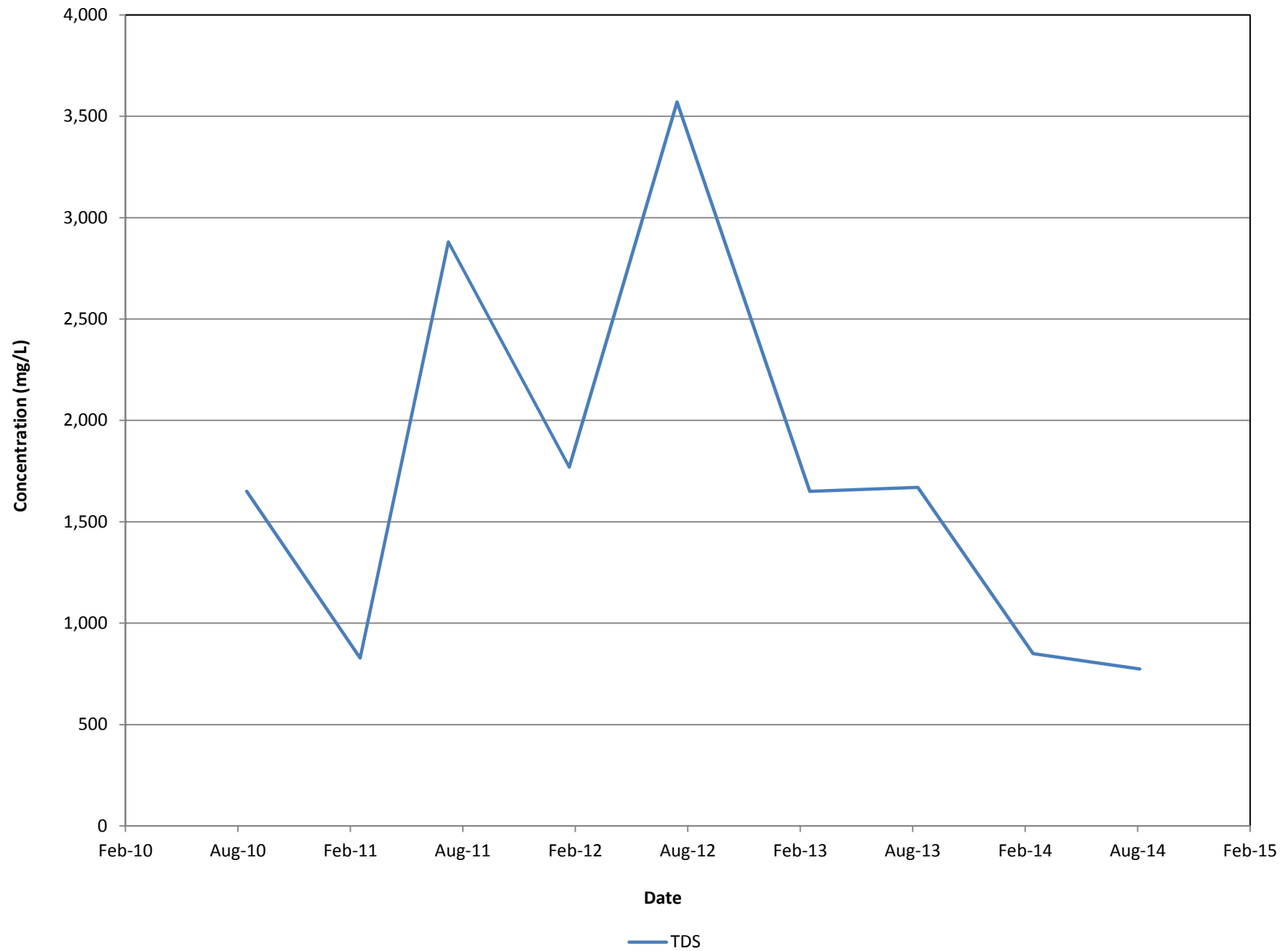
## MW-18: SVOC CONCENTRATIONS OVER TIME



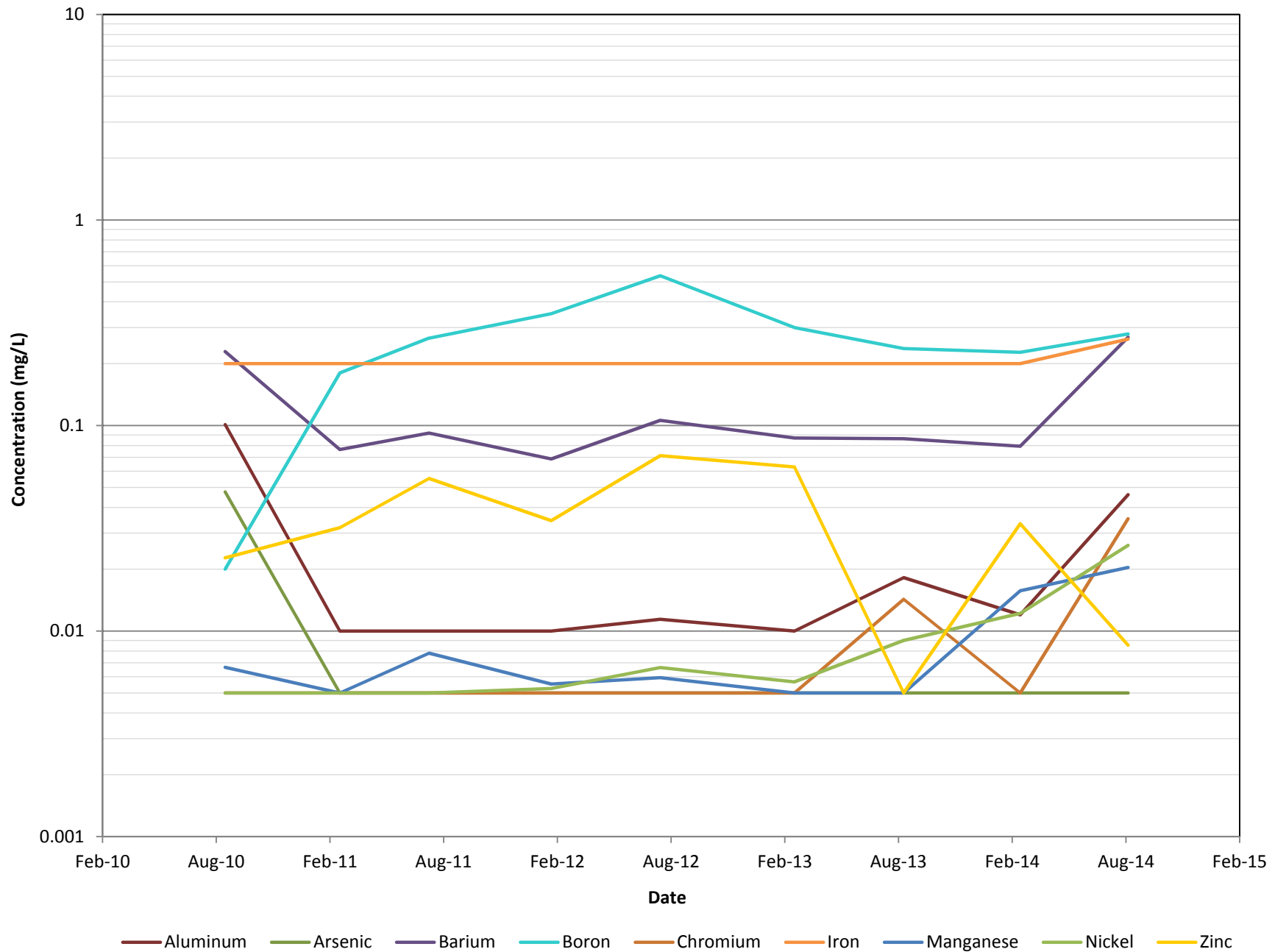
## MW-19: ANION CONCENTRATIONS OVER TIME



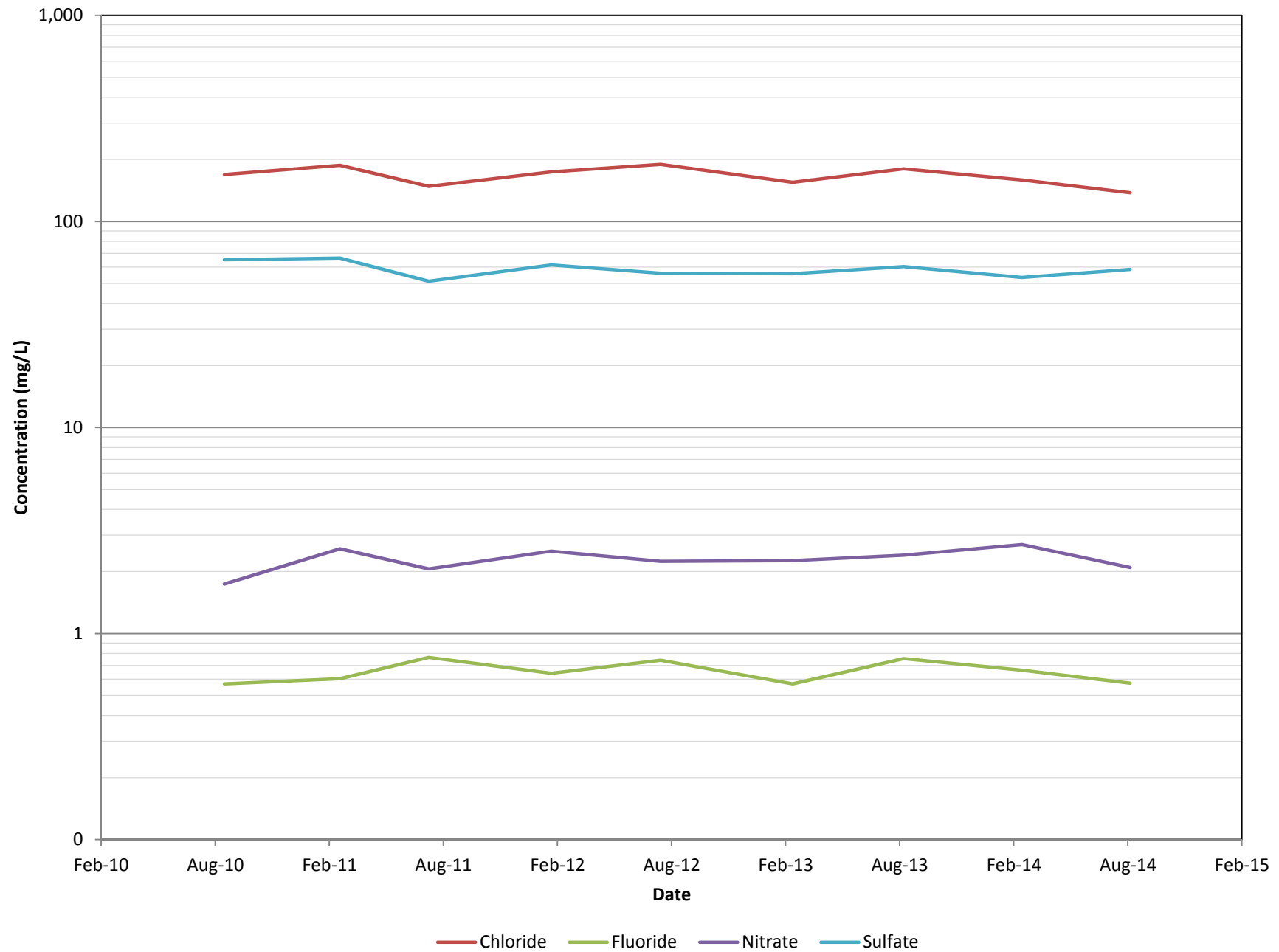
## MW-19: TDS CONCENTRATIONS OVER TIME



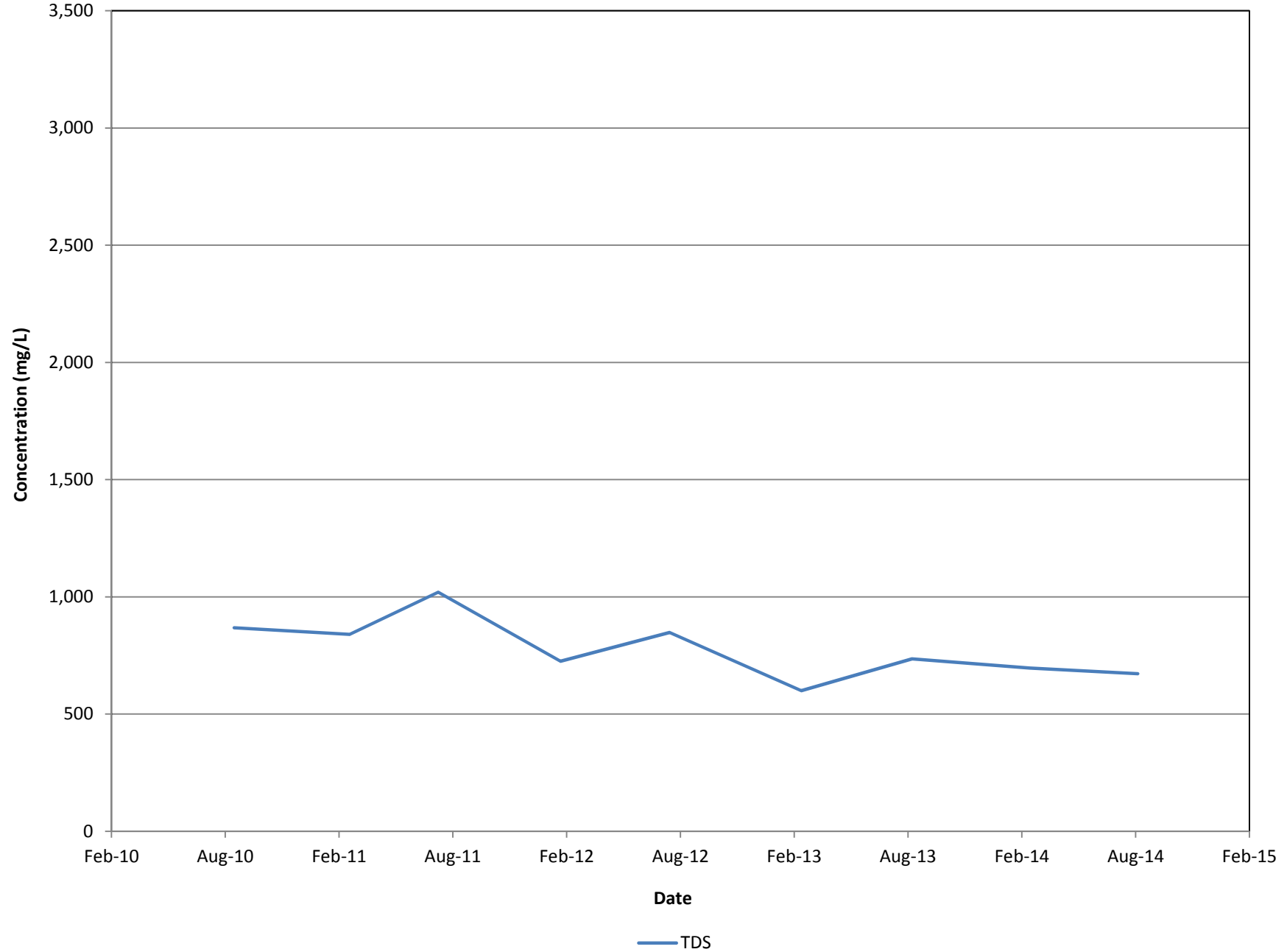
## MW-19: METAL CONCENTRATIONS OVER TIME



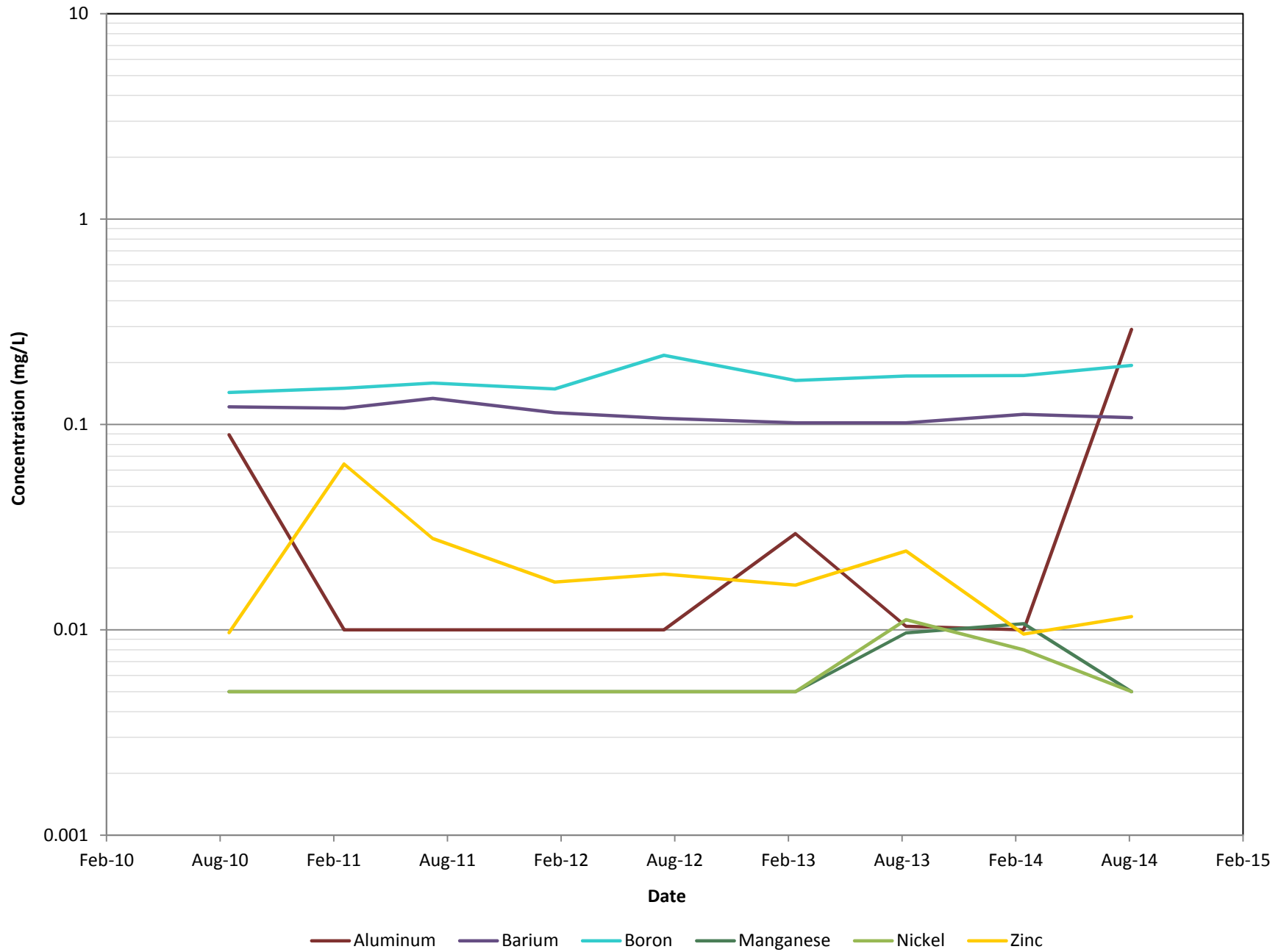
## MW-20: ANION CONCENTRATIONS OVER TIME



## MW-20: TDS CONCENTRATIONS OVER TIME

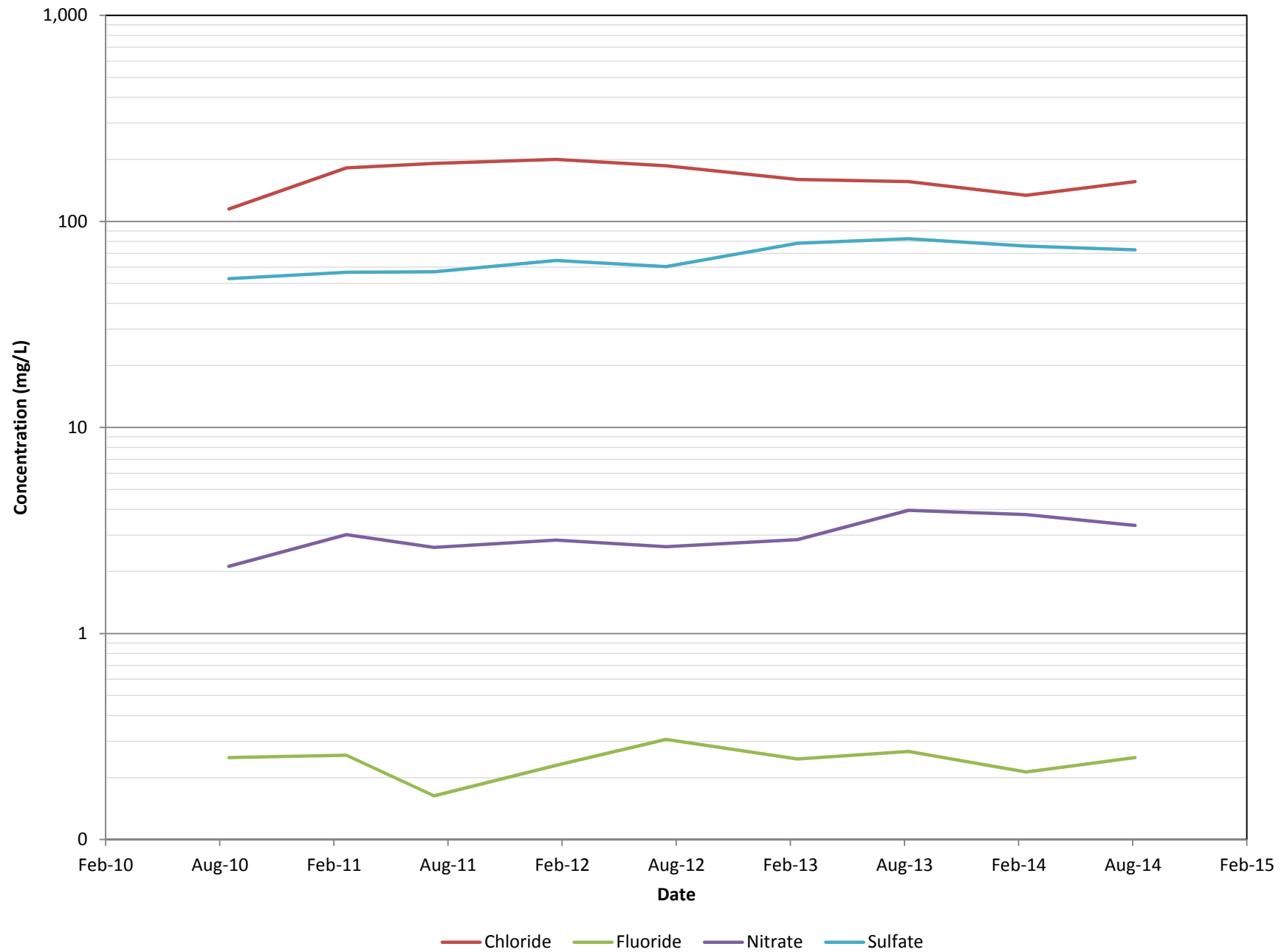


## MW-20: METAL CONCENTRATIONS OVER TIME

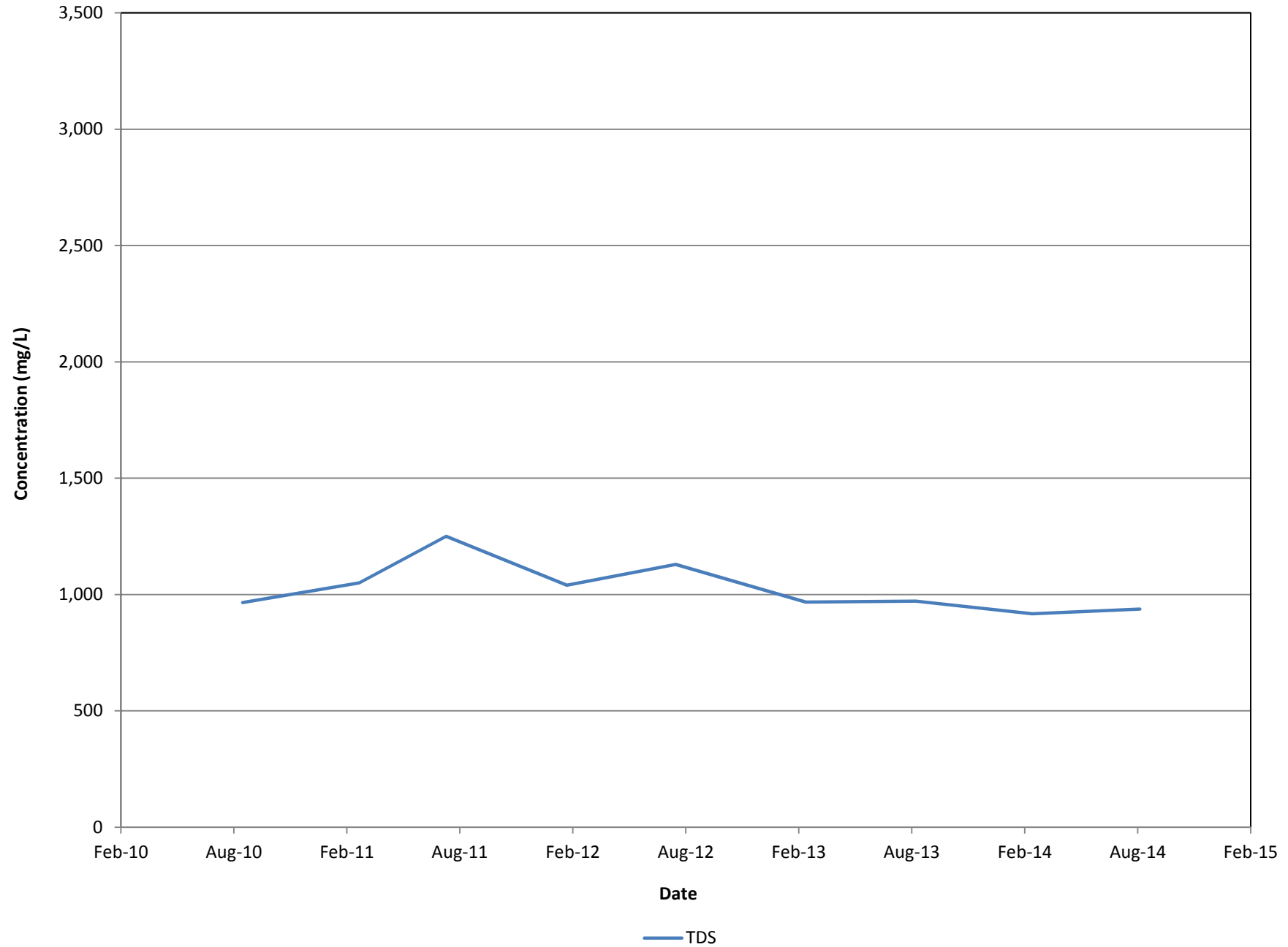




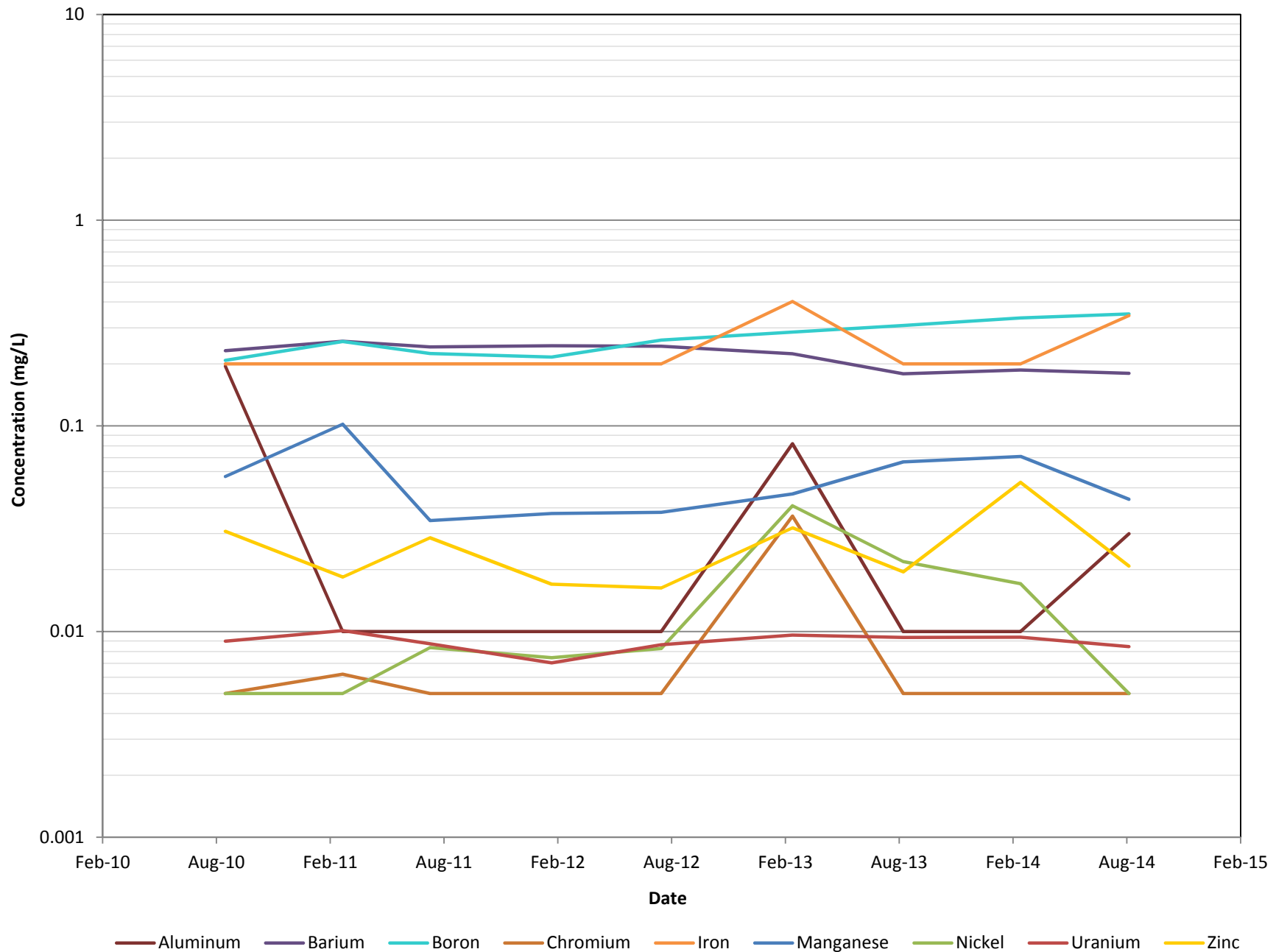
## MW-21: ANION CONCENTRATIONS OVER TIME



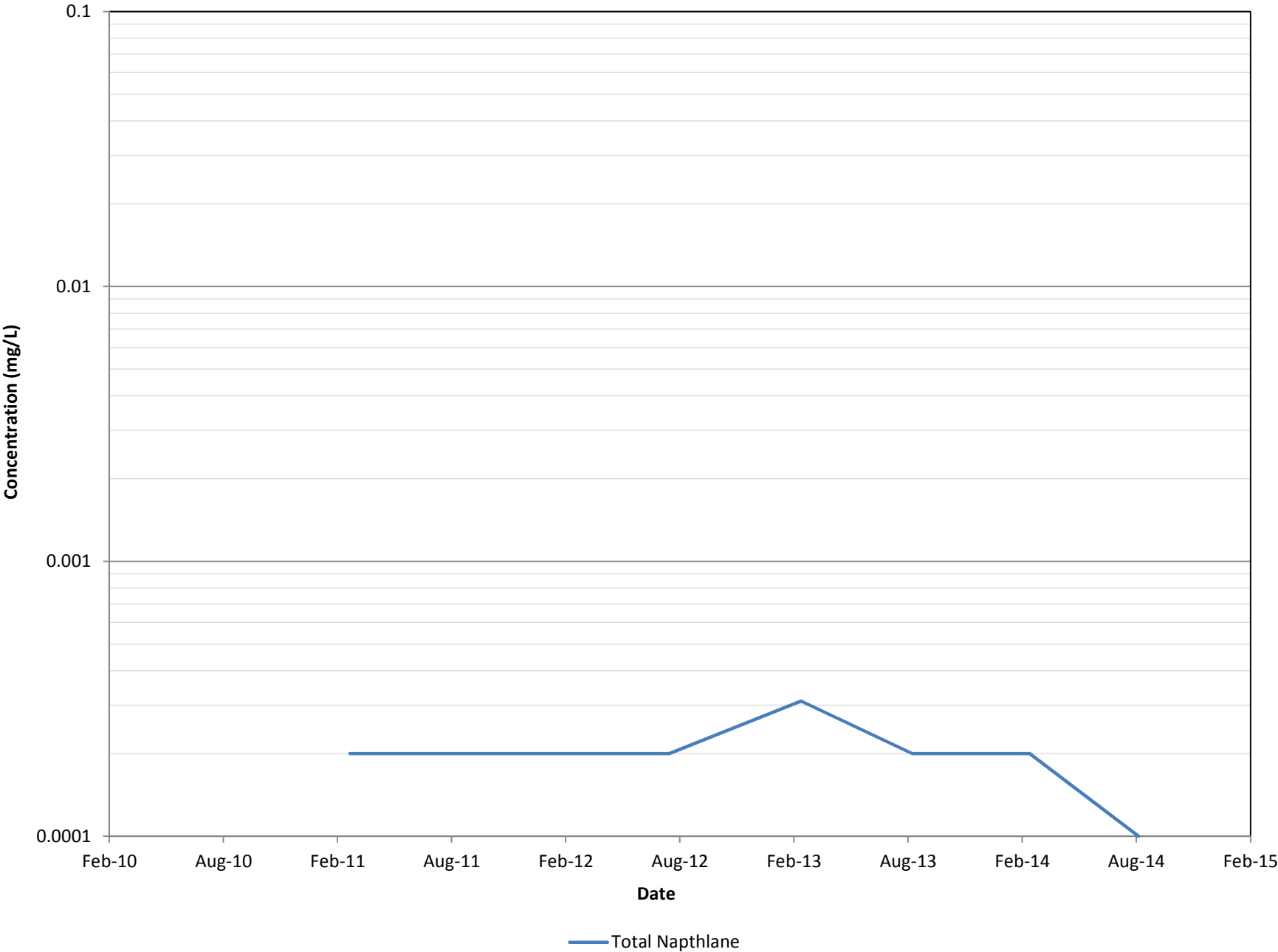
## MW-21: TDS CONCENTRATIONS OVER TIME



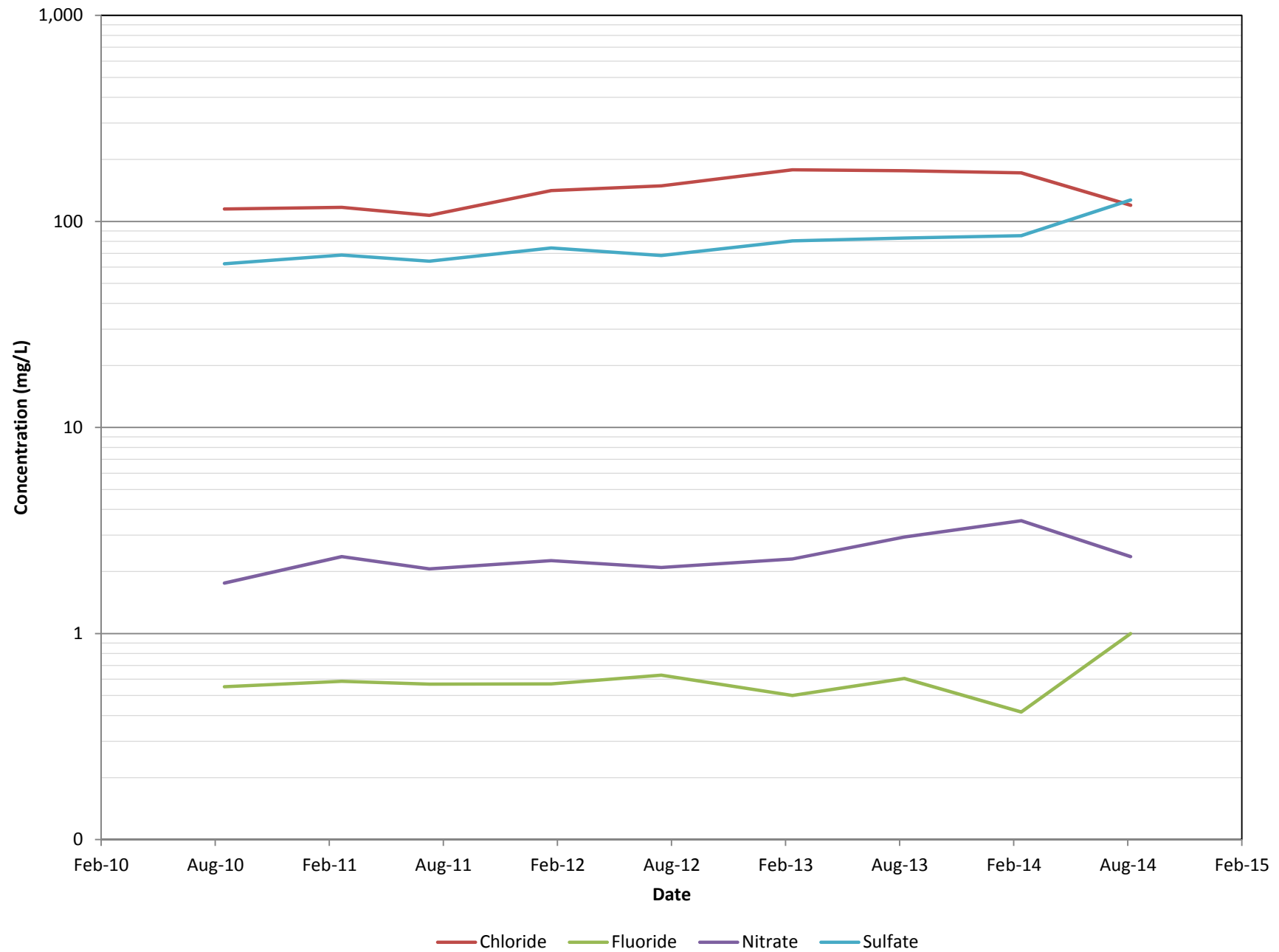
## MW-21: METAL CONCENTRATIONS OVER TIME



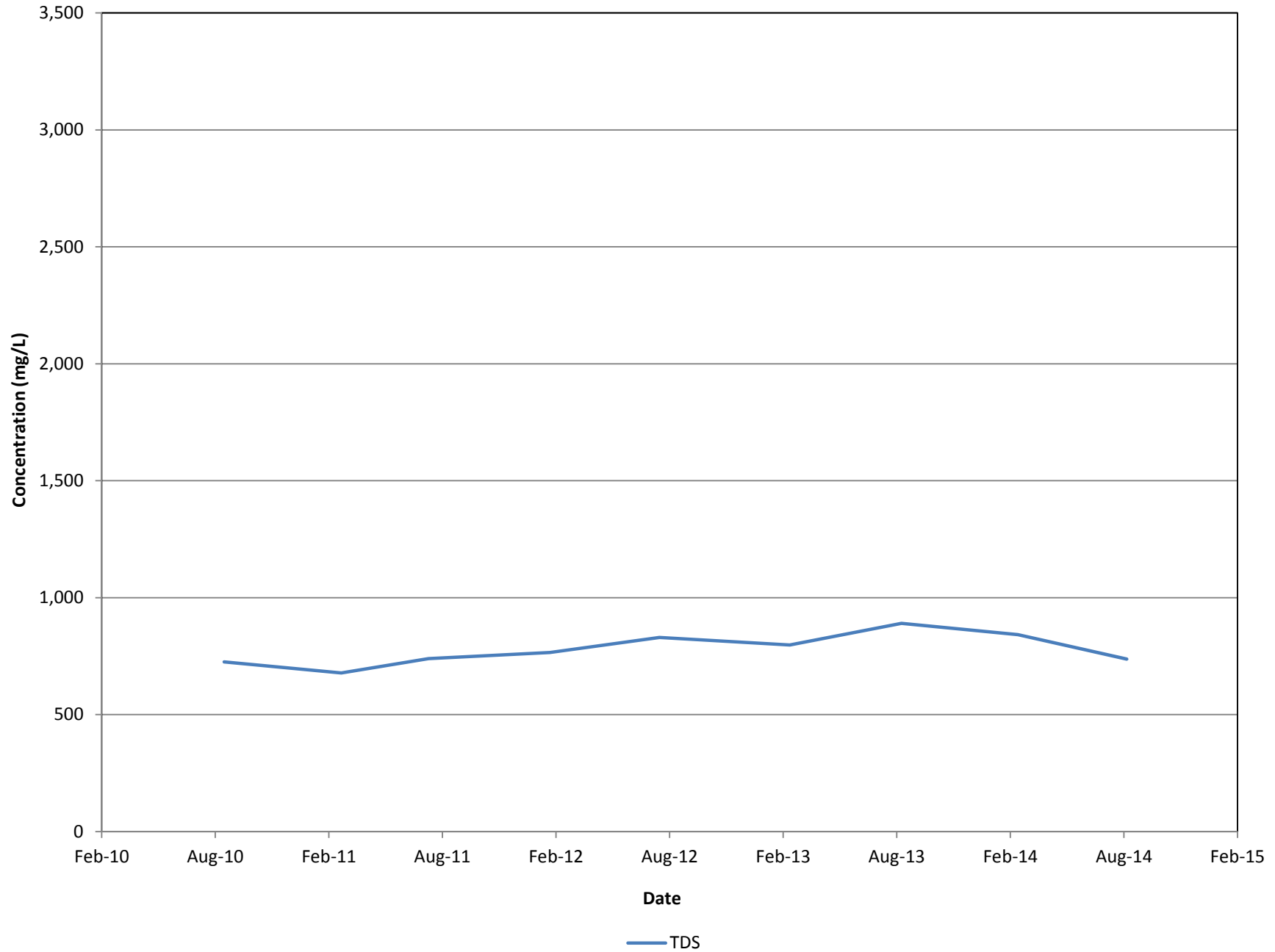
MW-21: SVOC CONCENTRATIONS OVER TIME



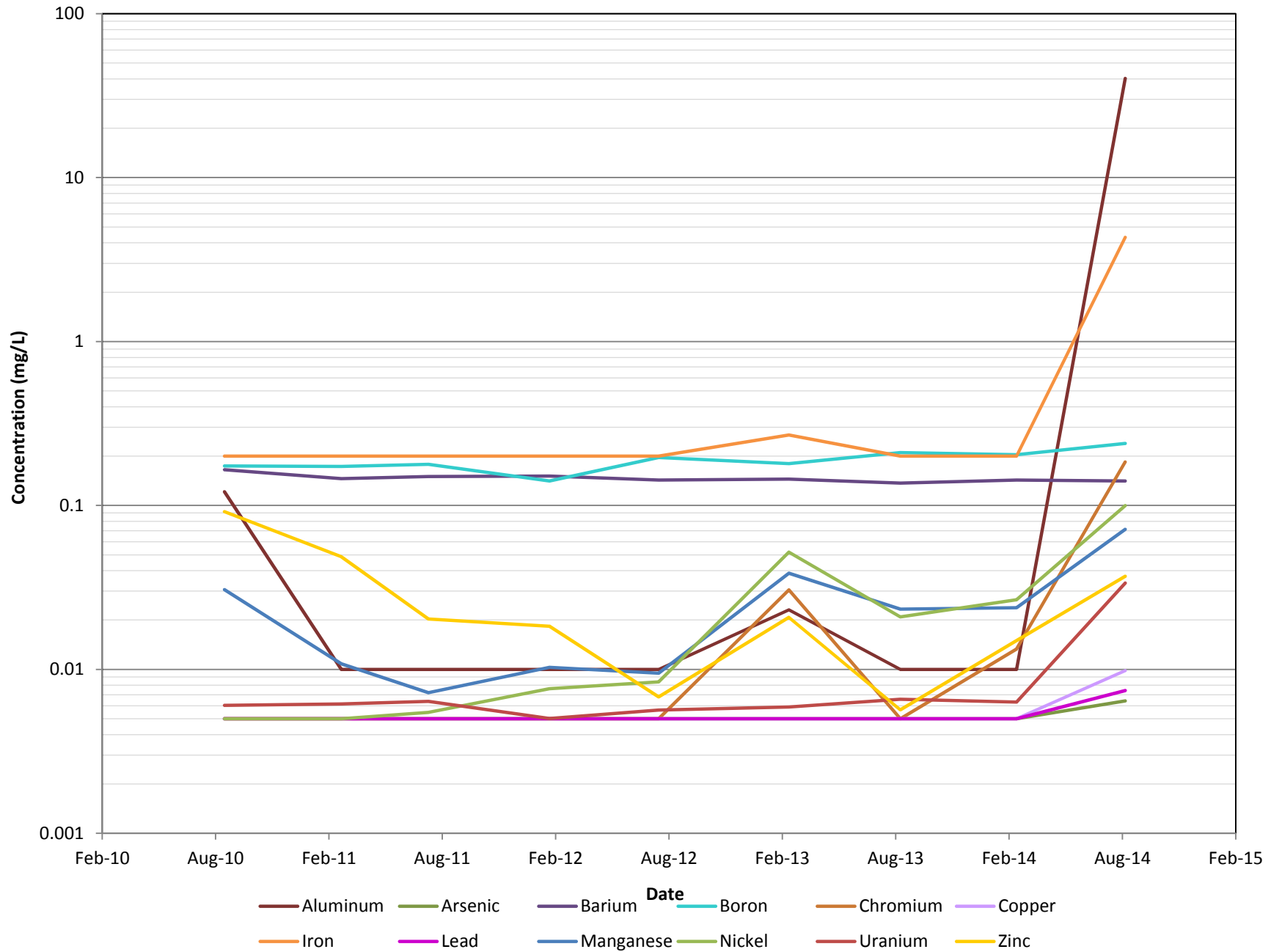
## MW-22: ANION CONCENTRATIONS OVER TIME



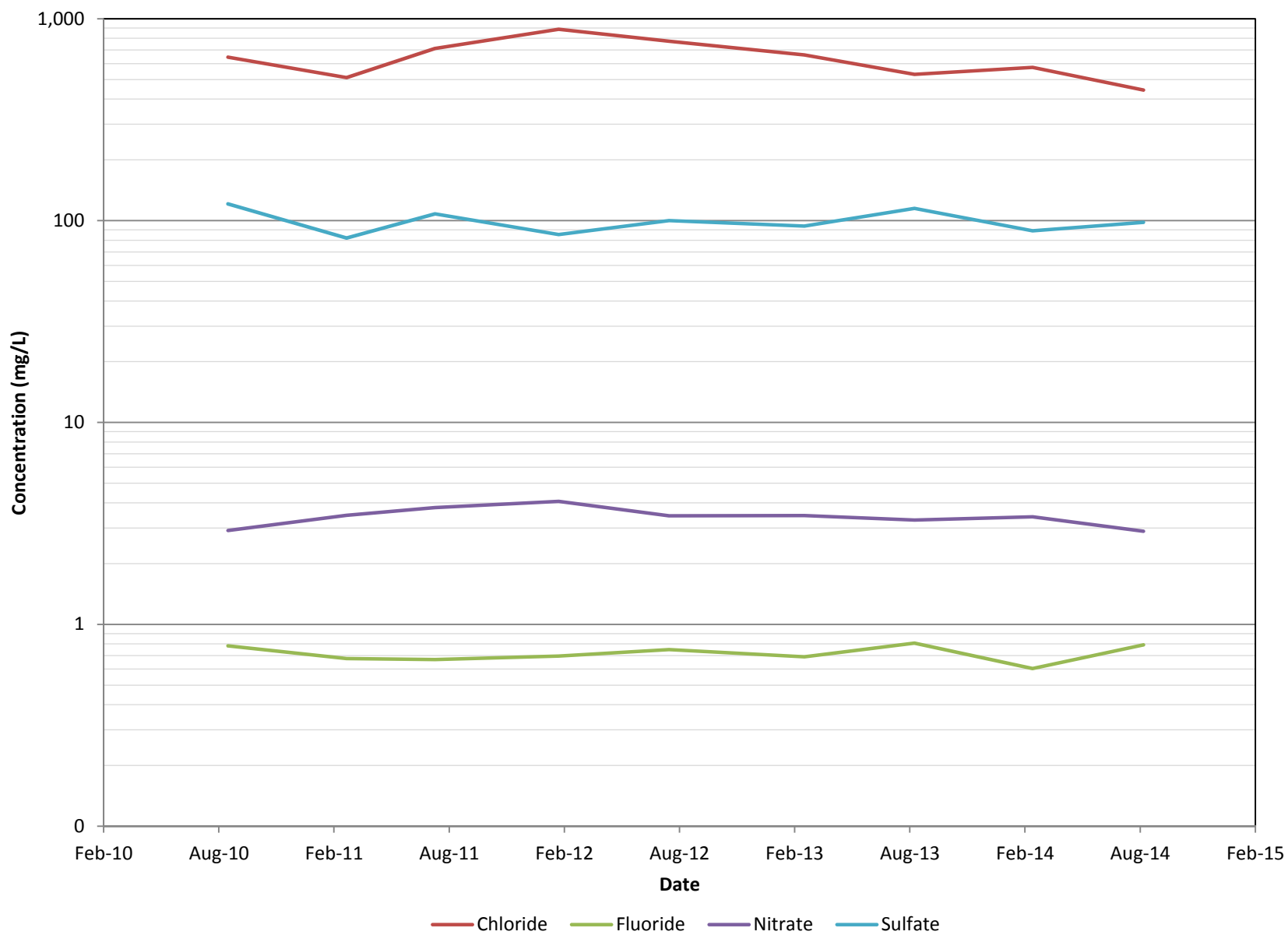
## MW-22: TDS CONCENTRATIONS OVER TIME



## MW-22: METAL CONCENTRATIONS OVER TIME

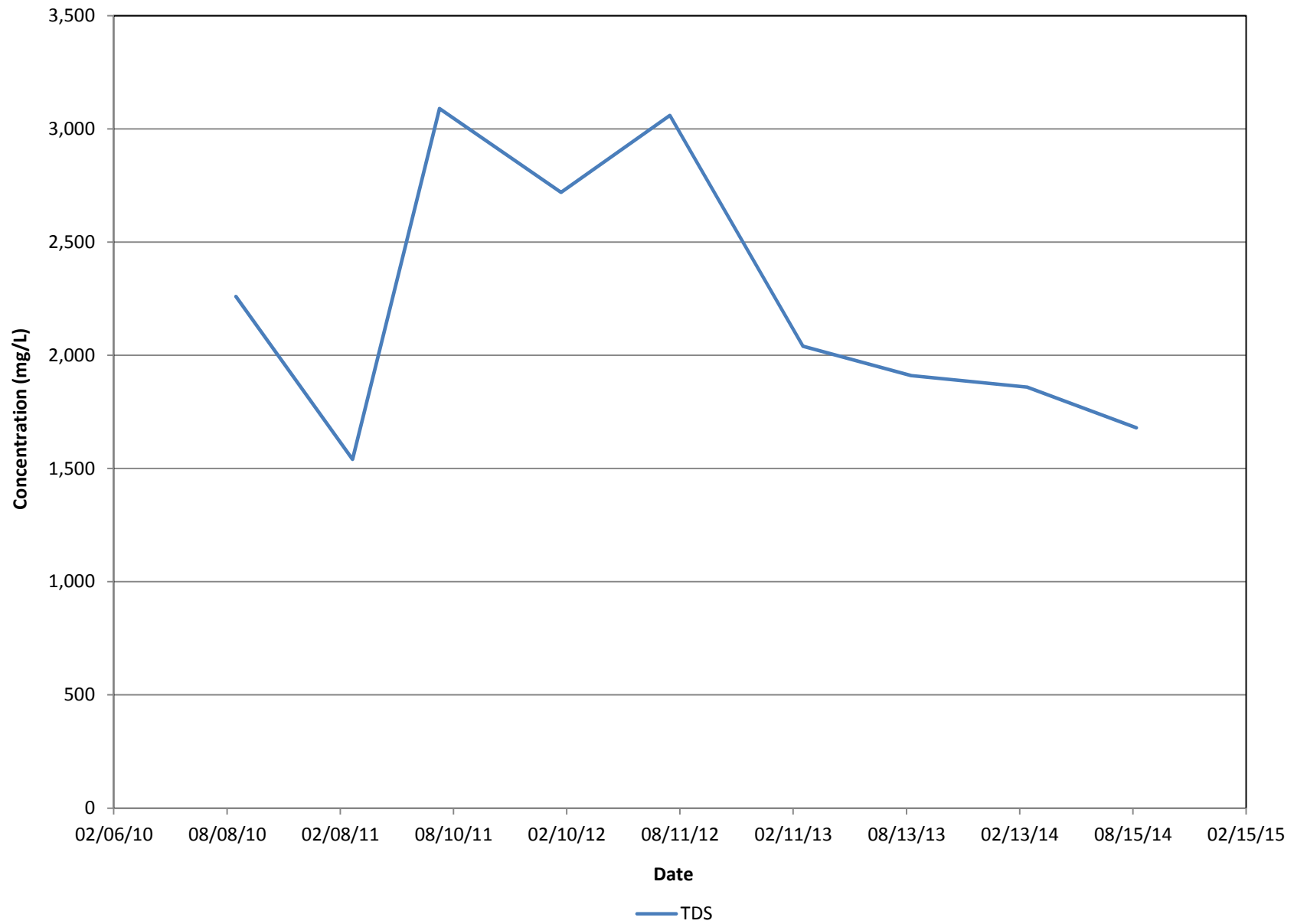


## MW-23: ANION CONCENTRATIONS OVER TIME

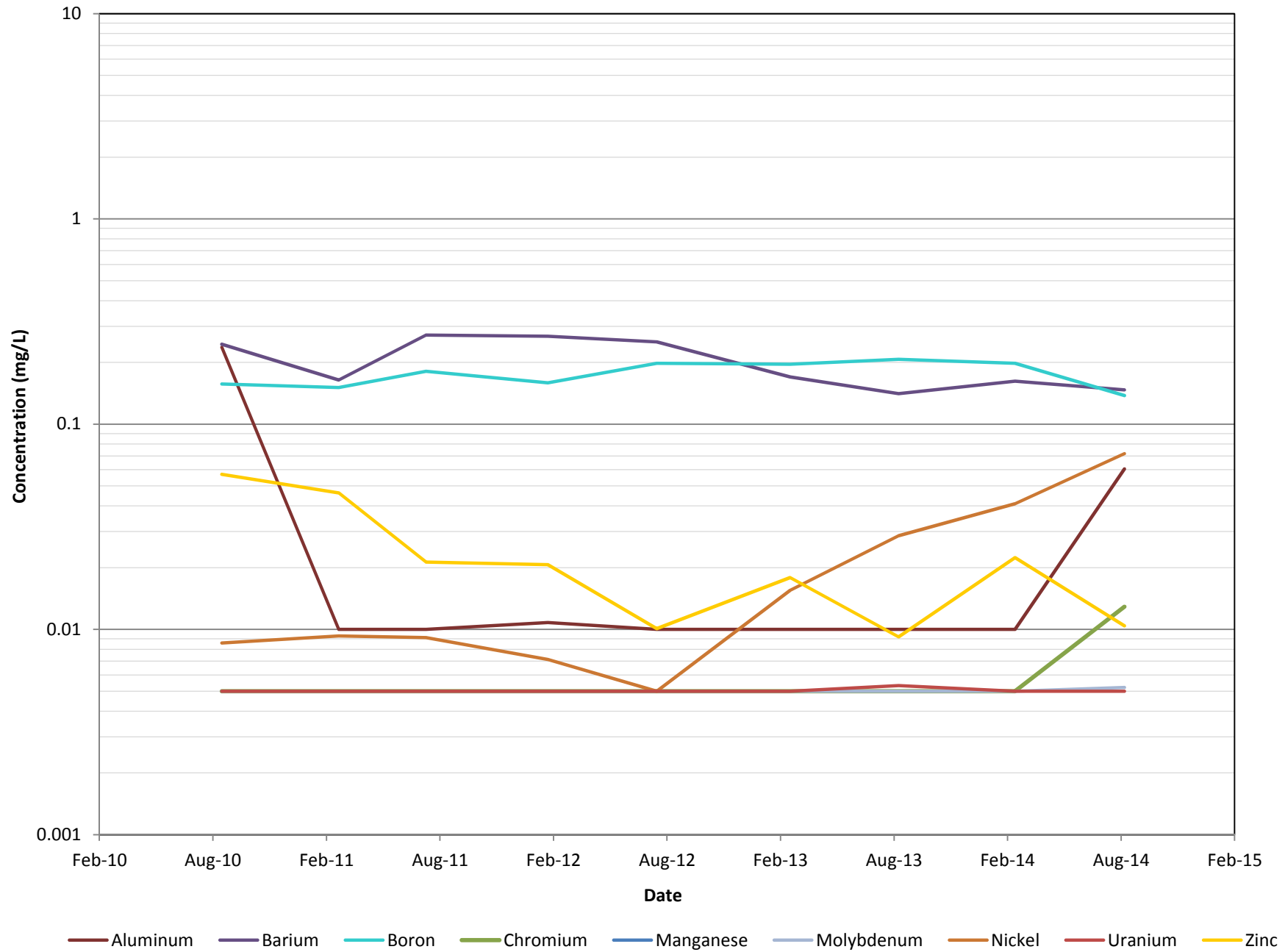




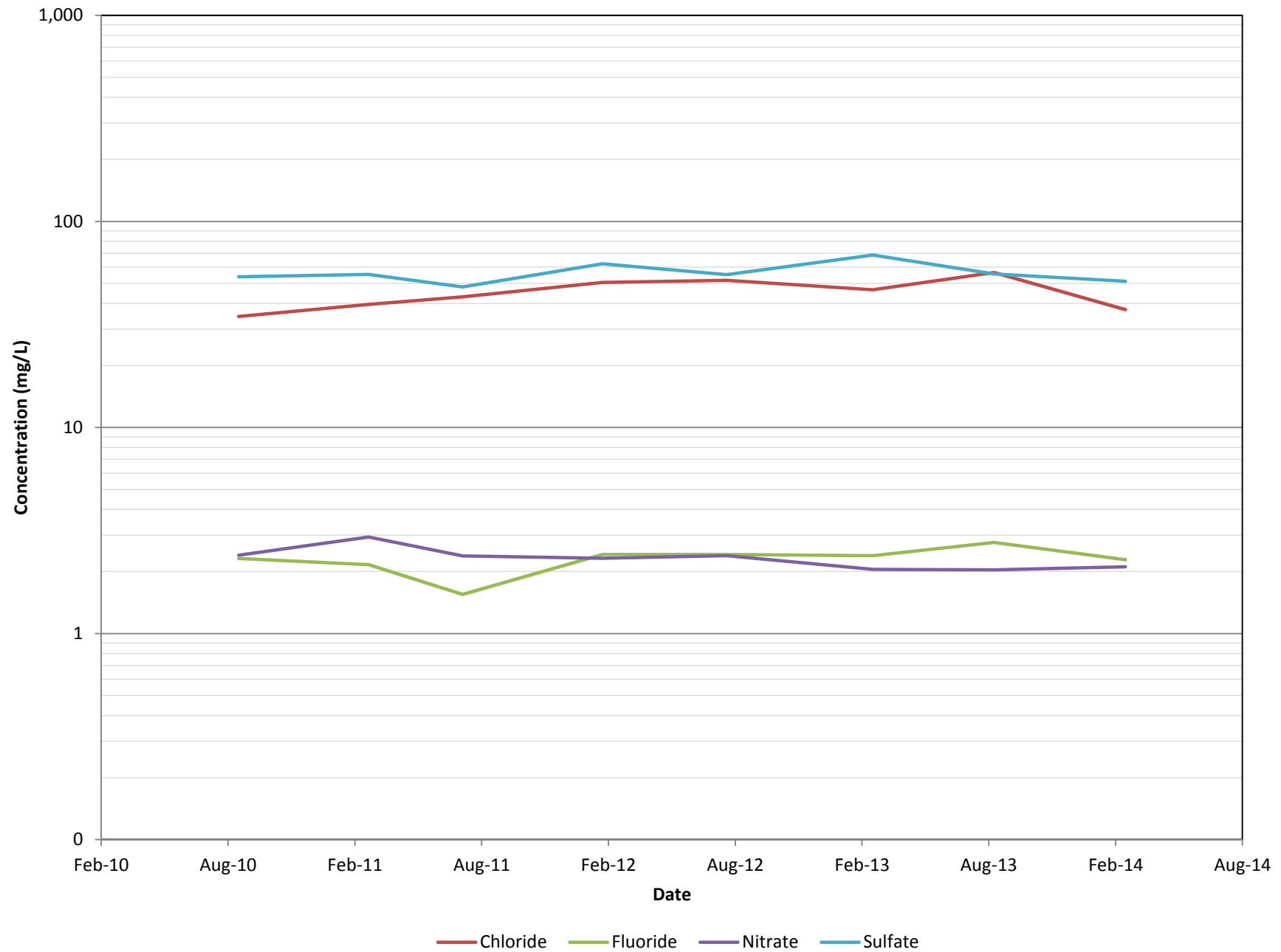
## MW-23: TDS CONCENTRATIONS OVER TIME



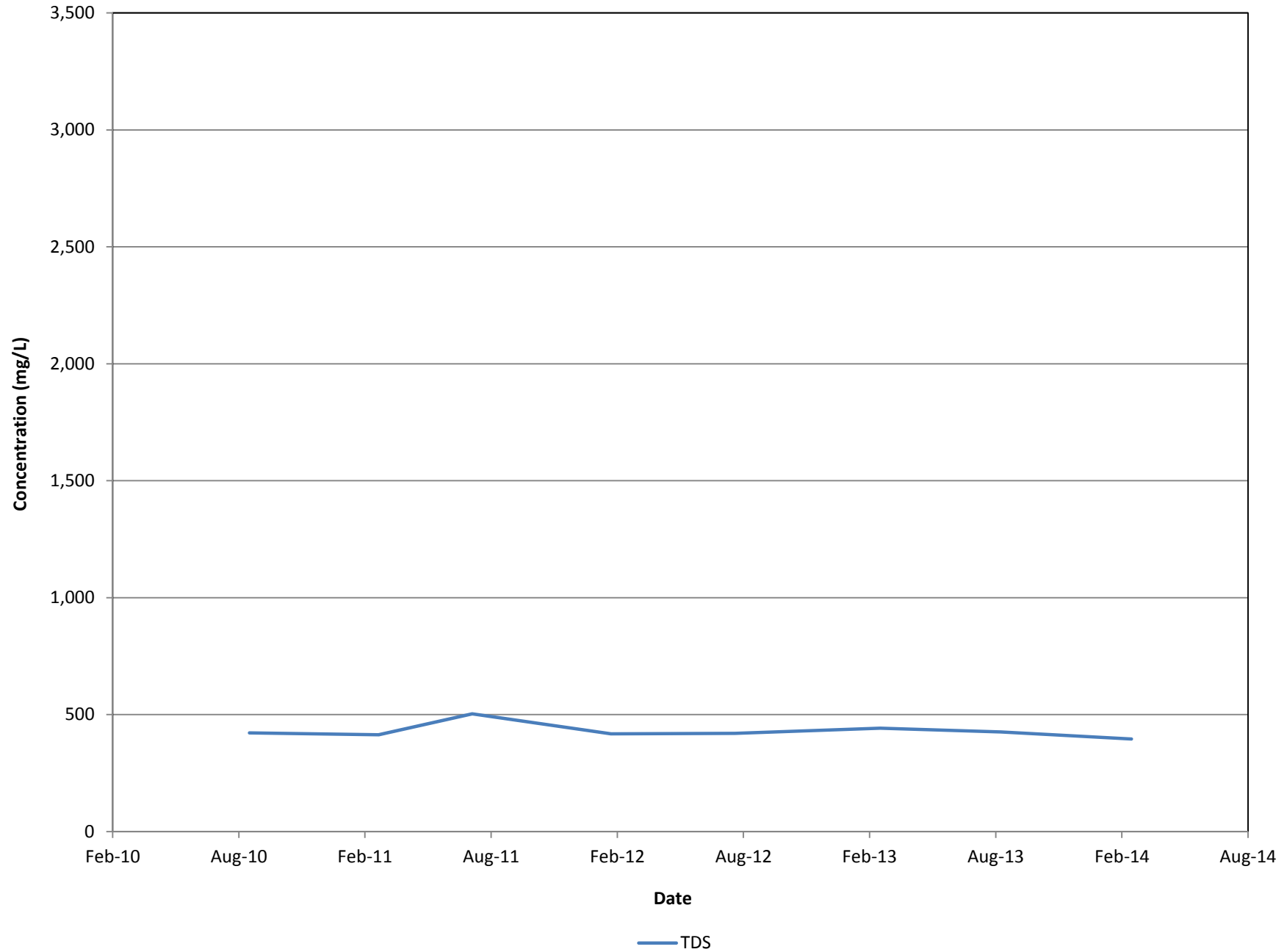
## MW-23: METAL CONCENTRATIONS OVER TIME



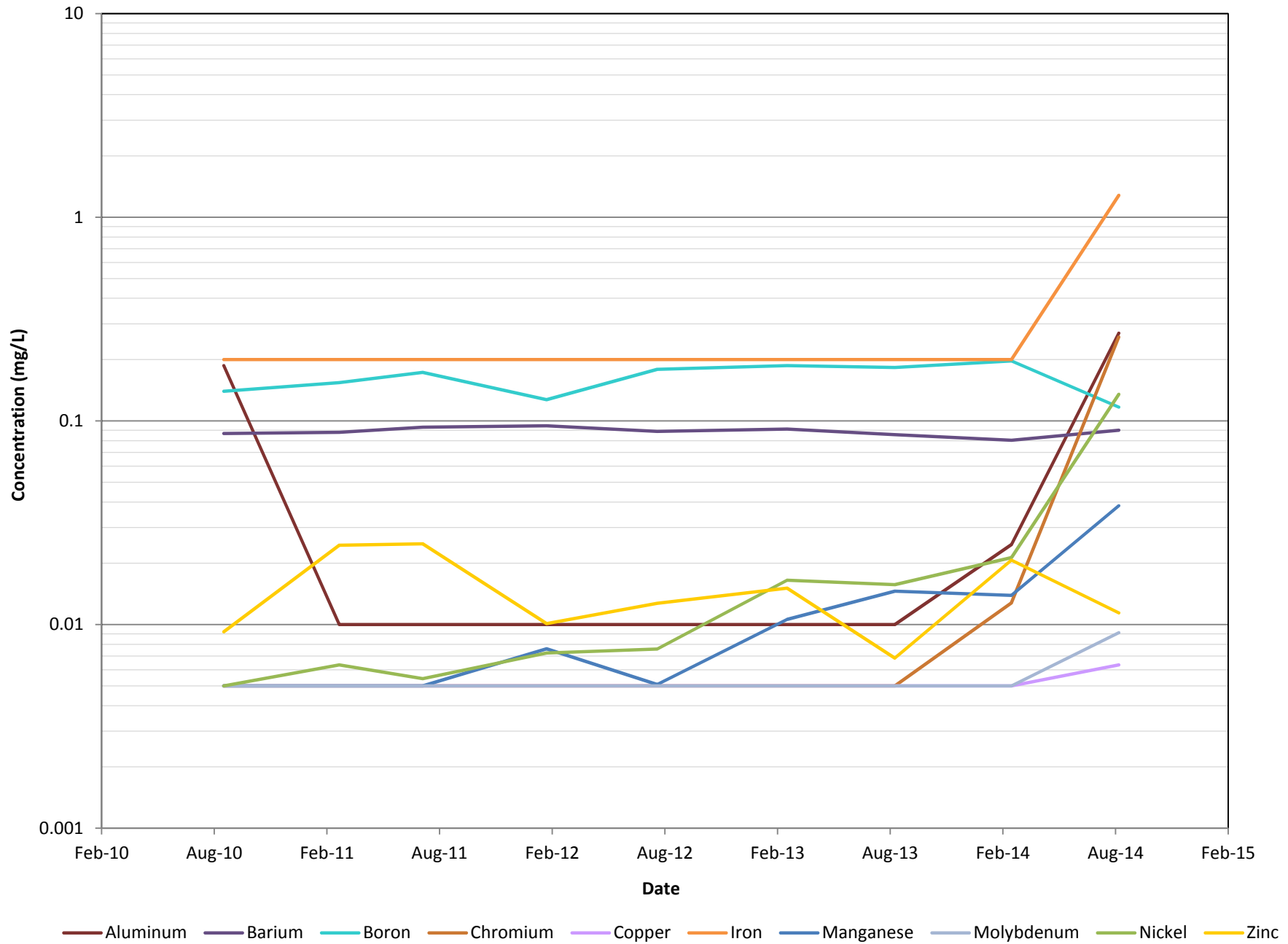
## MW-24: ANION CONCENTRATIONS OVER TIME



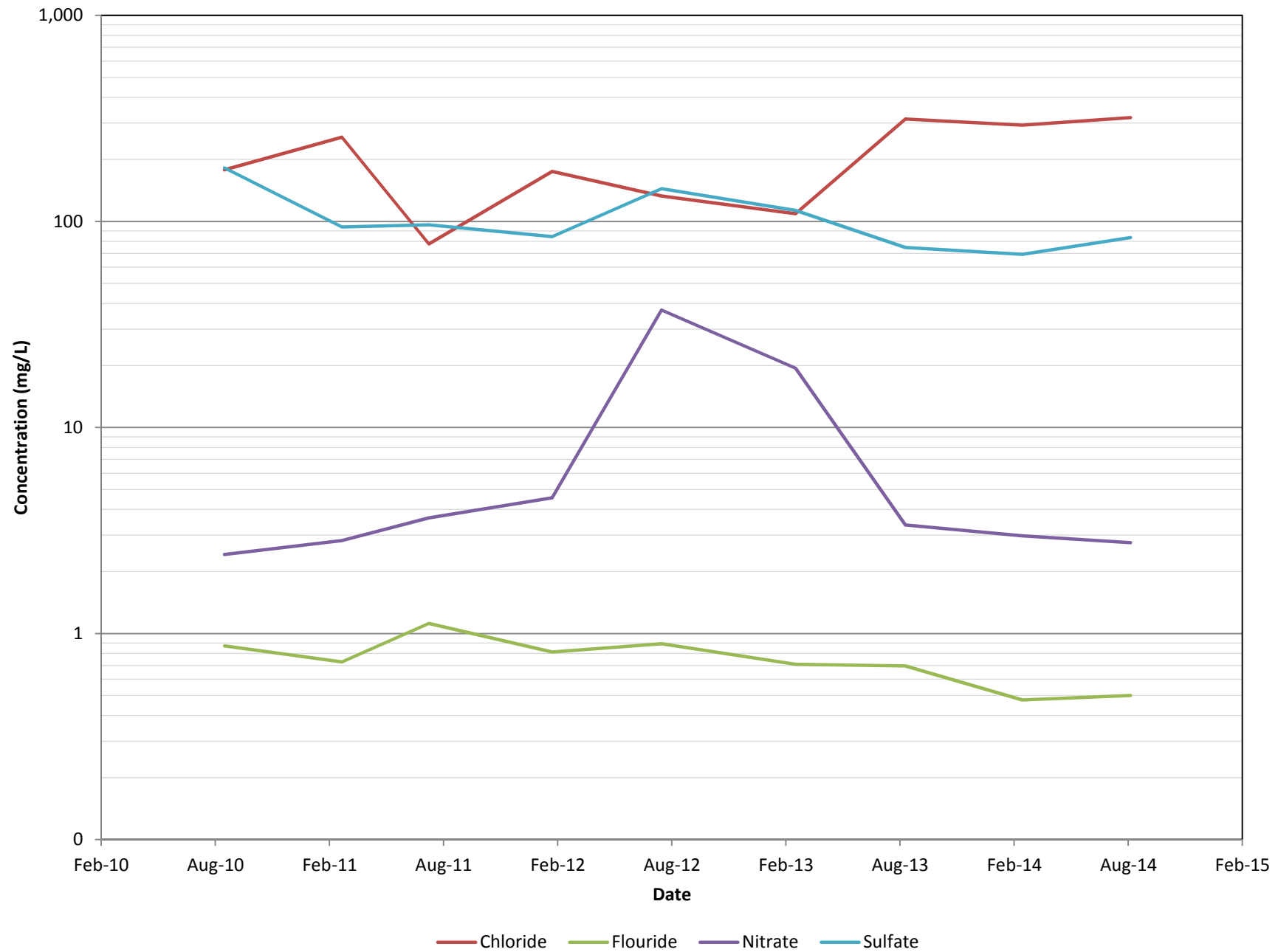
## MW-24: TDS CONCENTRATIONS OVER TIME



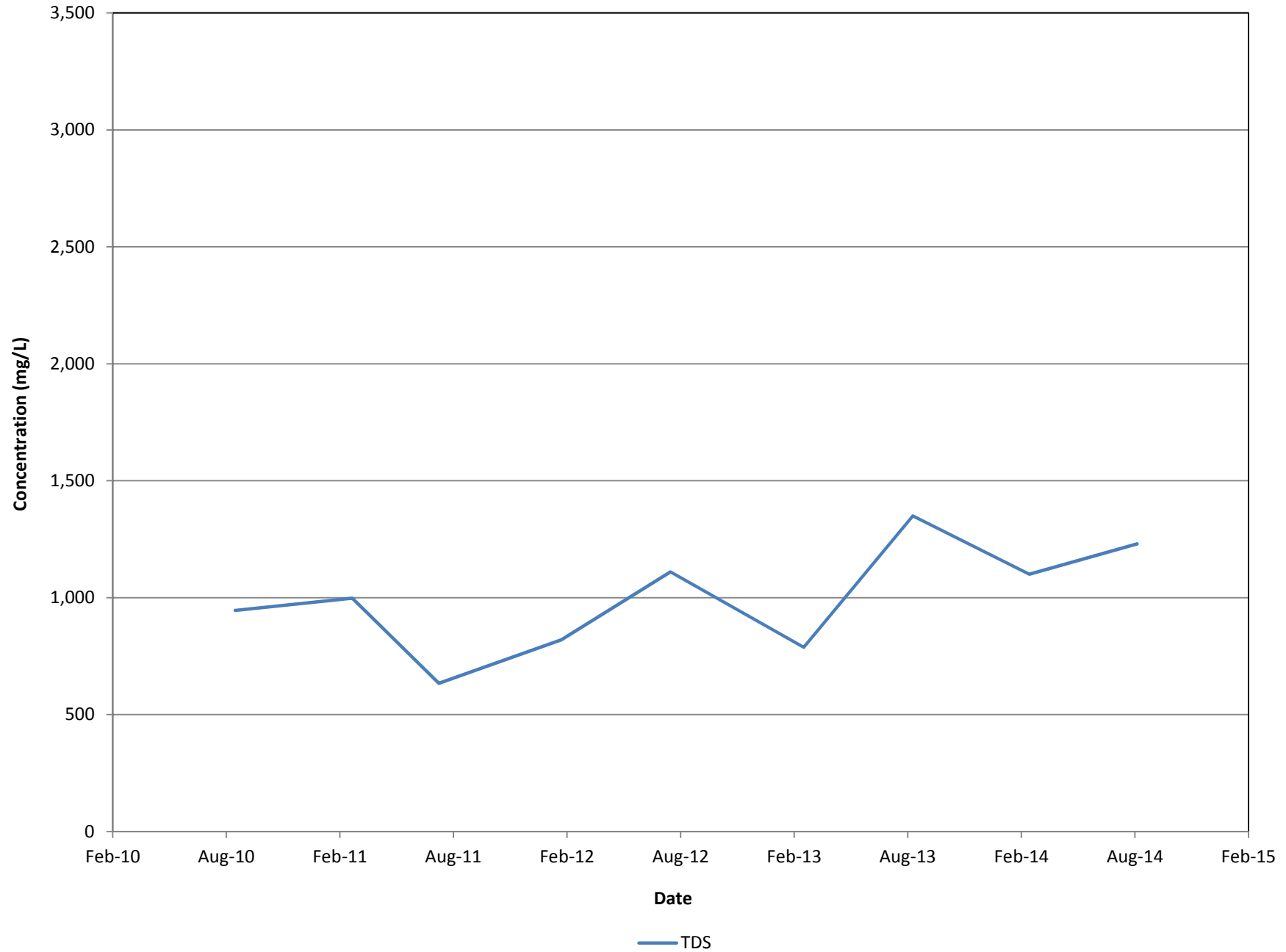
## MW-24: METAL CONCENTRATIONS OVER TIME



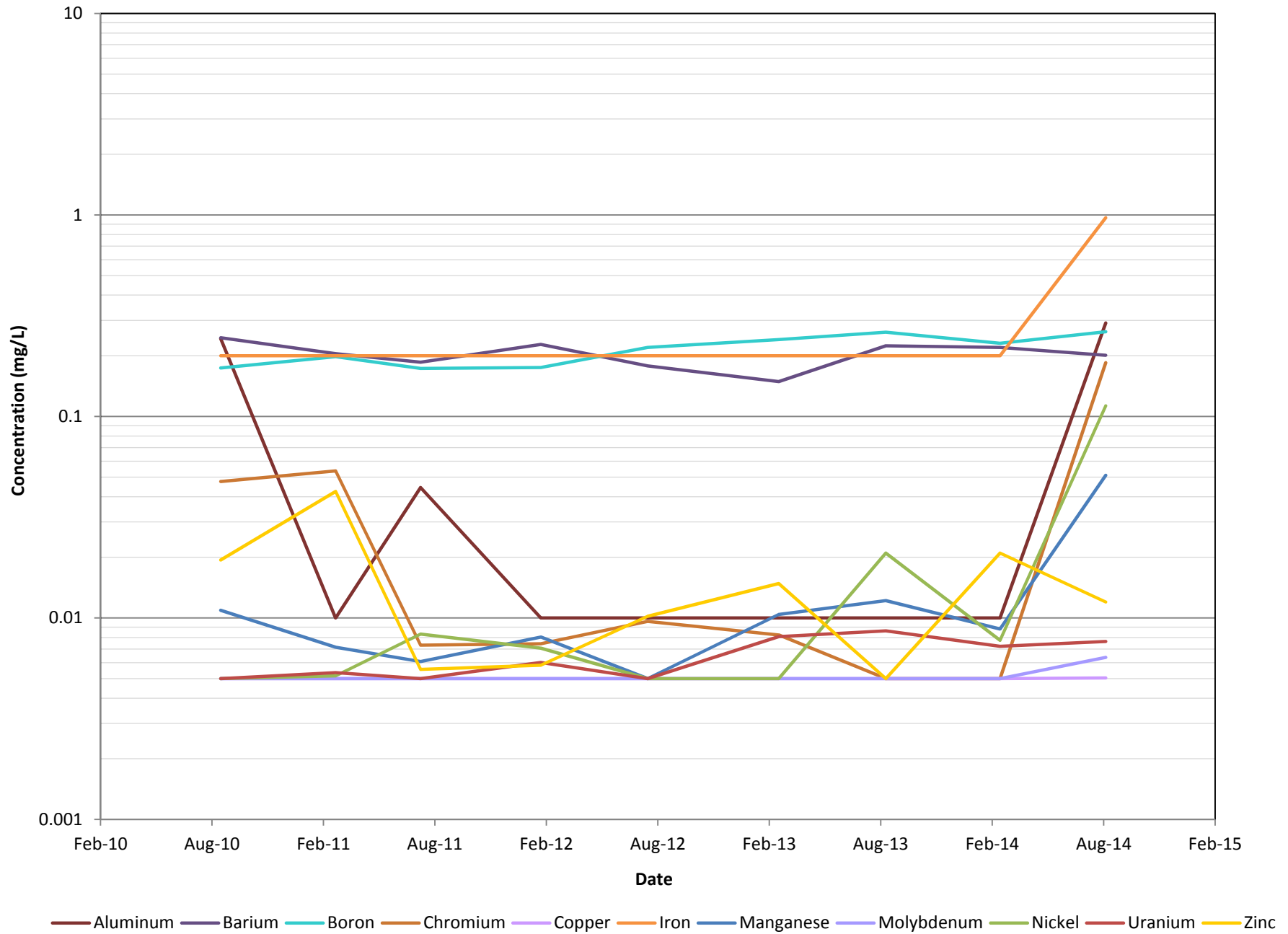
## MW-25: ANION CONCENTRATIONS OVER TIME



## MW-25: TDS CONCENTRATIONS OVER TIME

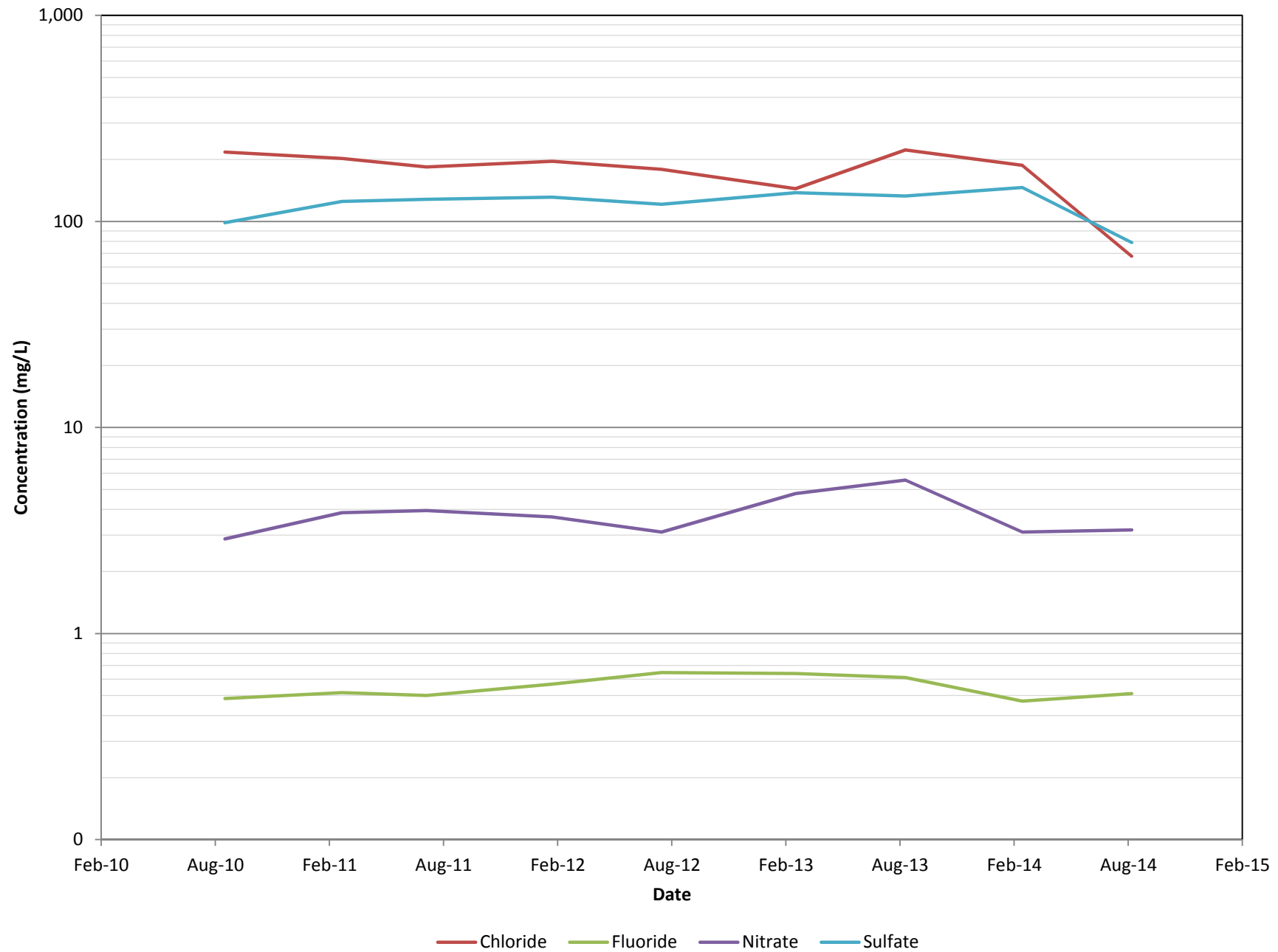


## MW-25: METAL CONCENTRATIONS OVER TIME

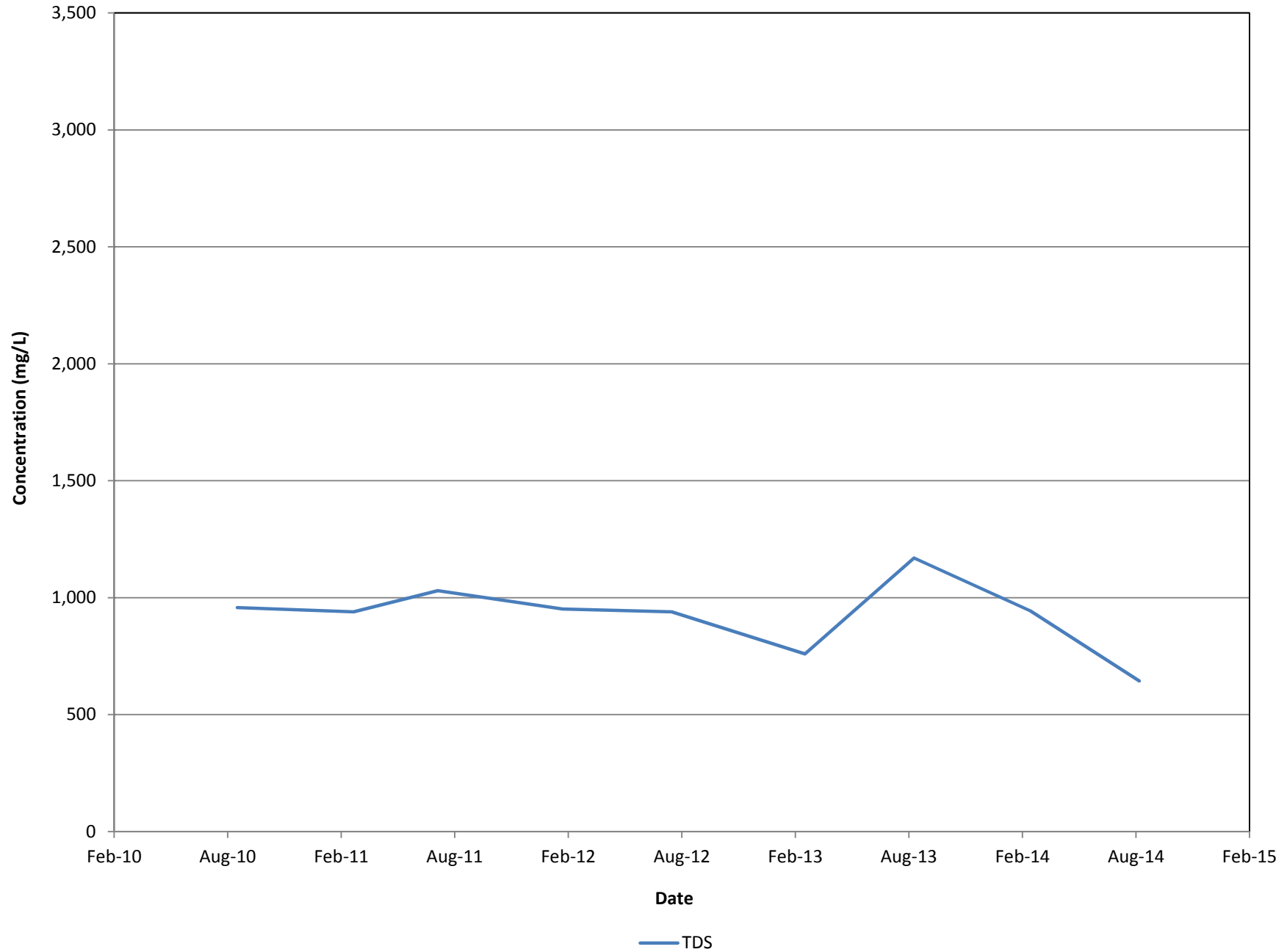




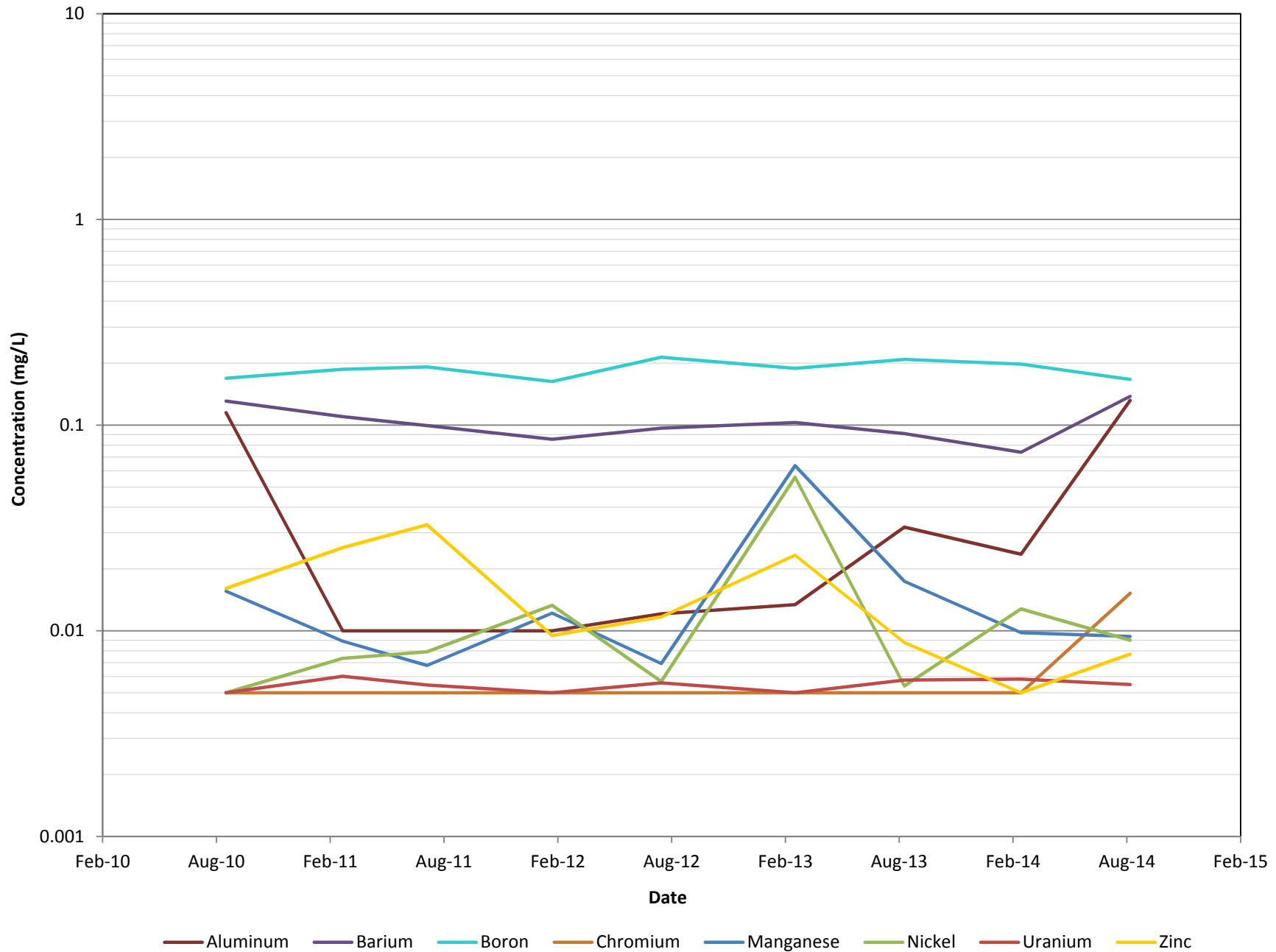
## MW-26: ANION CONCENTRATIONS OVER TIME



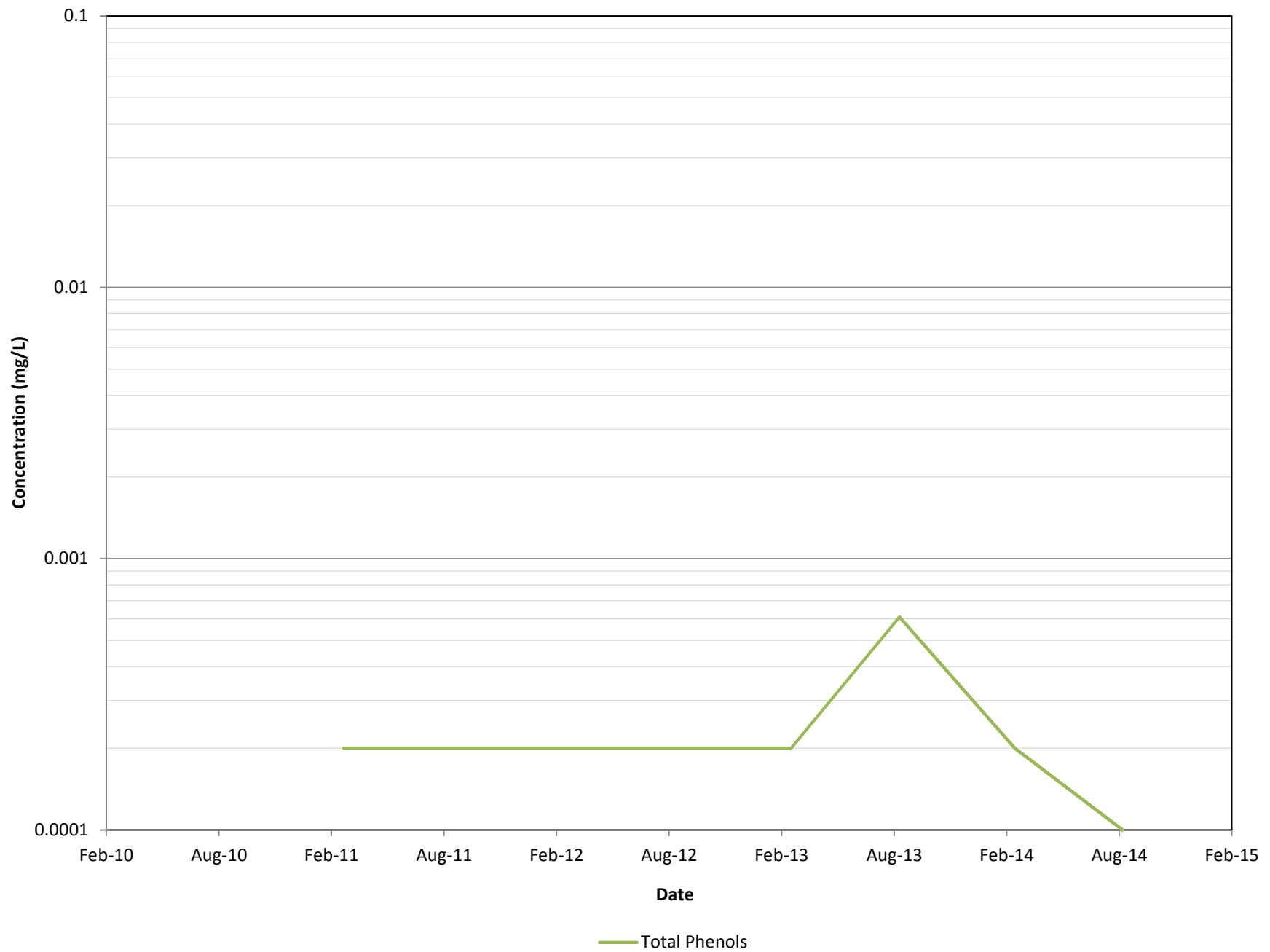
## MW-26: TDS CONCENTRATIONS OVER TIME



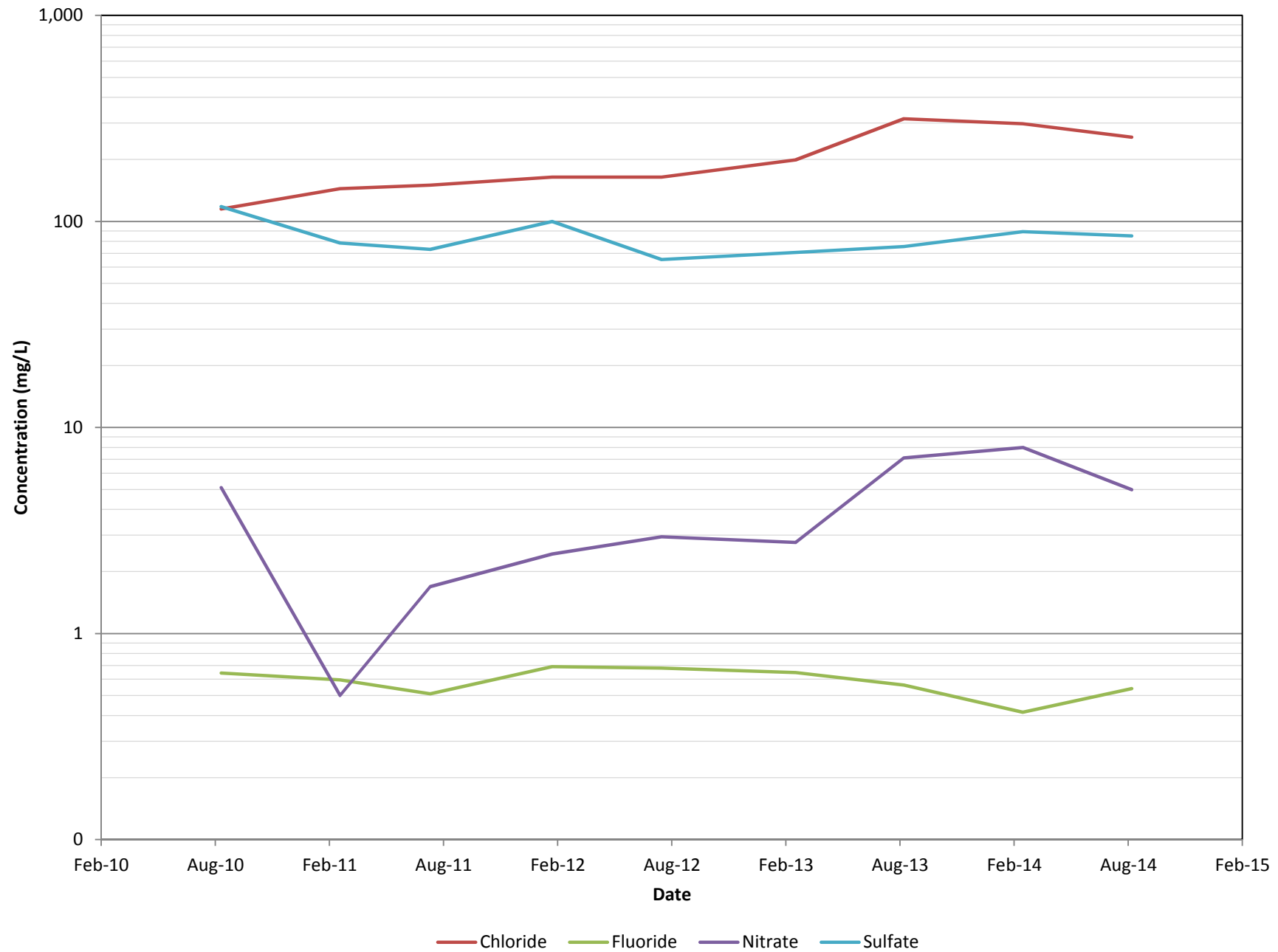
## MW-26: METAL CONCENTRATIONS OVER TIME



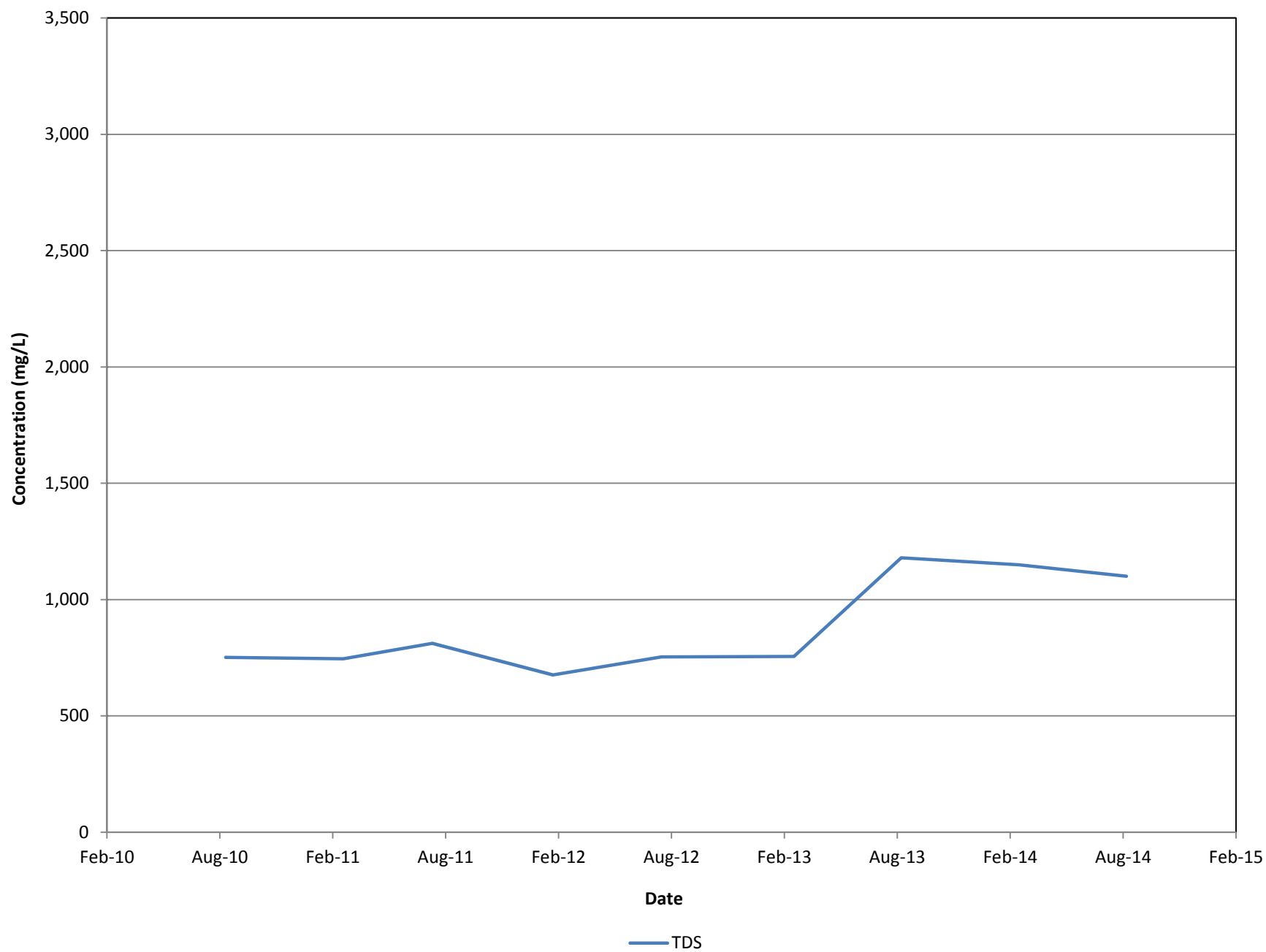
## MW-26: SVOC CONCENTRATIONS OVER TIME



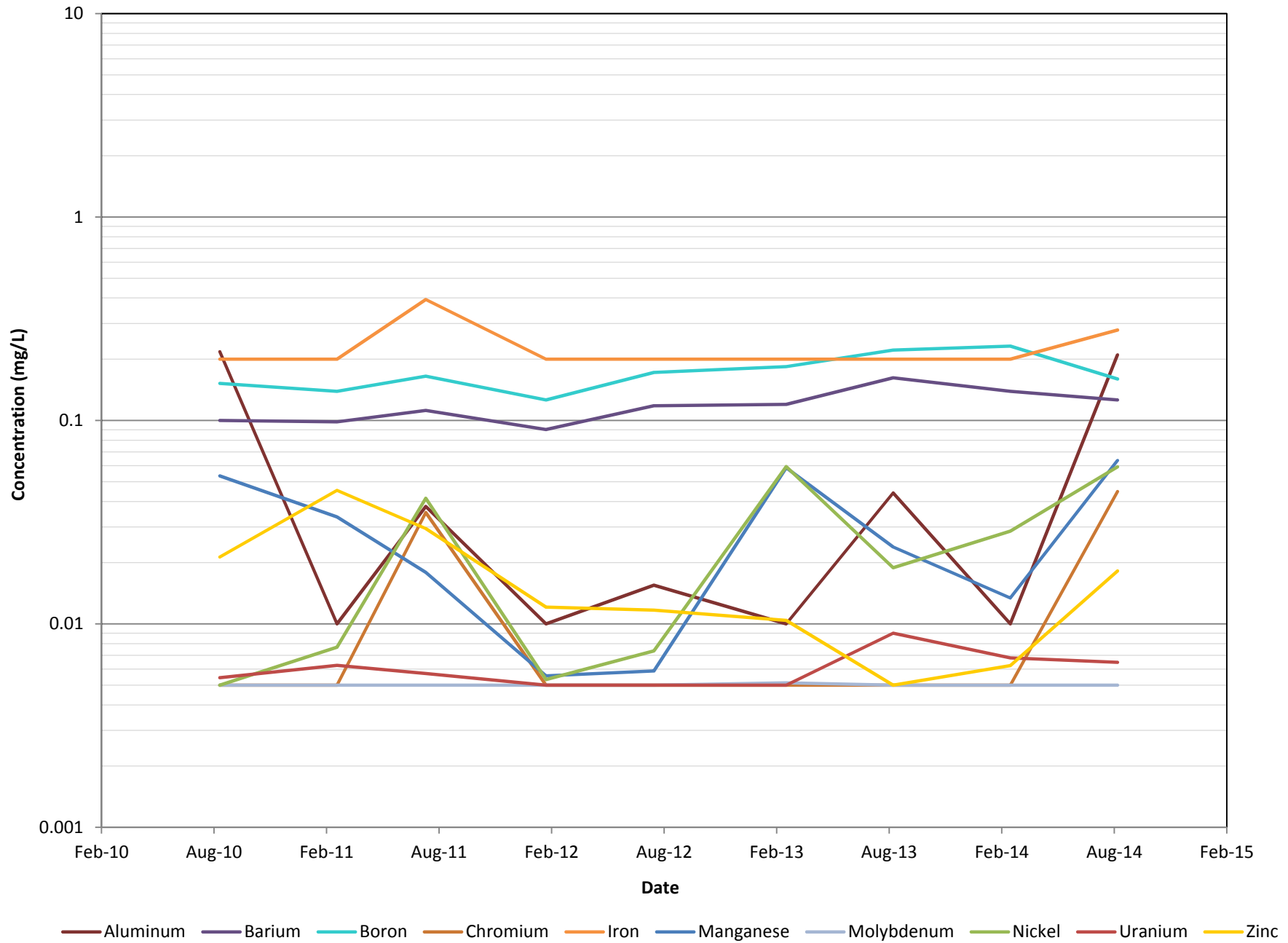
## MW-27: ANION CONCENTRATIONS OVER TIME



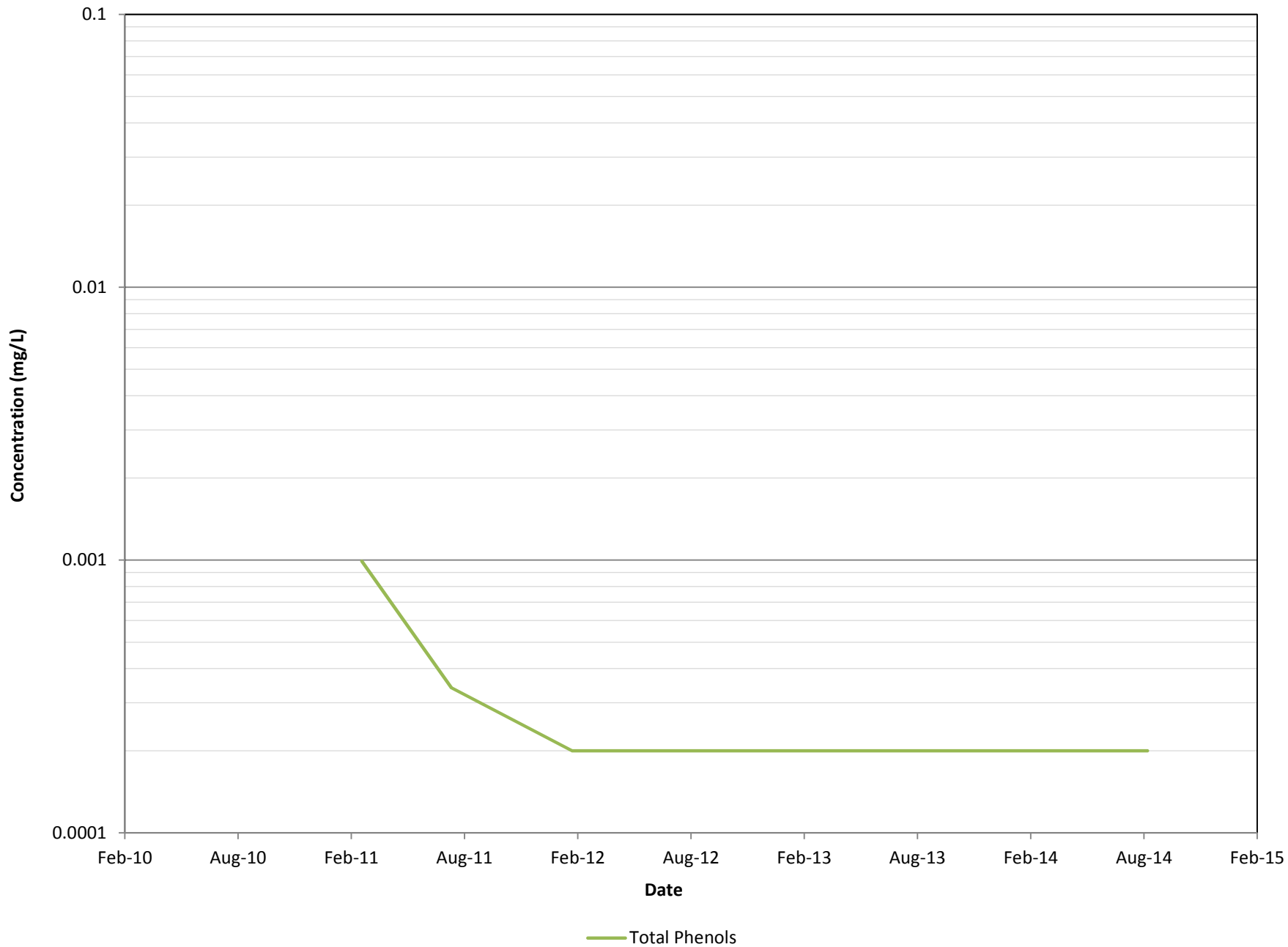
## MW-27: TDS CONCENTRATIONS OVER TIME



## MW-27: METAL CONCENTRATIONS OVER TIME

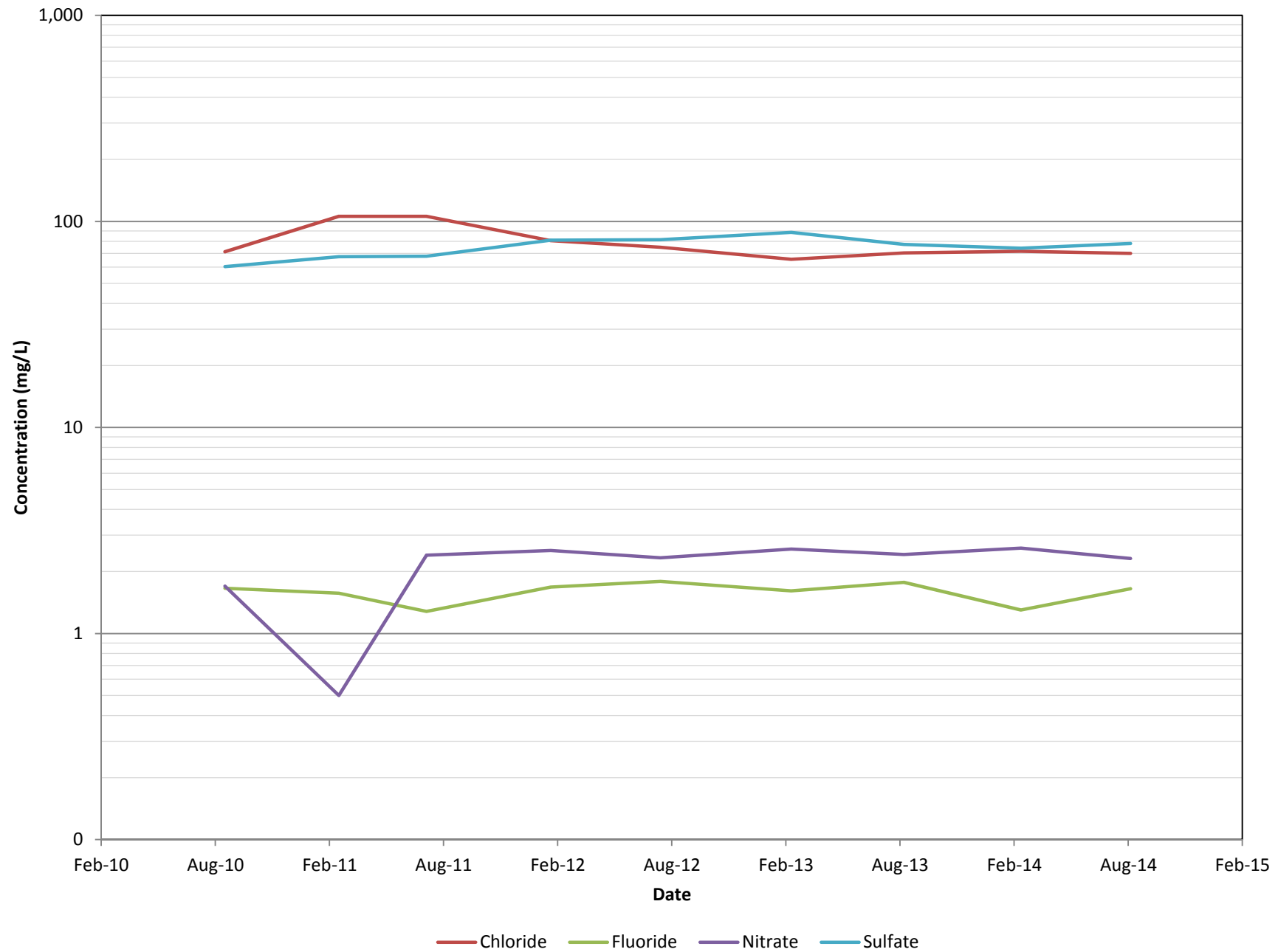


## MW-27: SVOC CONCENTRATIONS OVER TIME

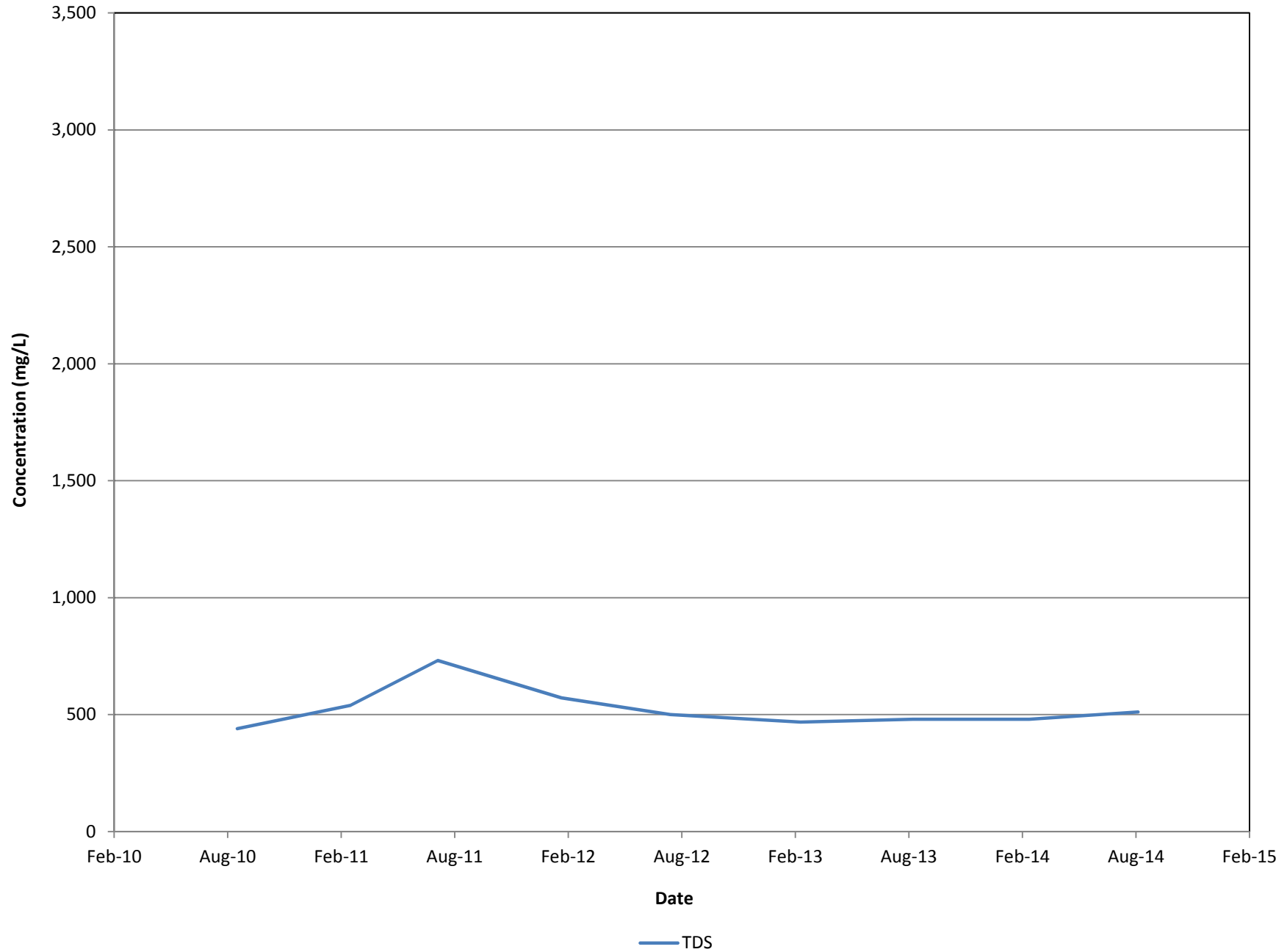




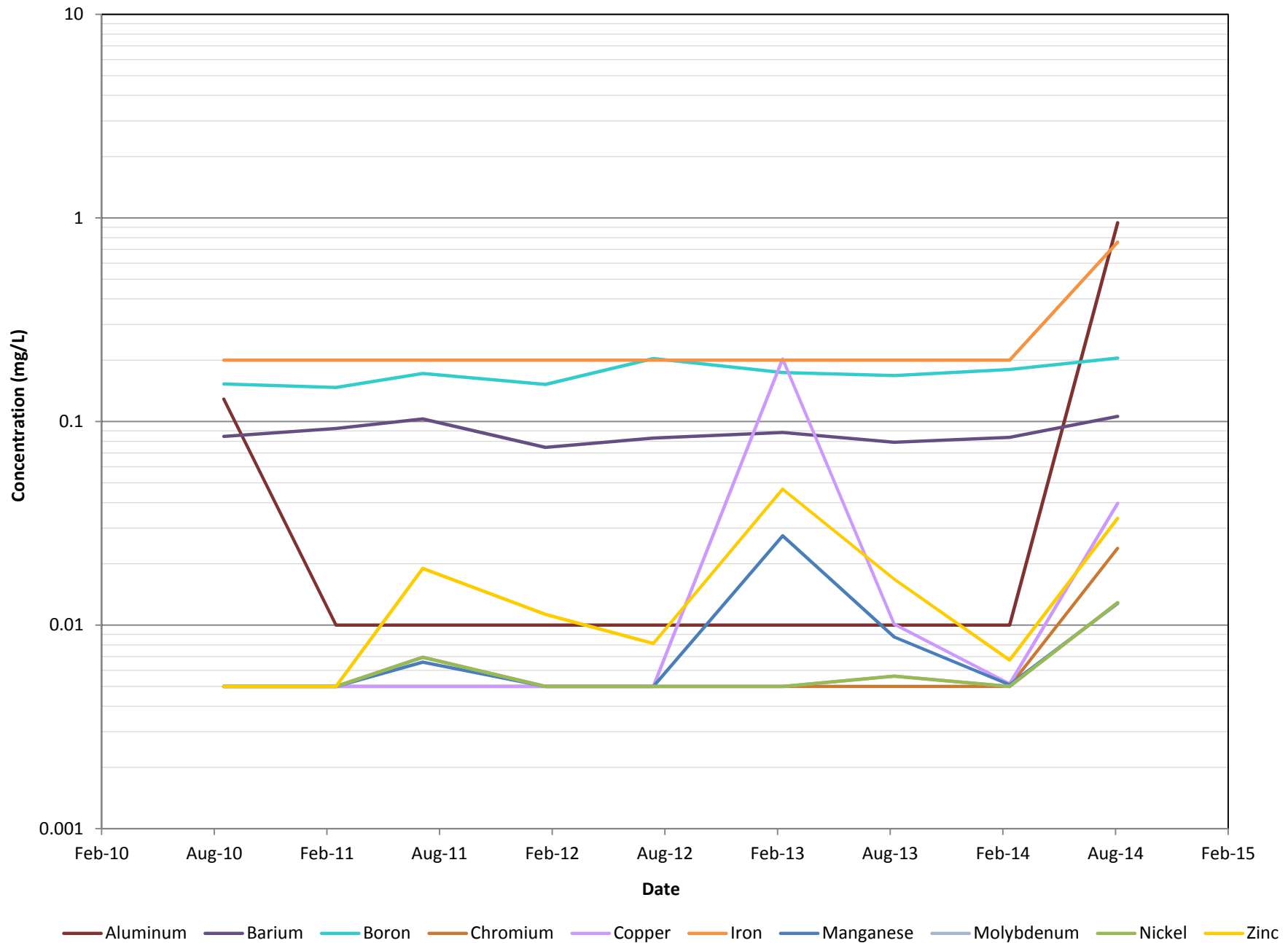
## MW-28: ANION CONCENTRATIONS OVER TIME



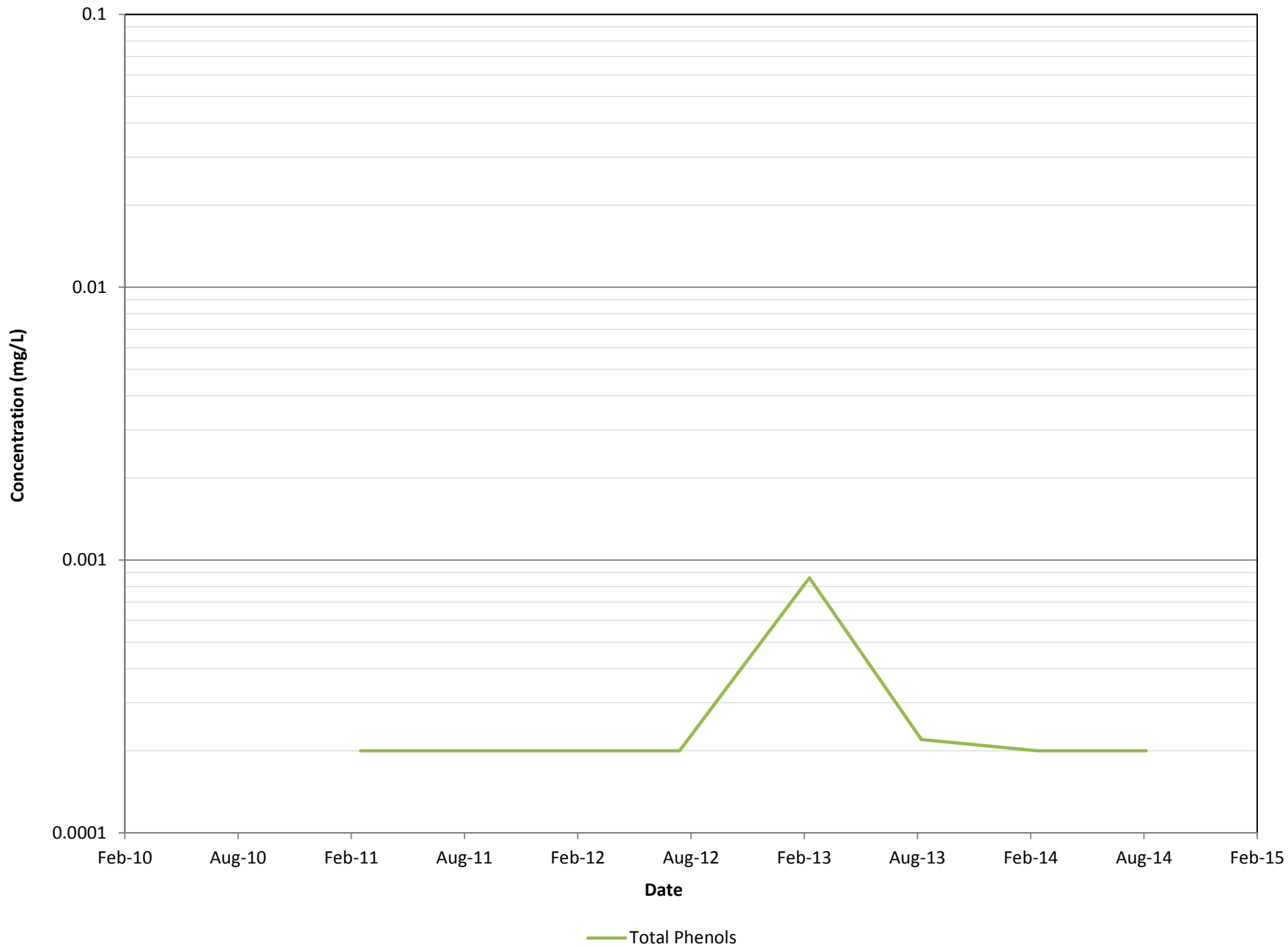
## MW-28: TDS CONCENTRATIONS OVER TIME



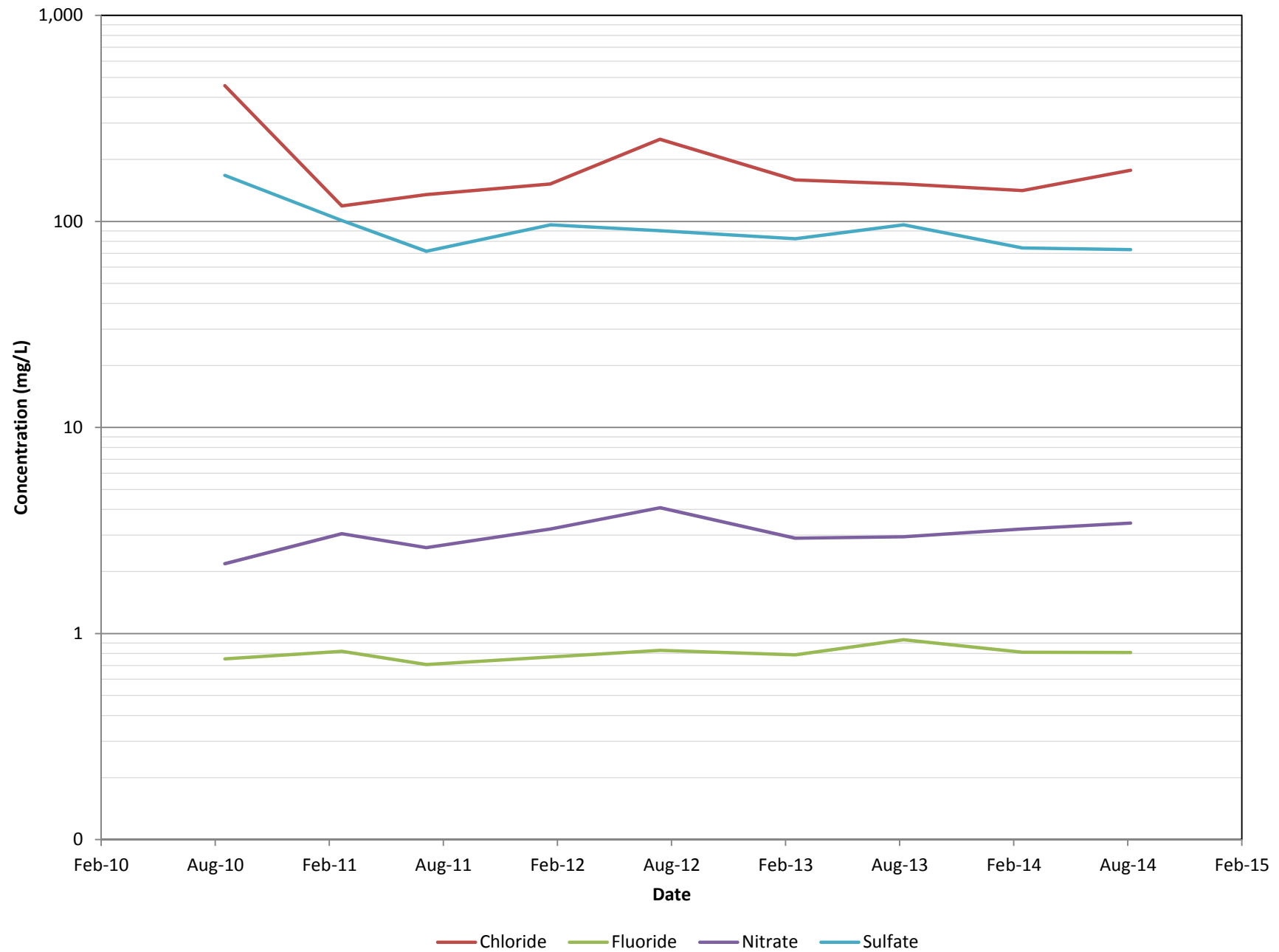
## MW-28: METAL CONCENTRATIONS OVER TIME



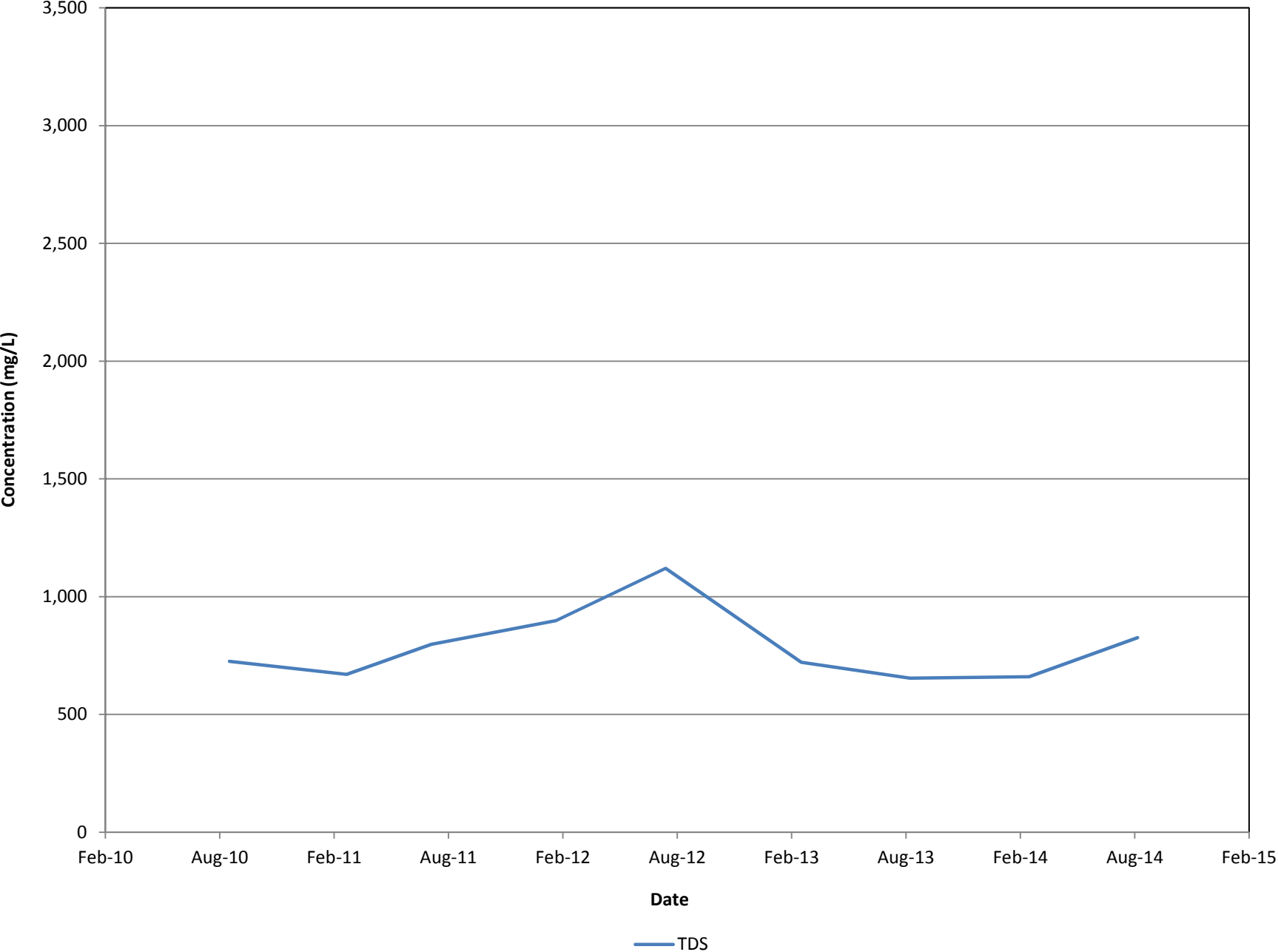
## MW-28: SVOC CONCENTRATIONS OVER TIME



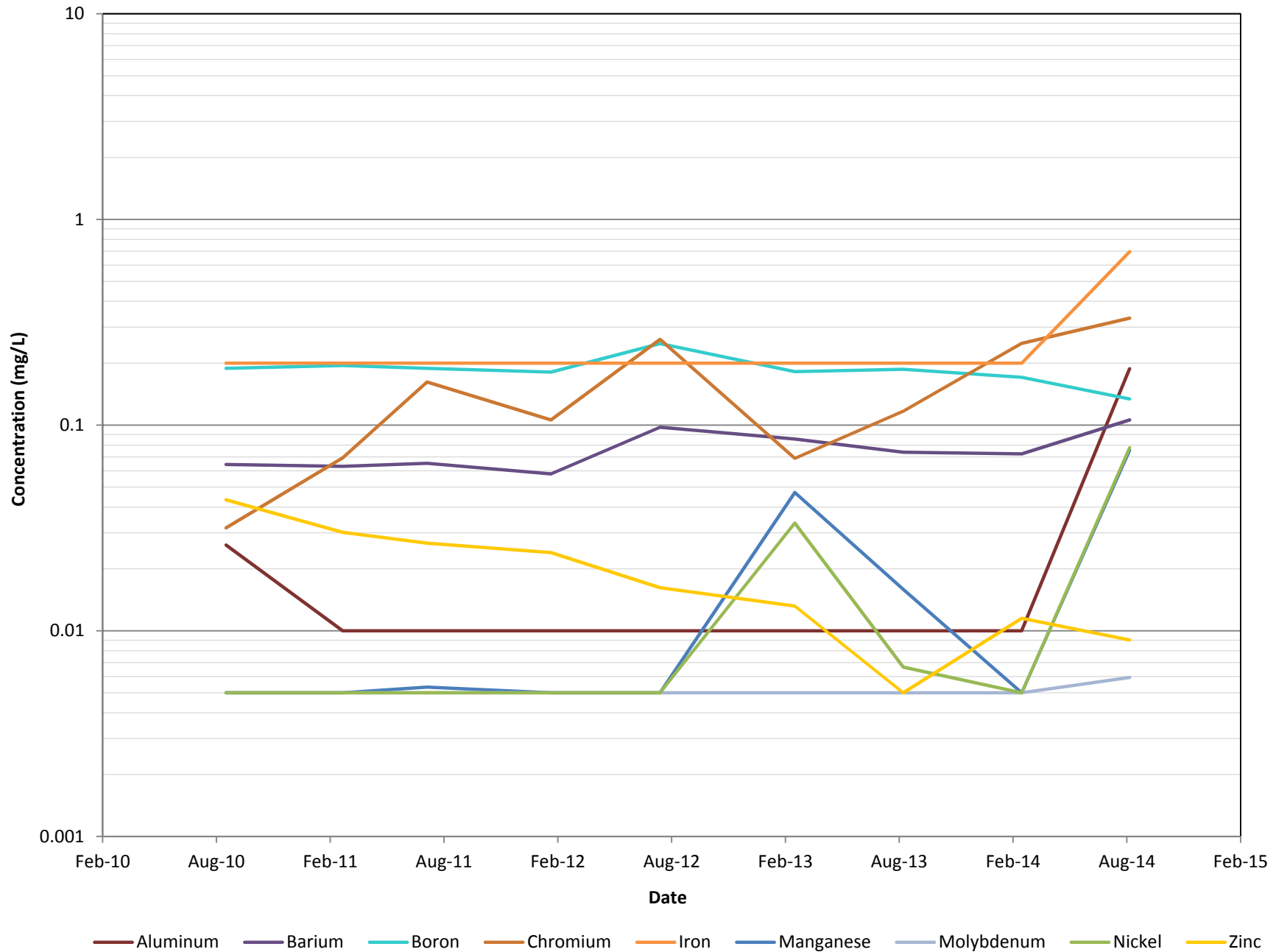
## MW-29: ANION CONCENTRATIONS OVER TIME



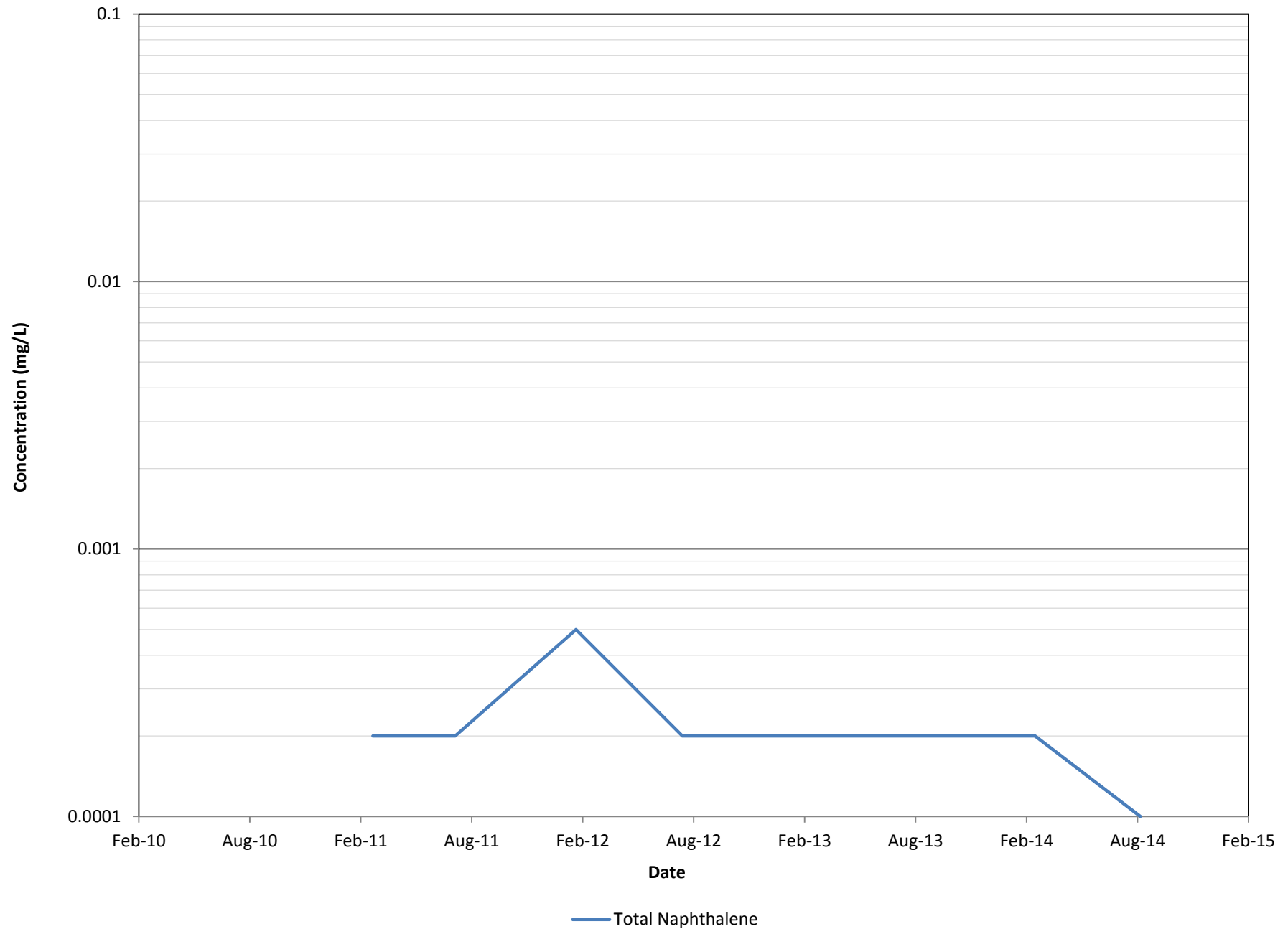
MW-29: TDS CONCENTRATIONS OVER TIME



## MW-29: METAL CONCENTRATIONS OVER TIME

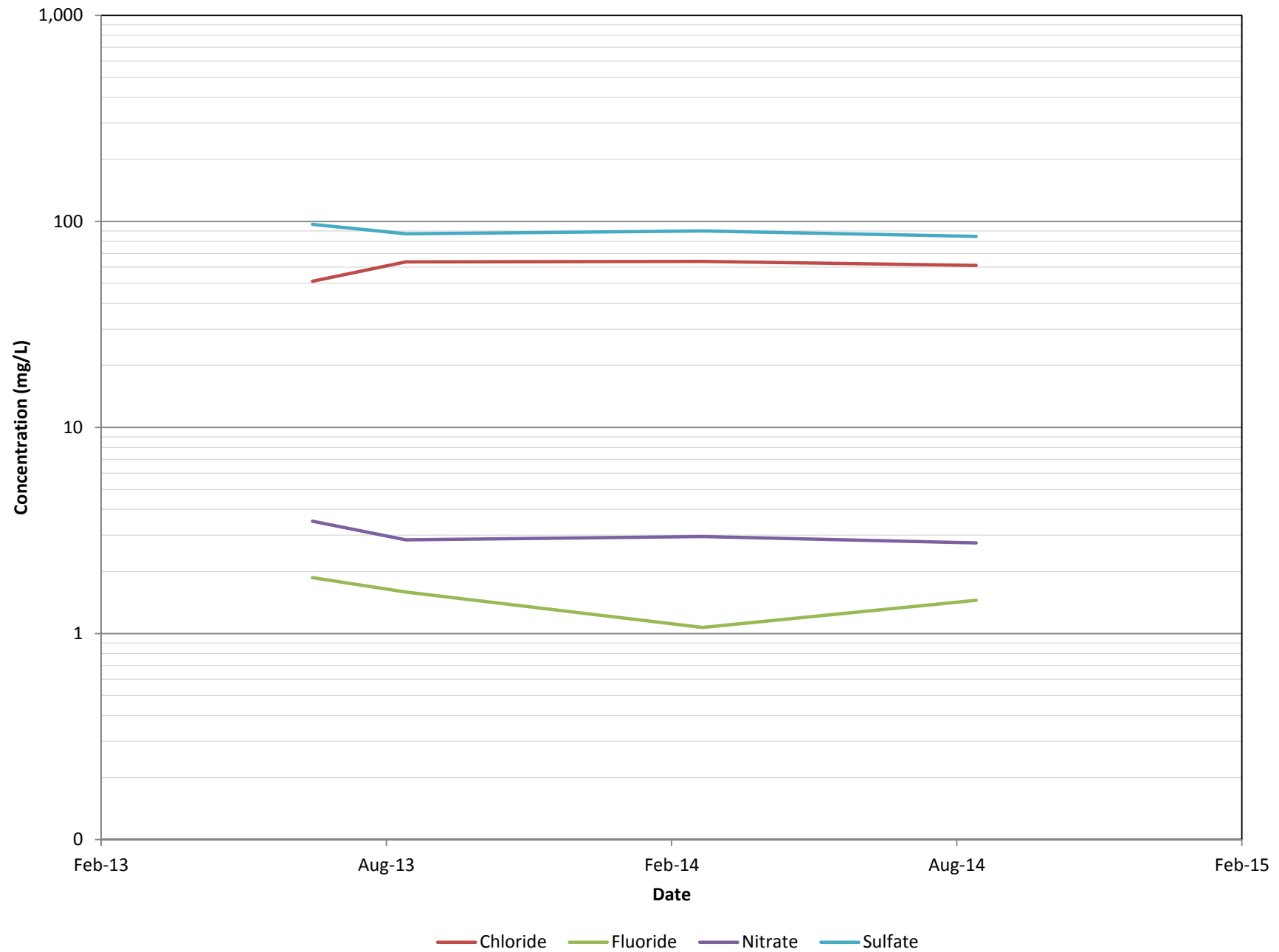


## MW-29: SVOC CONCENTRATIONS OVER TIME

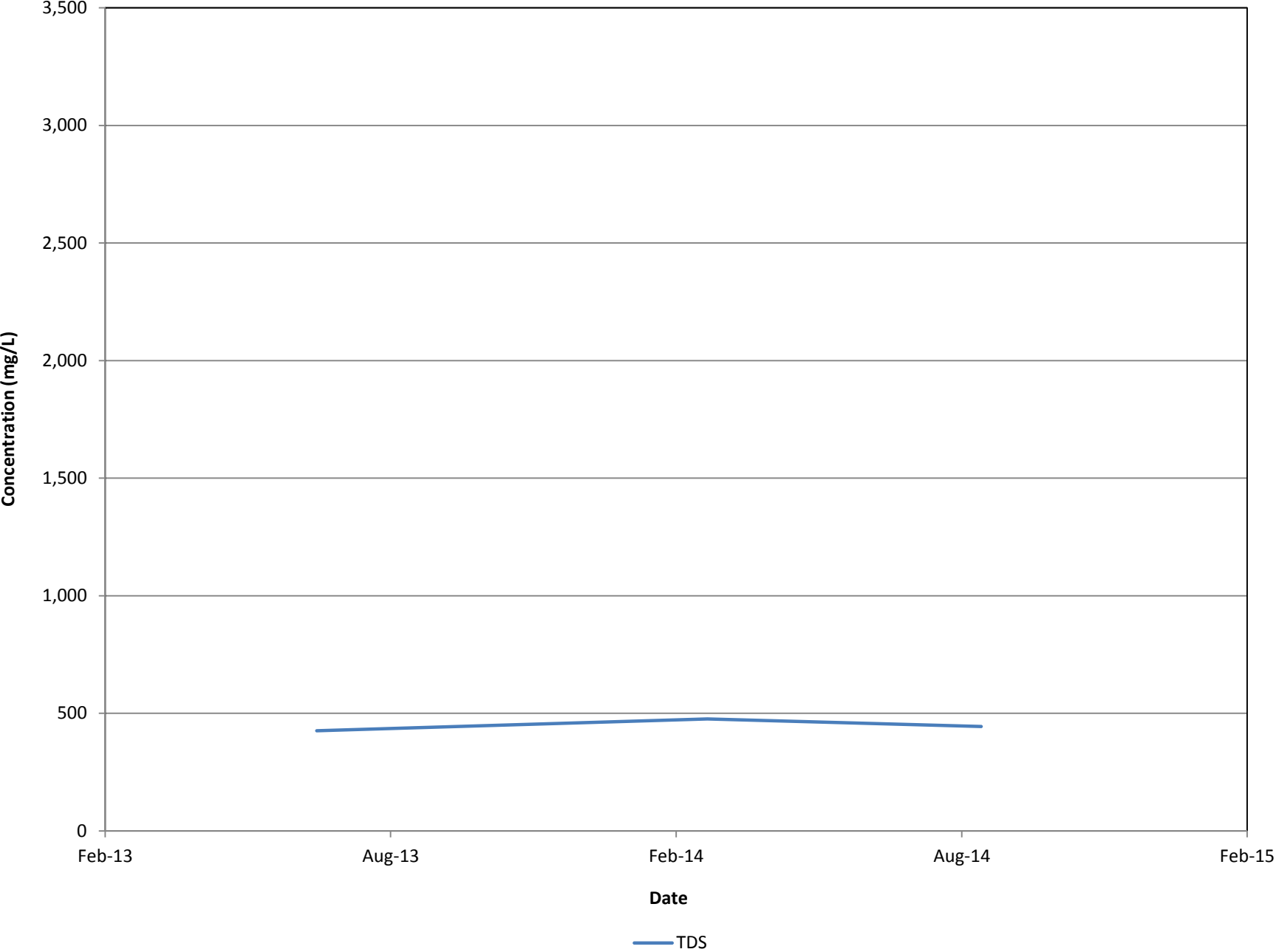




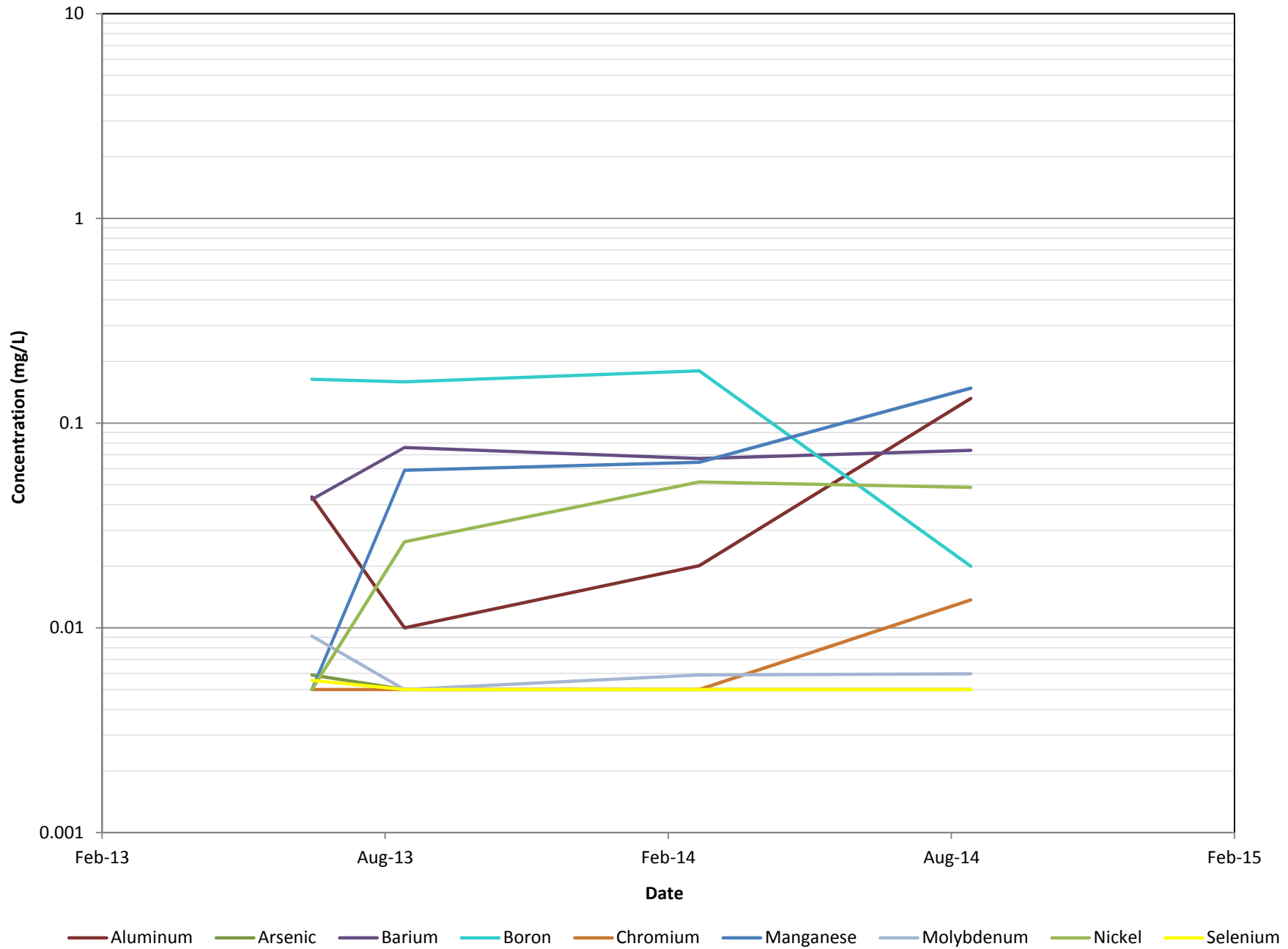
## MW-30: ANION CONCENTRATIONS OVER TIME



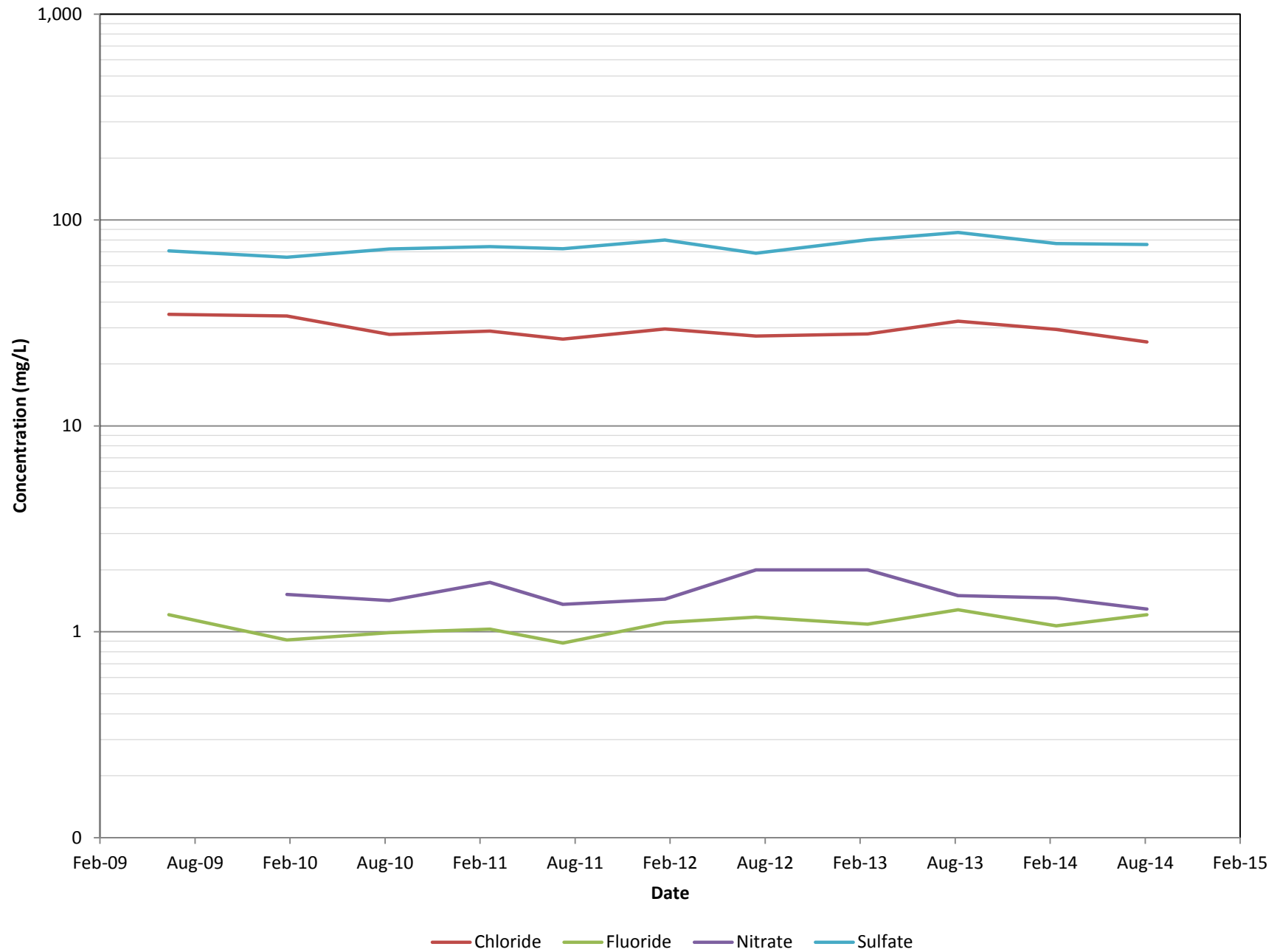
MW-30: TDS CONCENTRATIONS OVER TIME



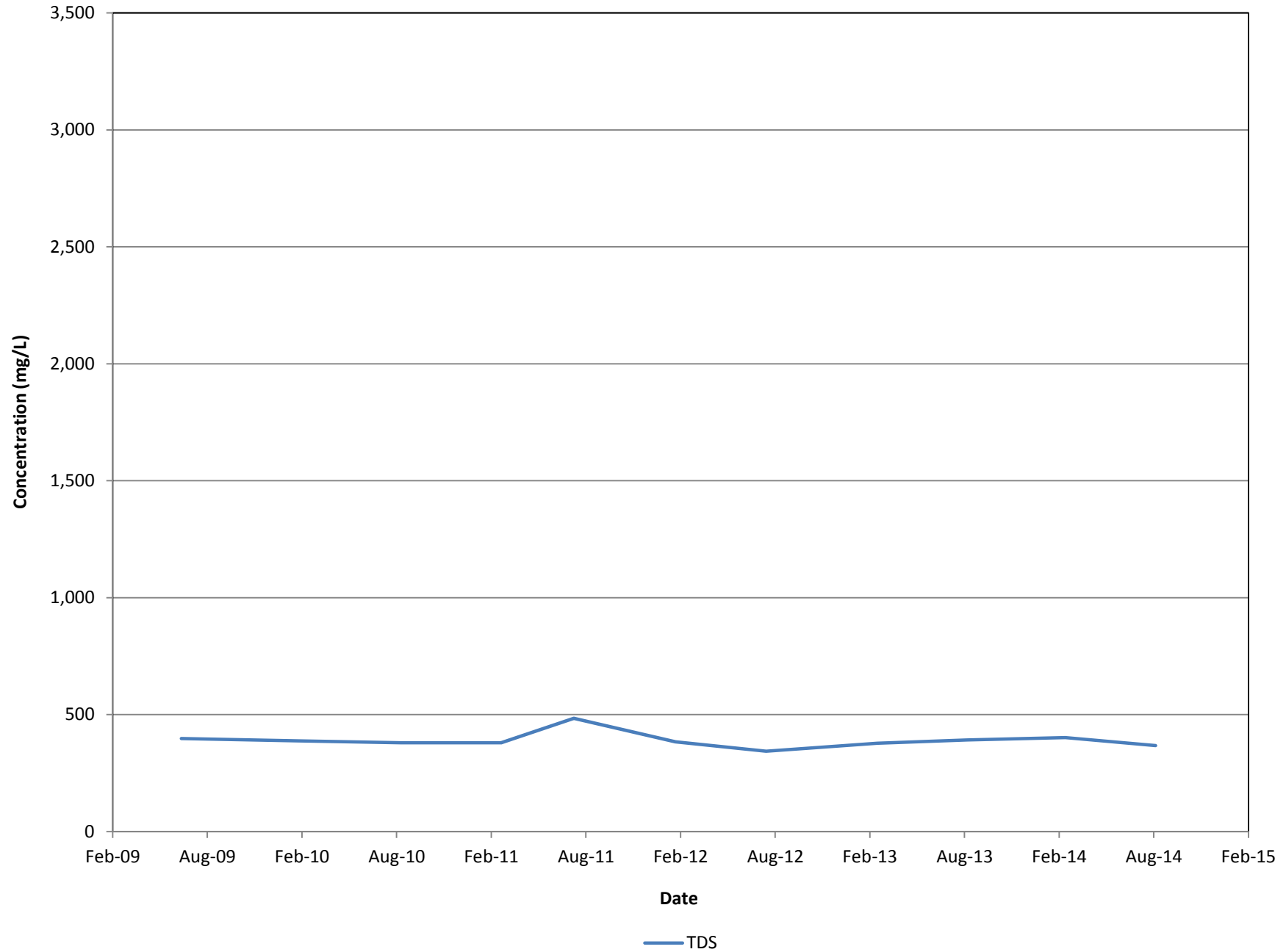
## MW-30: METAL CONCENTRATIONS OVER TIME



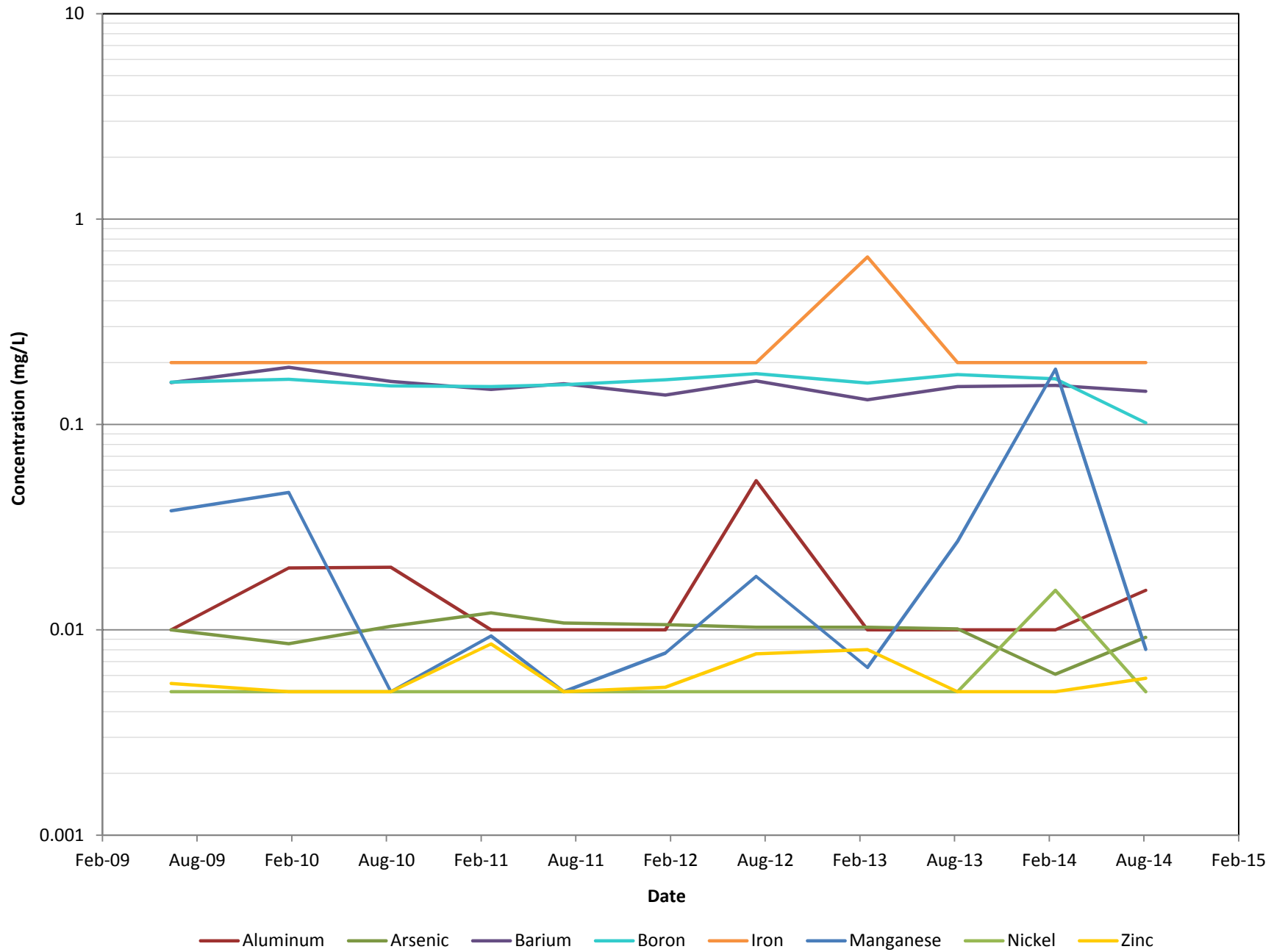
## RW-1: ANION CONCENTRATIONS OVER TIME



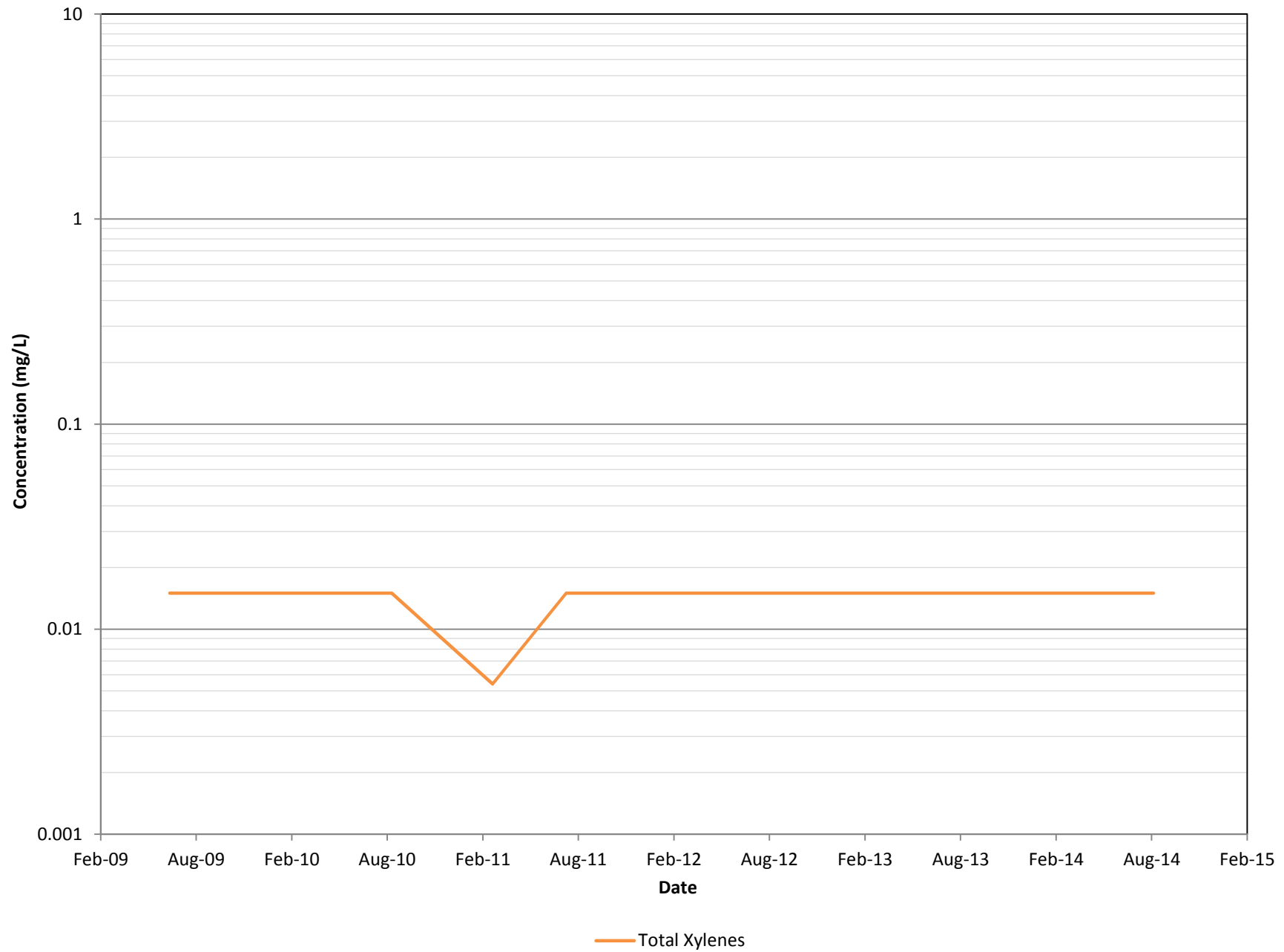
## RW-1: TDS CONCENTRATIONS OVER TIME



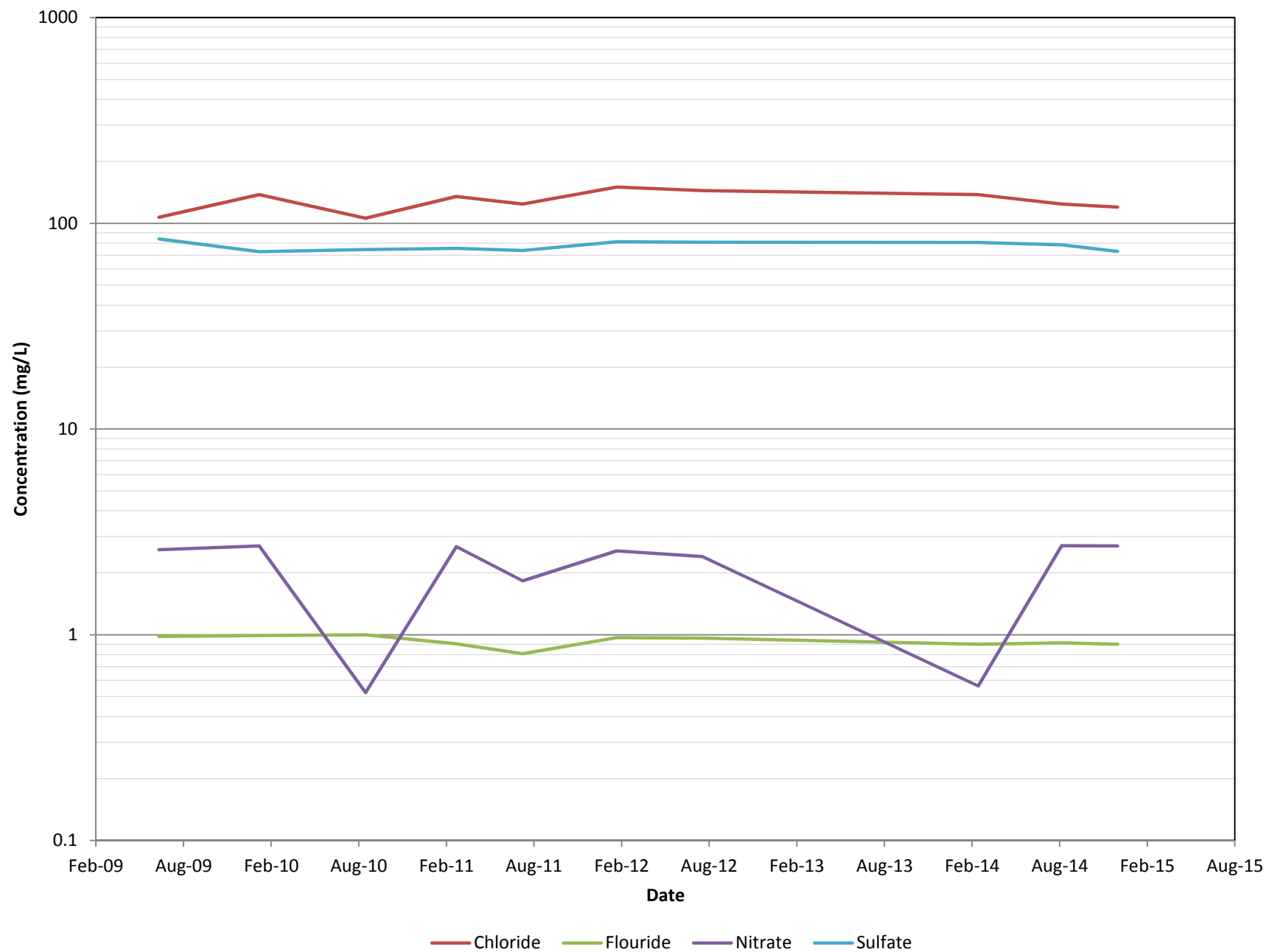
## RW-1: METAL CONCENTRATIONS OVER TIME



## RW-1: VOC CONCENTRATIONS OVER TIME

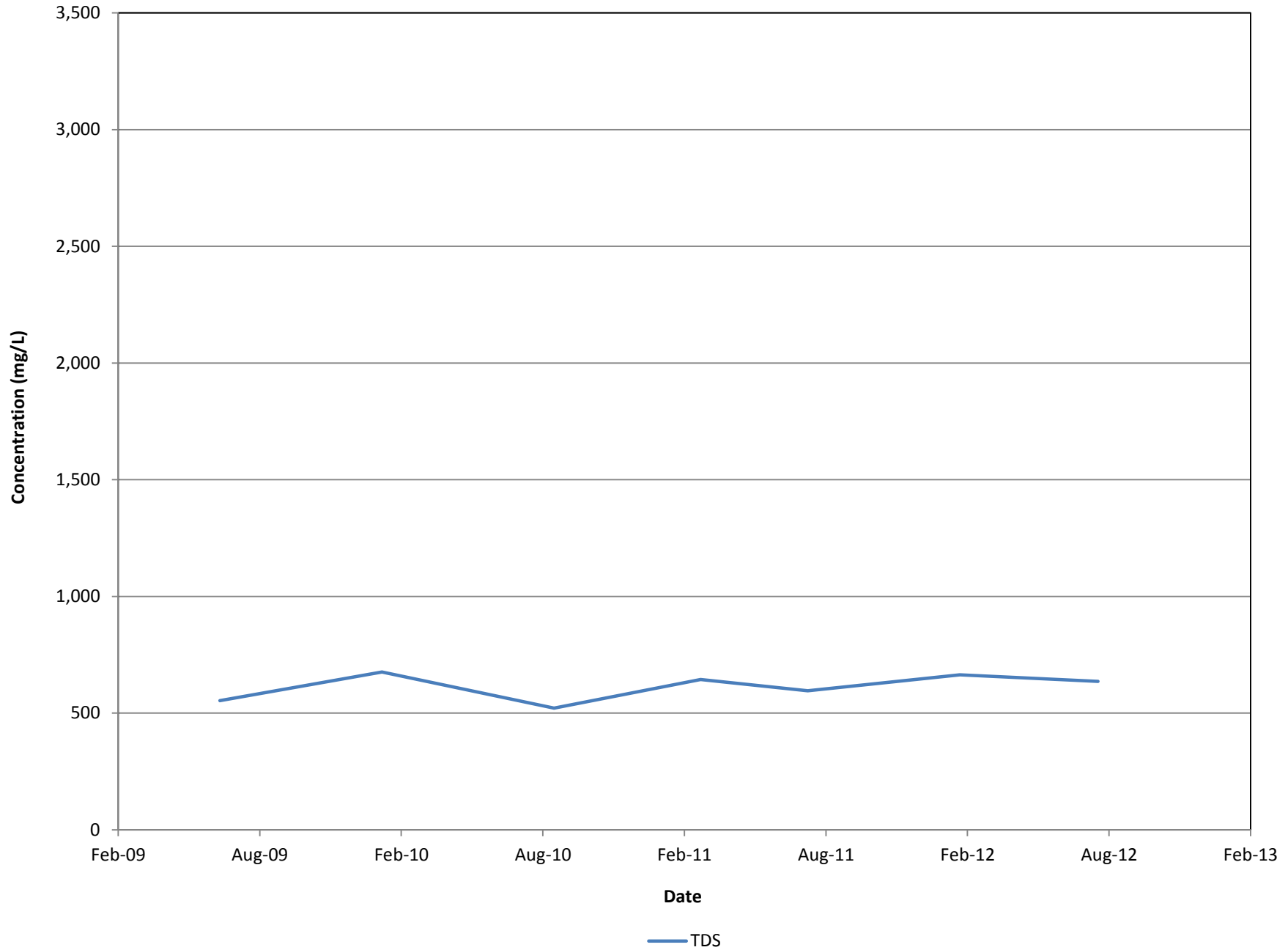


## EAST WELL (WW-EAST): ANION CONCENTRATIONS OVER TIME

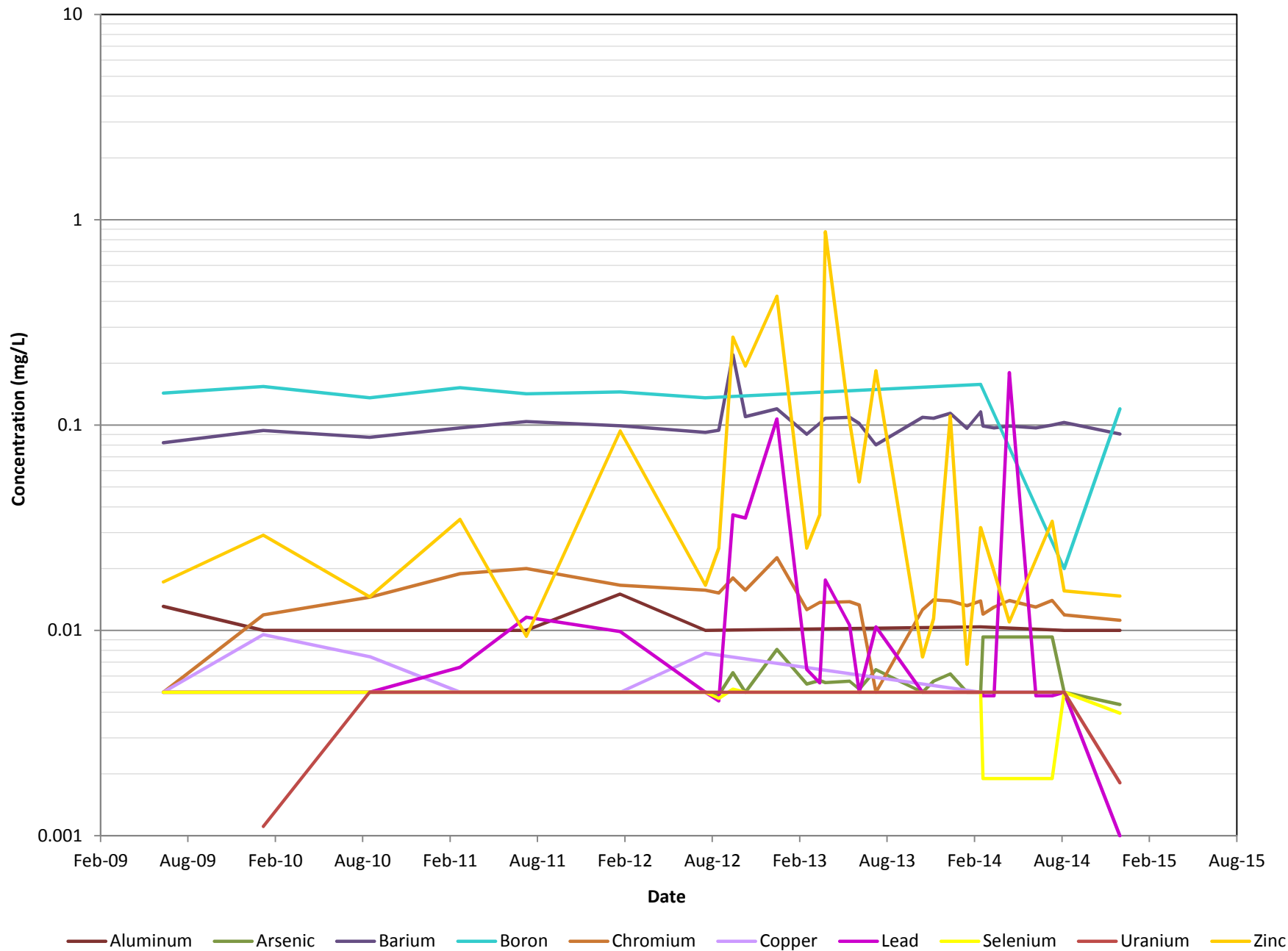




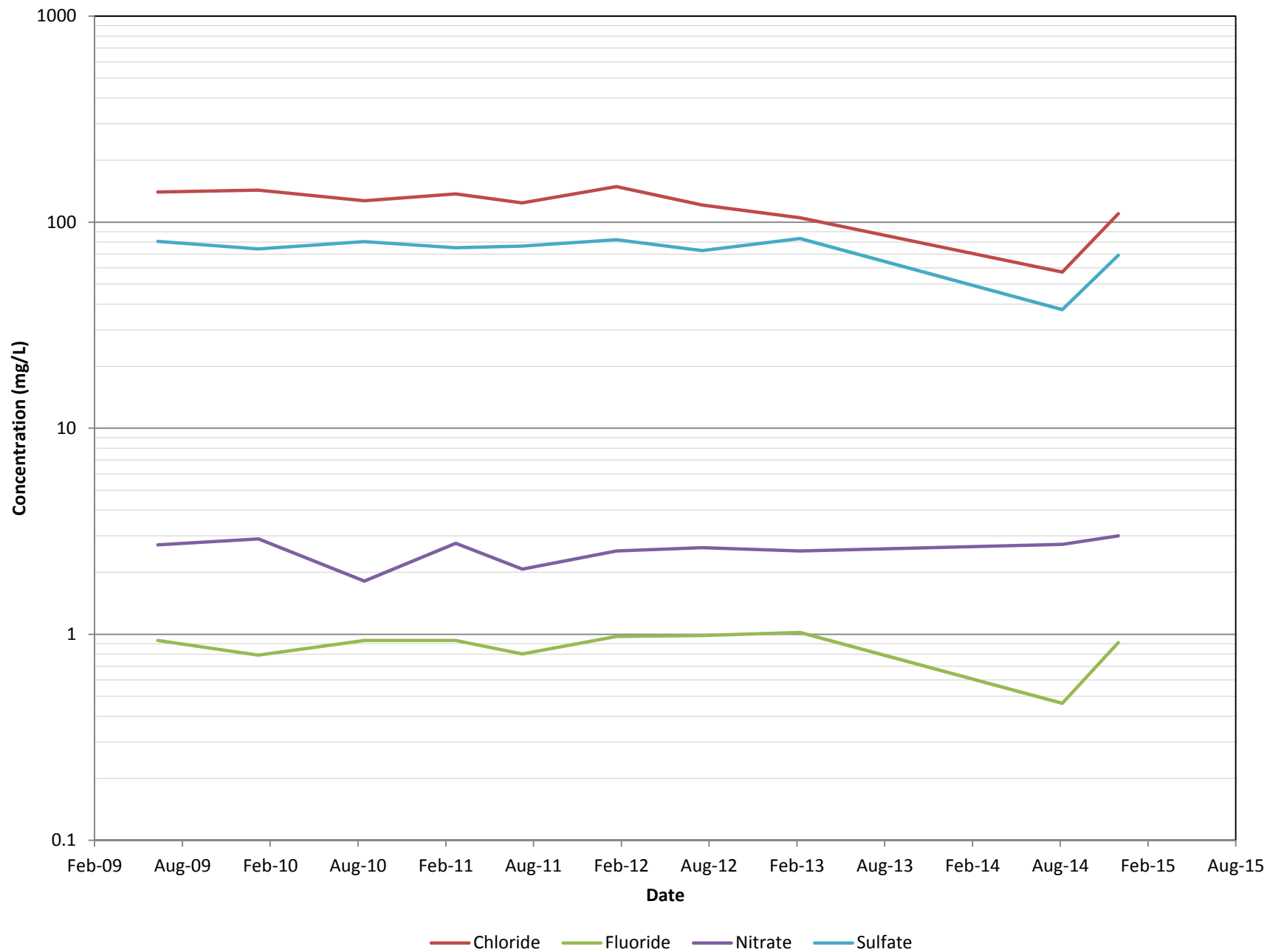
## EAST WELL (WW-EAST): TDS CONCENTRATIONS OVER TIME



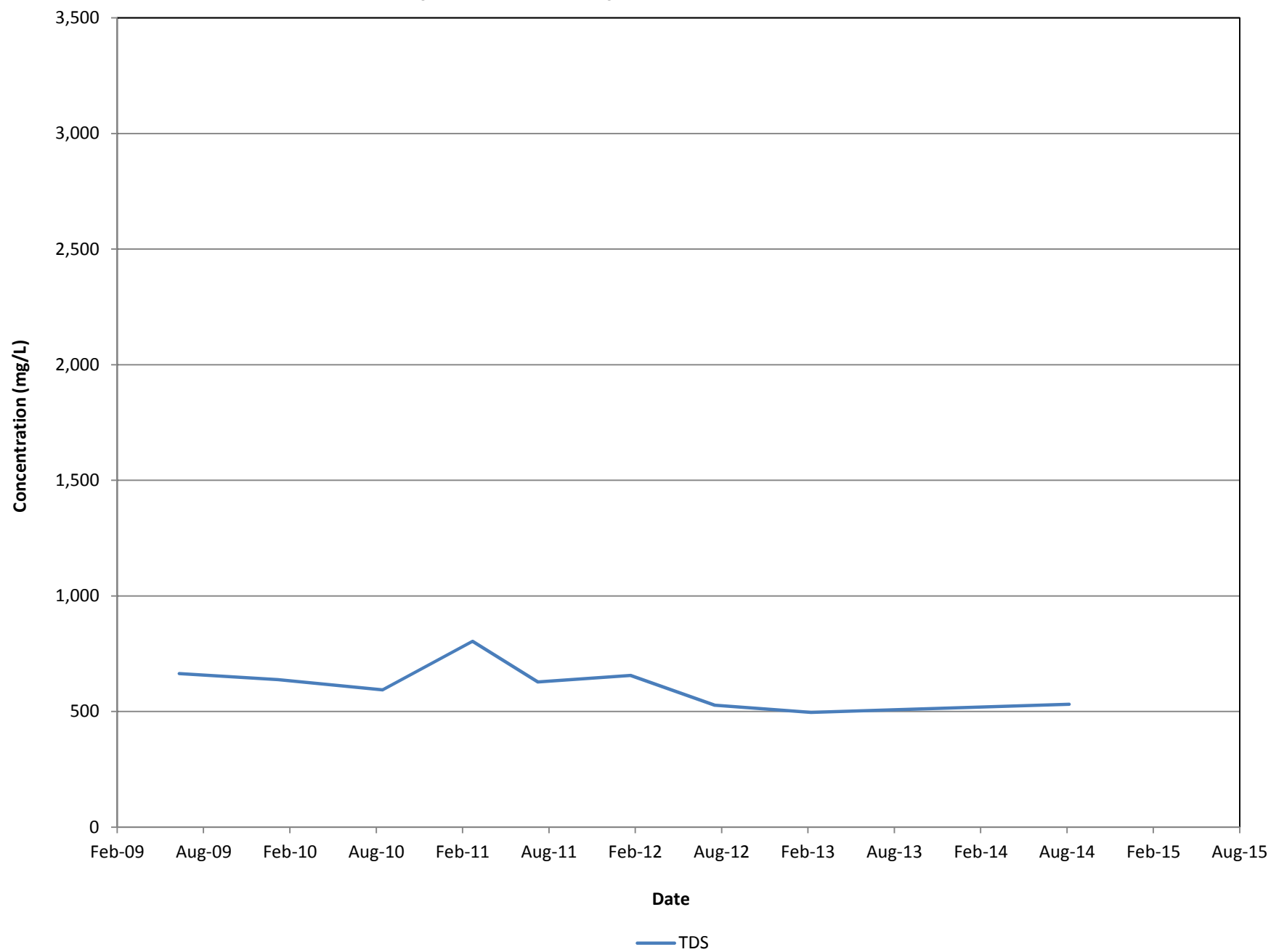
## EAST WELL (WW-EAST): METAL CONCENTRATIONS OVER TIME



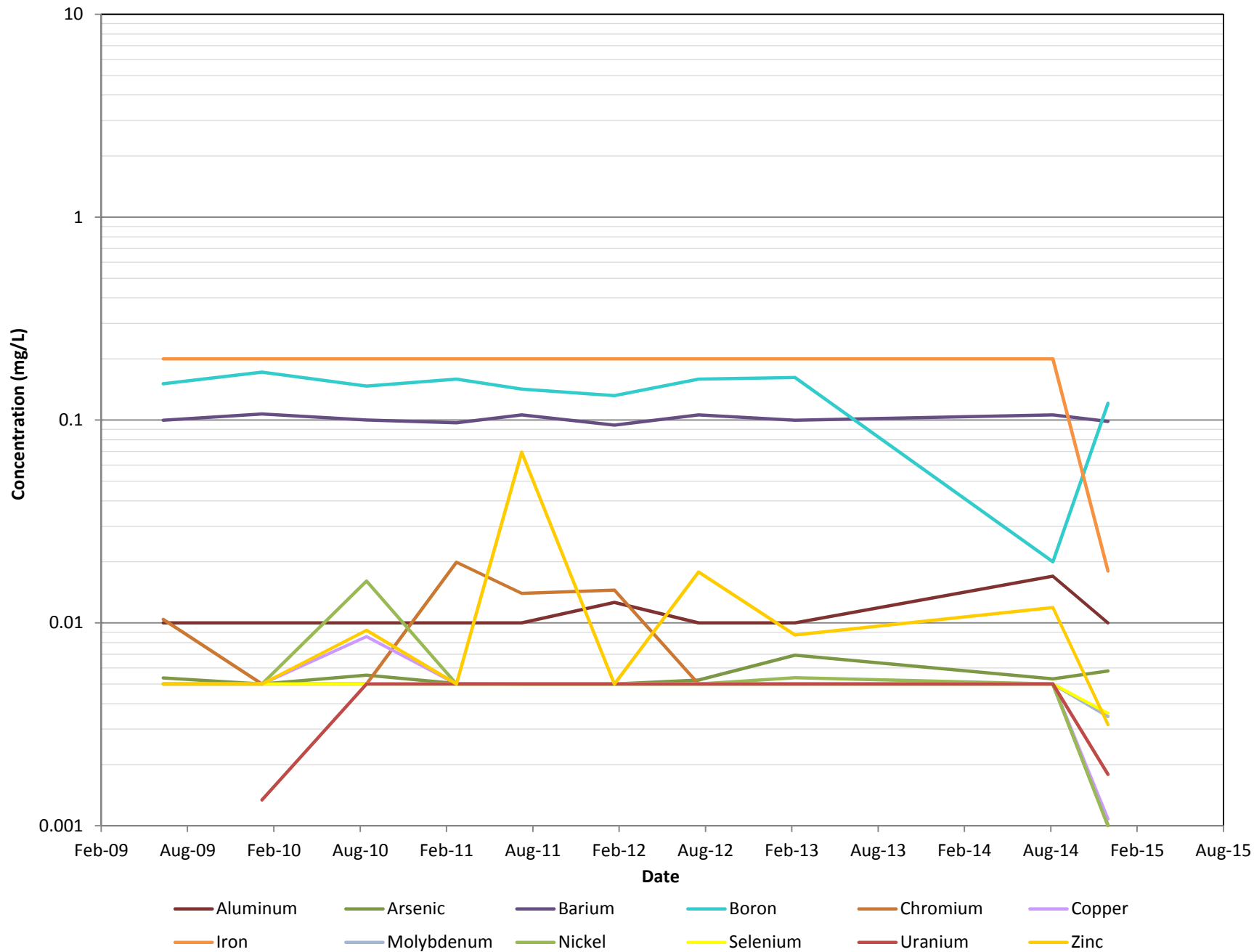
## NORTH WELL (WW-NORTH): ANION CONCENTRATIONS OVER TIME



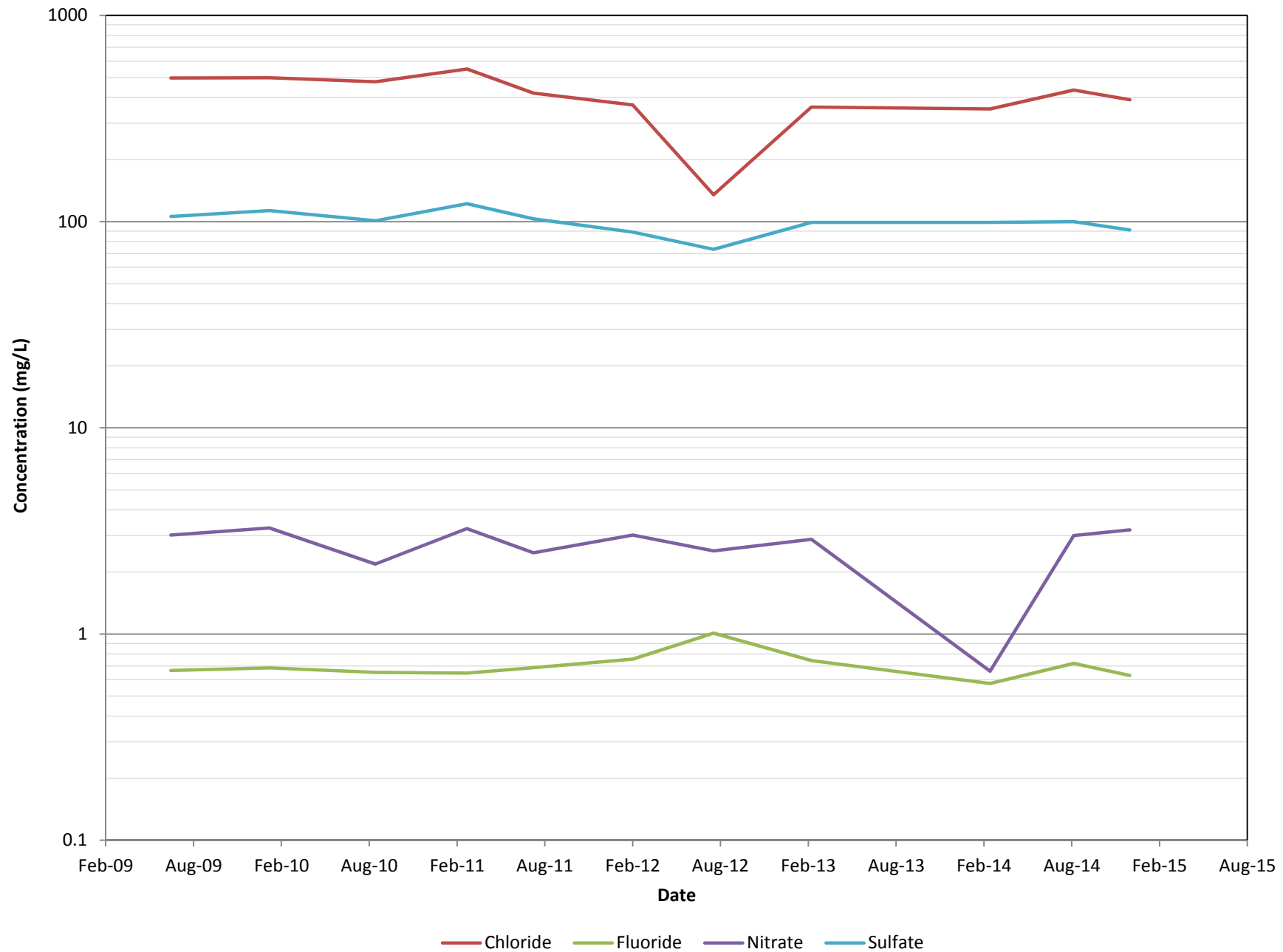
## NORTH WELL (WW-NORTH): TDS CONCENTRATIONS OVER TIME



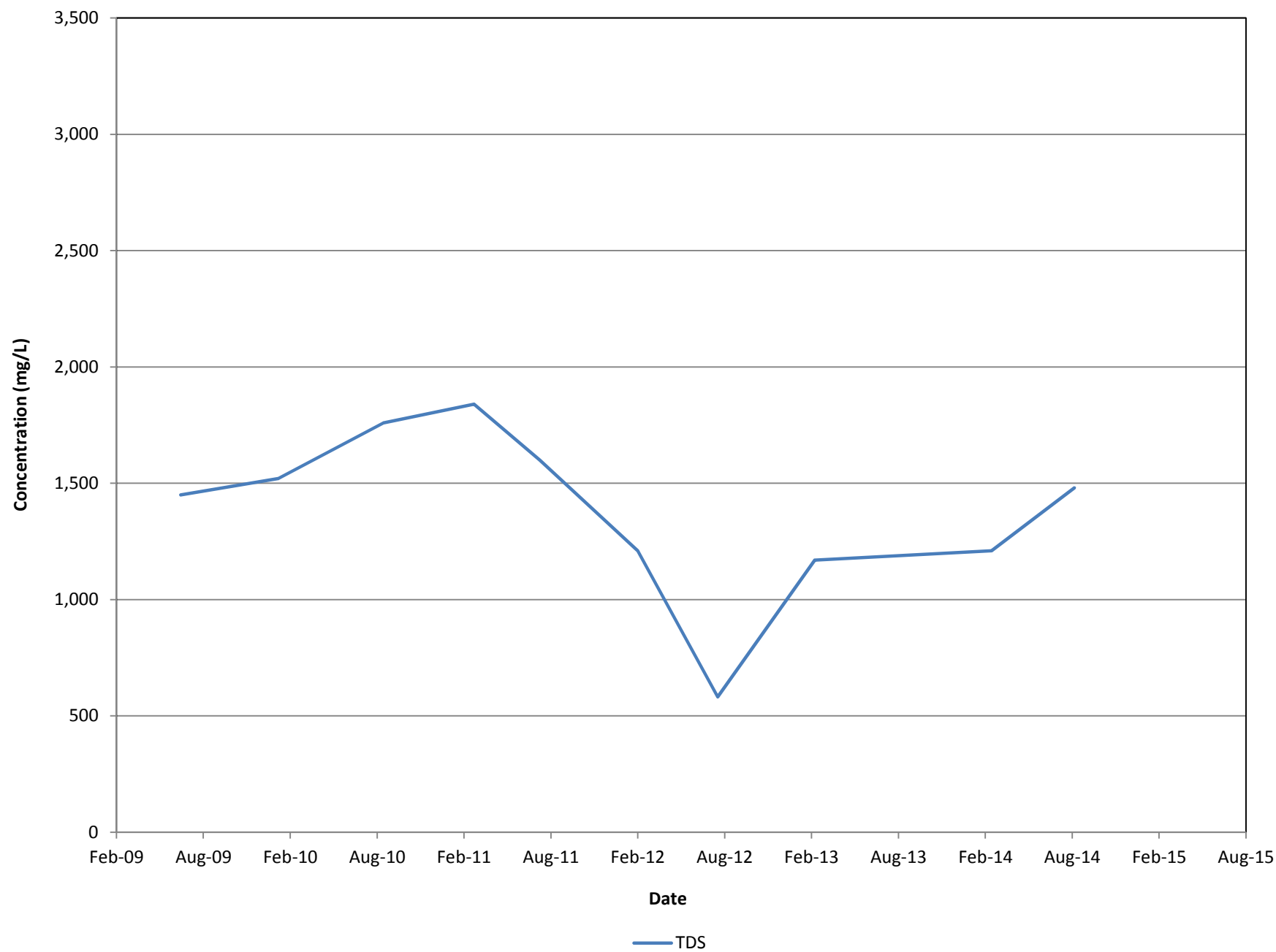
# NORTH WELL (WW-NORTH): METAL CONCENTRATIONS OVER TIME



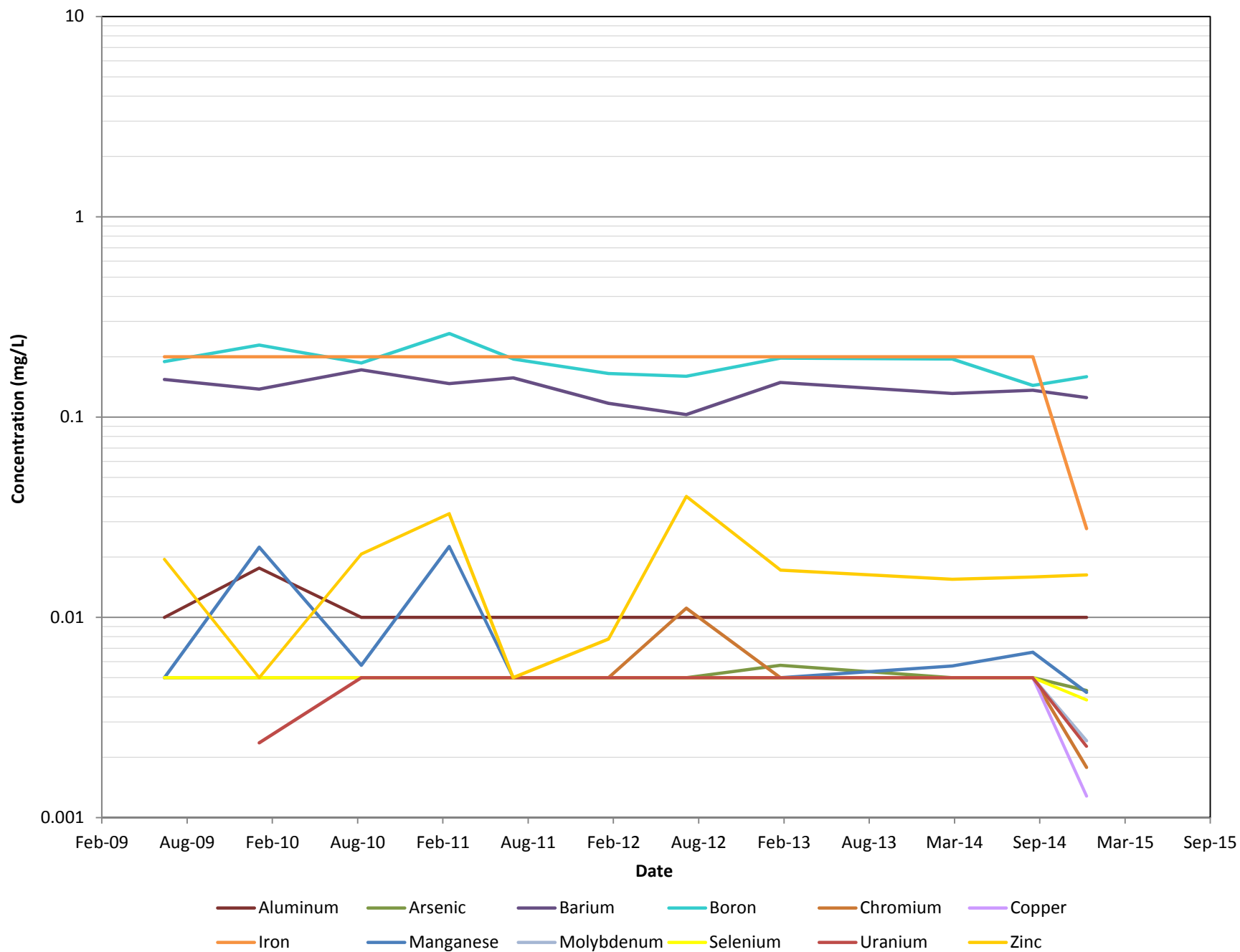
## SOUTH WELL (WW-SOUTH): ANION CONCENTRATIONS OVER TIME



## SOUTH WELL (WW-SOUTH): TDS CONCENTRATIONS OVER TIME



# SOUTH WELL (WW-SOUTH): METAL CONCENTRATIONS OVER TIME





## SOUTH WELL (WW-SOUTH): VOC CONCENTRATIONS OVER TIME

