GW-028

RO Reject Water Discharge Fields Site Investigation

April 2013





Navajo Refining Company

Reverse Osmosis Reject Water Discharge Fields Site Investigation First Quarter 2013 Interim Report OCD Discharge Permit GW-028

Artesia Refinery
Artesia, New Mexico

April 2013



Pamela Krueger

Senior Project Manager, ARCADIS

Reverse Osmosis Reject Water Discharge Fields Site Investigation First Quarter 2013 Interim Report

Prepared for:

New Mexico Environment Department Hazardous Waste Bureau and New Mexico Energy, Minerals and Natural Resources Department - Oil Conservation Division

Prepared by: ARCADIS U.S., Inc. 2929 Briarpark Suite 300 Houston Texas 77042 Tel 713.953.4800 Fax 713.977.4620

Our Ref.:

TX001027.0002.00001

Date: April 2013

This document is intended only for the use of the individual or entity for which it was prepared and may contain information that is privileged, confidential and exempt from disclosure under applicable law.



Table of Contents

4C	ronyms	and Ab	ppreviat	ions	III
Ξx	ecutive	Summa	ary		v
۱.	Introdu	ıction			1
2.	Scope	of Serv	vices		2
	2.1	Monito	ring Well	Installation	2
		2.1.1	Drilling	Activities	2
		2.1.2	Soil Sai	mple Collection Methods	3
		2.1.3	Quality	Assurance/Quality Control	4
		2.1.4	Well Co	onstruction	4
	2.2	Monito	ring Well	Development	4
	2.3	Post-In	nstallation	Groundwater Sampling	5
		2.3.1	Quality	Assurance/Quality Control Samples	5
		2.3.2	Deconta	amination Procedures	5
	2.4	Investi	gation-De	erived Waste Disposal	6
	2.5	Deviati	ions from	Site Investigation Work Plan	6
3.	Regula	tory Cr	iteria		7
	3.1	Soil So	reening L	Levels	7
	3.2	Ground	dwater So	creening Levels	8
1.	Analyti	ical Res	sults an	d Discussion	9
	4.1	Soil An	nalytical F	Results	9
		4.1.1	Laborat	ory Analytical Methods	9
		4.1.2	Data Va	alidation	9
		4.1.3	Results	and Discussion	10
			4.1.3.1	Total Metals	10
			4.1.3.2	Anions	10
			4.1.3.3	Radium	11



Table of Contents

ii

	4.2	Grour	ndwater Analytical Results	11
		4.2.1	Laboratory Analytical Methods	12
		4.2.2	Data Validation	12
		4.2.3	Results and Discussion	12
			4.2.3.1 Total Metals	12
			4.2.3.2 Anions	13
5.	Summa	ry and	d Conclusions	15
6.	Referen	ces		17
Та	bles			
	Table	1	Well Construction Details	
	Table	2	Laboratory Analytical Methods for Soil and Groundwater Samples	
	Table	3	Well Purging and Water Quality Measurement Data	
	Table	4	Summary of Soil Sampling Analytical Results	
	Table	5	Groundwater Screening Levels and Selected Critical Groundwater Screening Level	
	Table	6	Summary of Groundwater Sampling Analytical Results	
F	igures			
	Figure	e 1	Site Location Map	
	Figure	2	Site Features	
	Figure	3	Soil Boring and Monitoring Well Locations	
Α	ppendice	s (all	on compact disc)	
	Appendi	ix A	Well Completion Logs	
	Appendi	ix B	Field Sampling Notes	
	Appendi	ix C	Laboratory Analytical Reports	
	Appendi	x D	Data Validation Reports	

iii



Acronyms and Abbreviations

ARCADIS U.S., Inc.

CGWSL Critical Groundwater Screening Level

COC constituent of concern

DRO diesel-range organics

ft bgs feet below ground surface

GRO gasoline-range organics

GW-28 Discharge Permit GW-028

MCL Maximum Contaminant Level

mg/kg milligrams per kilogram

mg/L milligrams per liter

Navajo Refining Company

NMAC New Mexico Administrative Code

NMED New Mexico Environment Department

OCD New Mexico Energy, Minerals and Natural Resources

Department – Oil Conservation Division

ORO oil-range organics

PCC Permit Post-Closure Care Permit

pci/g picocuries per gram

PSH phase-separated hydrocarbon

QA/QC quality assurance/quality control

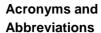
refinery Artesia Refinery

RO reverse osmosis

SOP Standard Operating Procedure

SSL soil screening level

SVOC semivolatile organic compound





TPH total petroleum hydrocarbon

USEPA U.S. Environmental Protection Agency

VOC volatile organic compound

Work Plan Reverse Osmosis Reject Water Discharge Fields Site

Investigation Work Plan

WQCC Water Quality Control Commission



Executive Summary

Navajo Refining Company (Navajo) owns and operates the Artesia Refinery (refinery) in Artesia, New Mexico (Figure 1). The refinery has been in operation since the 1920s and processes crude oil into asphalt, fuel oil, gasoline, diesel, jet fuel, and liquefied petroleum gas. Navajo maintains a groundwater monitoring program according to the requirements of the Post-Closure Care Permit (PCC Permit), which is administered by the New Mexico Environment Department (NMED) Hazardous Waste Bureau, and Discharge Permit GW-028 (GW-028) which is administered by the Oil Conservation Division (OCD) of the New Mexico Energy, Minerals and Natural Resources Department.

Navajo operates a reverse osmosis (RO) unit that processes fresh water as a means to remove contaminants such as minerals and salts. The fresh water is a blend of fresh groundwater and publicly supplied water from the City of Artesia. The RO unit is a pretreatment step in the production of cooling tower makeup water and boiler grade feedwater. The RO unit produces two effluent streams: the RO permeate stream, which is the purified water, and the RO reject water stream, which contains the concentrated salts and minerals that cannot pass through the RO membranes. The RO reject water stream is discharged to the surface of one of two vacant fields located northeast of the refinery operations areas to water native grass in those fields (Figure 2). This discharge occurs in accordance with the April 1993 approved GW-028, issued by OCD.

On August 22, 2012, OCD issued a renewal and update to GW-028 for the refinery (OCD 2012). Section 6.D of GW-028 requires an investigation of groundwater beneath the two RO reject water discharge fields to determine if impacts to groundwater quality have occurred as a result of the discharge of RO fluid. Section 6.D.3 requires a Final Site Investigation Report to be submitted within 90 days following the completion of the fourth quarter sampling event and quarterly interim reports to be submitted 30 days following the receipt of analytical data during each event. This document presents the results from the first quarter sampling event.

The activities performed during the first quarter 2013 site investigation and monitoring event include collection of soil samples at discrete depth intervals at seven boring locations (Figure 3) within the north and south RO reject fields, construction of six permanent monitoring wells at six of the seven drilled boreholes, and collection of groundwater samples at the six monitoring well locations. Section 2 provides a summary of all field activities conducted during the first quarter of 2013.



Section 4 provides the analytical results from soil and groundwater samples collected during the first quarter of 2013. The following conclusions are based upon the information obtained from site investigation and monitoring activities:

- Concentrations of organic constituents in soil were below reporting limits or screening levels in all samples collected. Concentrations of inorganic constituents including arsenic and fluoride were detected above soil leachate screening levels at various subsurface locations in both the northern and southern RO reject discharge fields. No reported concentrations exceeded the industrial/commercial screening levels in shallow soils.
- Radium-226 and radium-228 were detected at each soil boring location; however, soil screening levels are not available for radium and thus no exceedances were observed.
- Groundwater concentrations of organic constituents were below reporting limits
 or screening levels in all samples collected. Concentrations of several inorganic
 metals were detected above screening levels, including arsenic, boron,
 manganese, and uranium. Concentrations of anions including chloride, fluoride,
 and sulfate were detected above screening levels.

According to the requirements of Section 6.D.3 of GW-028, three additional quarterly monitoring events will be conducted, an interim report will be submitted 30 days following the receipt of analytical data from the second and third quarter 2013 sampling events, and a final report will be submitted 90 days after the fourth quarter sampling event has been completed.



Artesia Refinery Artesia, New Mexico

1. Introduction

Navajo Refining Company (Navajo) owns and operates the Artesia Refinery (refinery) in Artesia, New Mexico (Figure 1). The refinery has been in operation since the 1920s and processes crude oil into asphalt, fuel oil, gasoline, diesel, jet fuel, and liquefied petroleum gas. Navajo maintains a groundwater monitoring program according to the requirements of the Post-Closure Care Permit (PCC Permit), which is administered by the New Mexico Environment Department (NMED) Hazardous Waste Bureau, and Discharge Permit GW-028 (GW-028) which is administered by the Oil Conservation Division (OCD) of the New Mexico Energy, Minerals and Natural Resources Department.

Navajo operates a reverse osmosis (RO) unit that processes fresh water as a means to remove contaminants such as minerals and salts. The fresh water is a blend of fresh groundwater and publicly supplied water from the City of Artesia. The RO unit is a pretreatment step in the production of cooling tower makeup water and boiler grade feedwater. The RO unit produces two effluent streams: the RO permeate stream, which is the purified water, and the RO reject water stream, which contains the concentrated salts and minerals that cannot pass through the RO membranes. The RO reject water stream is discharged to the surface of one of two vacant fields located northeast of the refinery operations areas to water native grass in those fields. This discharge occurs in accordance with the April 1993 GW-028 issued by OCD.

On August 22, 2012, OCD issued a renewal and update to GW-028 for the refinery (OCD 2012). Section 6.D of GW-028 requires an investigation of groundwater beneath the two RO reject water discharge fields to determine if impacts to groundwater quality have occurred as a result of the discharge of RO fluid. Section 6.D.3 requires a Final Site Investigation Report to be submitted within 90 days following the completion of the fourth quarter sampling event and quarterly interim reports to be submitted 30 days following the receipt of analytical data during each event. This document presents the results from the first quarter sampling event.



Artesia Refinery Artesia, New Mexico

2. Scope of Services

This section describes site investigation and subsequent groundwater monitoring activities performed during the first quarter sampling event. The objective of the site investigation activities was to further define the geology and hydrogeology, the vertical and horizontal extent and magnitude of vadose zone and groundwater contamination, and the rate and direction of contaminant migration. Field activities, consisting of drilling of soil borings, soil sample collection, monitoring well construction, and subsequent groundwater monitoring, are discussed in the following subsections.

2.1 Monitoring Well Installation

Between January 28 and February 4, 2013, three soil borings were drilled and permanent monitoring wells were constructed within each of the RO reject fields, as required in Section 6.D.2 of the GW-028 permit. Monitoring wells MW-117 and MW-114 were drilled in the vicinity of the RO point of discharge in the northern and southern discharge fields, respectively as requested by OCD on December 4, 2012. At the request of NMED, an additional soil boring was drilled in the northwestern portion of the northern discharge field to provide background moisture content values for soil in an unsaturated area near the discharge fields. Soil boring logs and well construction details are included in Appendix A.

Survey information was not collected during the first quarter reporting period; therefore, approximate boring locations are shown on Figure 3. The well locations will be surveyed during the second quarter of 2013 and actual locations will be adjusted, as necessary, on the figures provided in future reports.

2.1.1 Drilling Activities

Prior to initiating drilling operations, ARCADIS and Navajo personnel inspected and cleared the proposed boring locations of all potential hazards and subsurface utilities. Additionally, ARCADIS notified public utilities and the refinery safety coordinator to obtain clearance and determine site-specific health and safety protocols.

On January 28, 2013, ARCADIS personnel mobilized to the site with National Drilling to commence drilling and monitoring well installation. Each location was manually cleared using a hand auger to a depth of 5 feet below ground surface (ft bgs) in the south RO reject field and to a depth of 10 ft bgs in the north RO reject field.



Artesia Refinery Artesia, New Mexico

Drilling operations were conducted using a truck-mounted hollow-stem auger rig. Boreholes were drilled to a maximum depth of 25 feet below ground surface (ft bgs) at locations MW-115 through MW-119 and to a depth of 35 ft bgs at MW-114. An additional soil boring (RO-SB-1) was drilled to a depth of 35 ft bgs for characterization and sample collection but was not converted to a monitoring well. Soil boring depths are presented in Table 1; boring logs are included in Appendix A.

Drilling and sampling equipment was decontaminated between each use to prevent cross-contamination at boring locations. Augers and drilling tools were washed in a bath of non-phosphate soap (AlconoxTM) and water then rinsed with distilled water.

2.1.2 Soil Sample Collection Methods

Subsurface samples were collected continuously ahead of the auger flight using a split spoon sampler. Total volatile organic compound (VOC) concentrations were measured at discrete depths along the collected soil core using a photo-ionization detector and were noted in field boring logs and well completion diagrams included as Appendix A.

Soil samples were selected from discrete intervals at each boring location for laboratory analysis based on the following guidelines:

- Surface soil: A surface sample was collected from 0 to 1 ft bgs at each location and analyzed for all parameters listed in Table 2.
- 2-Foot Intervals: Soil samples were collected at every 2-foot interval throughout the boring depth and submitted for analysis of moisture content.
- 5-Foot Intervals: Soil samples were collected at every 5-foot interval throughout
 the boring depth and analyzed for inorganic parameters listed in Table 2. Soil
 samples from the shallowest and deepest intervals, and any intervals where field
 screening indicated the potential presence of hydrocarbon impacts, were also
 analyzed for the organic parameters listed in Table 2.

Soil samples selected for laboratory analyses were labeled and placed in ice-packed coolers for submittal to the analytical laboratory. All laboratory analysis was conducted in accordance with the laboratory analytical methods referenced in Table 2.



Artesia Refinery Artesia, New Mexico

2.1.3 Quality Assurance/Quality Control

Quality assurance/quality control (QA/QC) samples were to be collected during drilling and sampling activities to ensure the validity of the soil sample collection procedures. However, no field duplicate soil samples were collected during the well installation effort. Trip blank samples were included with each shipping container that contained samples to be analyzed for VOCs, as required by the work plan.

2.1.4 Well Construction

Following drilling operations, all boreholes were converted to permanent monitoring wells with the exception of boring RO-SB-1. Monitoring wells were constructed with 2-inch PVC well casings with 15 feet of 0.010-inch slotted PVC screens. Wells were constructed with 20/40 silica sand filter pack within the annular space to 2 feet above the screened interval, sealed with a 4-foot bentonite seal, and grouted to the surface using a tremie pipe. Well construction details are included in Table 1.

Each well was completed with a stickup riser extending between 2 and 3 feet above the ground surface and a steel outer protective casing. Protective casings were constructed with a surrounding 4-foot by 4-foot by 4-inch thick concrete pad, sloped away from the protective casing.

Survey information was not collected during the first quarter reporting period; therefore, approximate boring locations are shown on Figure 3. Elevations and locations of all wells will be measured by a registered surveyor during second quarter 2013 sampling activities.

2.2 Monitoring Well Development

All wells installed as part of this investigation were developed through bailing to remove fine grained materials accumulated in the well casing until the bottom of the well casing was reached. Field parameters including conductivity, pH, and temperature were monitored throughout the development process to determine groundwater conditions. The development process was ceased at each location when parameters stabilized (i.e., less than 10% variability between readings) or at least three well casing volumes were removed. All fluids produced during development were collected and disposed of on-site in the process wastewater system, upstream of the oil-water separator.



Artesia Refinery Artesia, New Mexico

2.3 Post-Installation Groundwater Sampling

Groundwater samples were collected from monitoring wells MW-114 through MW-117 on February 3, 2013 and from MW-118 and MW-119 on February 5, 2013 following well development. Field logs for the purging and sample collection from each well are provided in Appendix B, and final water quality parameters are summarized in Table 3.

Prior to collection of samples, each monitoring well was purged using low-flow procedures with a peristaltic pump and newly installed dedicated tubing. During the well purging process, water quality parameters, including pH, conductivity, temperature, and turbidity, were measured at regular intervals using a YSI multiparameter water quality meter with a flow-through cell. Purging continued until water quality parameters stabilized for at least four consecutive readings, indicating that collected water was characteristic of the surrounding formation.

Collected samples were placed in padded packing sleeves to prevent breakage and packed with ice in shipping containers. Samples were submitted to ALS Laboratory in Houston, Texas with chain-of-custody documentation and analyzed in accordance with the laboratory analytical methods referenced in Table 2. Copies of the chain-of-custody forms are included in Appendix C with the analytical data reports.

2.3.1 Quality Assurance/Quality Control Samples

QA/QC samples were to be collected during groundwater sampling activities to ensure activities were conducted according to standard sample collection procedures. No field duplicates of soil samples were collected and no field duplicates of the initial groundwater samples were collected. Trip blank samples were included in each shipping container that contained samples to be analyzed for VOCs, as required.

2.3.2 Decontamination Procedures

All sampling equipment in contact with groundwater (downhole probes) was decontaminated between each sampling location to prevent cross-contamination. The equipment was washed in a bath of non-phosphate soap (such as AlconoxTM) and water then rinsed with distilled water.



Artesia Refinery Artesia, New Mexico

2.4 Investigation-Derived Waste Disposal

During investigation and subsequent sampling activities, all solid investigationderived waste was collected temporarily in a roll-off bin for disposal pending waste characterization results. The solid waste was subsequently disposed of off-site as nonhazardous waste. Waste disposal records are maintained at the refinery.

All collected water from equipment decontamination, well development, and purging was collected and subsequently disposed of within the refinery process wastewater system, upstream of the oil-water separator.

2.5 Deviations from Site Investigation Work Plan

There were no field duplicate samples collected from the soil samples or from the initial groundwater samples. This deviation occurred as a result of misunderstanding on the part of the field crew. Field duplicate samples will be collected for the groundwater samples collected during all future monitoring events.



Artesia Refinery Artesia, New Mexico

3. Regulatory Criteria

This section presents the sources of screening levels used to evaluate investigation analytical results.

3.1 Soil Screening Levels

Navajo has followed guidance provided by NMED to develop soil screening levels (SSLs) to determine the nature and extent of potential COCs within the RO discharge fields. The primary source of soil screening levels is the NMED risk-based soil screening guidance document *Risk Assessment Guidance for Site Investigations and Remediation* (NMED, 2012a). Soil screening values are presented in Table A-1 of that document, and were updated on June 14, 2012 (NMED, 2012b) for the following scenarios:

- Residential Exposure;
- Industrial/Occupational Exposure;
- Construction Worker Exposure; and
- Dilution Attenuation Factor of 20 (DAF20) for protection of groundwater from soil to groundwater leaching.

To adequately characterize the risk to various receptors anticipated within the RO discharge fields, separate screening levels were developed for surface (0 to 1 ft bgs) and subsurface (>1 ft bgs) soil samples. The RO discharge fields are within the refinery area, which is limited to personnel approved to enter the refinery, which includes employees and contractors who have met the safety requirements for entry into the refinery. Additionally, no land use change is anticipated from the current industrial use; therefore, the surface soil SSL for each analyte was determined to be the lowest value from the following sources:

- Table A-1, Industrial/Occupational Exposure; or
- Table A-1, Construction Worker Exposure.

The SSL for subsurface soils up to a depth of 10 feet was set to the Construction Worker Exposure SSL.



Artesia Refinery Artesia, New Mexico

The SSL for subsurface soils at a depth of greater than 10 feet was set to the DAF-20 SSL.

TPH DRO and ORO were compared to the screening level values for "unknown oil" obtained from Table 6-2 of the *Risk Assessment Guidance for Site Investigations and Remediation* (NMED, 2012a).

Soil screening levels are presented in Table 4 with soil analytical results.

3.2 Groundwater Screening Levels

Groundwater data collected during RO investigation activities were evaluated using screening levels established for the facility-wide groundwater monitoring program. Regulatory standards used to evaluate analytical results are based on the presumption that the shallow groundwater might be used as a source of drinking water. The screening level value used for each COC is the lower value of either the New Mexico Water Quality Control Commission (WQCC) standards from 20.6.2.3103 New Mexico Administrative Code (NMAC) or the Maximum Contaminant Level (MCL) from the National Primary Drinking Water Standards. For COCs where neither a WQCC standard or MCL exists, the screening level value used is the NMED Tap Water Standard listed in the updated Table A-1 (NMED, 2012b) of the *Risk Assessment Guidance for Site Investigations and Remediation* (NMED, 2012a). For TPH, the TPH Screening Guidelines for Potable Groundwater for unknown oil included in Table 6-2 of the *Risk Assessment Guidance for Site Investigations and Remediation* (NMED, 2012a) were used, as corrected by subsequent correspondence from the NMED.

The Critical Groundwater Screening Level (CGWSL) for each COC. is provided in the groundwater data summary table (Table 5).



Artesia Refinery Artesia, New Mexico

4. Analytical Results and Discussion

Soil and groundwater samples were collected during field activities according to the Work Plan. As discussed previously, soil samples were collected at discrete depth intervals at boring locations as shown on Figure 3. Following monitoring well development activities, groundwater samples were collected from the six monitoring wells installed within the investigation area and a sample of the RO discharge was collected from the point of discharge, as required by the Discharge Permit (OCD 2012).

4.1 Soil Analytical Results

Soil samples collected at the boring locations were analyzed for site COCs and percent moisture to delineate the extent of RO discharge seepage from the discharge fields. Validated results from soil samples collected are included in Table 4.

4.1.1 Laboratory Analytical Methods

As discussed previously, collected soil samples were analyzed for COCs in accordance with the laboratory analytical methods referenced in Table 2.

4.1.2 Data Validation

ARCADIS performed data validation of soil and groundwater analytical results in accordance with U.S. Environmental Protection Agency (USEPA) guidance (USEPA 1999; 2004). Validated soil analytical data are presented in Table 4. Laboratory analytical results are attached in Appendix C, and the data validation reports are included as Appendix D. Data qualifier flags have been appended to laboratory results based on data evaluation and are presented in Table 4.

The overall assessment of analytical results indicates that the data are acceptable and usable. The sample collected at 25 ft bgs from boring MW-115 was qualified as non-detected at the reporting limit for fluoride due to method blank contamination; however, no systemic field or laboratory QC issues were identified during validation, thus all data are considered usable for the purpose intended.



Artesia Refinery Artesia, New Mexico

4.1.3 Results and Discussion

Concentrations of TPH, VOCs, and polycyclic aromatic hydrocarbons (PAHs) were either not detected above laboratory reporting limits or were below screening levels for all soil samples collected during well installation. Exceedances of screening levels at the sampled locations are discussed by analytical group in detail in the following subsections.

4.1.3.1 Total Metals

Concentrations of metals above SSLs were detected in subsurface samples collected from all soil boring locations. Exceedances were primarily limited to arsenic detections above the DAF 20 SSL; however, manganese was additionally detected in a sample collected at boring location MW-119 above the construction worker SSLs. Exceedances of SSLs observed for arsenic as follows:

Arsenic was detected above the DAF 20 SSL of 0.262 milligrams per kilogram (mg/kg) in subsurface samples at all soil boring locations. No exceedances of the construction worker soil SSL (53 mg/kg) and/or the industrial/occupational SSL (17.7 mg/kg) were observed in the surface or subsurface samples collected during the investigation. The concentrations of arsenic detected above reporting limits ranged from 0.526 mg/kg (MW-117; 25 ft bgs) to 7.29 mg/kg (MW-117; 15 ft bgs).

Concentrations of the remaining metals were not detected above the applicable SSLs in subsurface soils. No exceedances of SSLs were observed for metals in surface soil.

4.1.3.2 Anions

Concentrations of fluoride above the SSL were detected in subsurface samples collected from boring locations MW-116, MW-118, MW-119, and RO-SB-1, as follows:

Fluoride was detected above the DAF 20 SSL (8.37 mg/kg) in samples collected from MW-116 at 15 ft bgs, MW-118 at 15 ft bgs, MW-119 at 15 ft bgs, and RO-SB-1 at 5, 10, 15, 20, and 25 ft bgs. Detected concentrations above the DAF 20 SSL ranged from 8.59 mg/kg (MW-118; 15 ft bgs) to 21.5 mg/kg (RO-SB-1; 10 ft bgs). Exceedances at RO-SB-1 were greatest within the top 15 feet; however, no



Artesia Refinery Artesia, New Mexico

significant increasing or decreasing trend in concentrations is observed within the interval above the SSL.

No SSLs are available for chloride and sulfate; however, these two compounds are of interest to OCD. The concentrations of these two compounds were as follows:

- Chloride was detected above laboratory reporting limits in all samples collected during the investigation. Concentrations of chloride ranged from 6.56 mg/kg (RO-SB-1; 1 ft bgs) to 247 mg/kg (RO-SB-1; 5 ft bgs).
- Sulfate was detected above laboratory reporting limits in all samples collected during the investigation. Concentrations of sulfate ranged from 204 mg/kg (RO-SB-1; 1 ft bgs) to 10,700 mg/kg (MW-118; 5 ft bgs).

Concentrations of the remaining anions were not detected above SSLs. No exceedances of SSLs were observed for anions in surface soil.

4.1.3.3 Radium

No SSLs have been developed for radium, which was present in soil samples, as follows:

- Radium-226 was detected in samples collected at all soil boring locations.
 Concentrations of radium-226 ranged from 0.5 picocuries per gram (pci/g; MW-117; 5 ft bgs) to 1.9 pci/g (MW-114; 5 ft bgs).
- Radium-228 was detected in samples collected at all soil boring locations
 Concentrations of radium-228 ranged from 0.75 pci/g (MW-115; 25 ft bgs) to 1.4 pci/g (MW-116; 10 ft bgs).

4.2 Groundwater Analytical Results

Groundwater samples collected were analyzed for site COCs to delineate the extent of potential groundwater impacts underlying the RO discharge fields. Validated results from groundwater samples collected are included in Table 5. In addition, the analytical results for the sample of RO discharge water collected from the discharge point are presented in Table 5 and are discussed below.



Artesia Refinery Artesia, New Mexico

4.2.1 Laboratory Analytical Methods

As discussed previously, collected samples were analyzed for COCs in accordance with the laboratory analytical methods referenced in Table 2. The laboratory analytical reports are included in electronic format in Appendix C.

4.2.2 Data Validation

Data validation results and a discussion of any data quality exceptions are included in Appendix D. Data qualifier flags have been appended to laboratory results based on data evaluation and are presented in Table 5.

The overall assessment of analytical results indicates that the data are acceptable and usable. A portion of the data collected from monitoring wells MW-116, MW-118, and MW-119 was qualified due to method blank contamination, expired hold times (for nitrate samples only), and spiked analyte results that were outside QC limits. A complete discussion of data validation is provided in Appendix D; however, no systemic field or laboratory QC issues were identified during validation, thus all data are considered usable for the purpose intended.

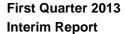
4.2.3 Results and Discussion

Concentrations of radium, TPH, VOCs, and SVOCs were either not detected above laboratory reporting limits or were below screening levels for all samples collected in the first quarter 2013 reporting period. Exceedances of screening levels at the sampled locations are discussed by analytical group in detail in the following subsections.

4.2.3.1 Total Metals

Concentrations of metals above CGWSLs were detected in samples collected from monitoring wells MW-114, MW-115, MW-116, and MW-118. Exceedances of CGWSLs were as follows:

The reported concentration of arsenic (0.011 milligrams per liter [mg/L])
 exceeded the CGWSL (0.01 mg/L) in the sample collected from monitoring well
 MW-118. The concentrations of arsenic at all other monitoring locations were
 below the CGWSL. The arsenic concentration in the RO discharge water was
 also below the CGWSL.





Artesia Refinery Artesia, New Mexico

- The reported concentration of boron (0.865 mg/L) exceeded the CGWSL (0.75 mg/L) in the sample collected from monitoring well MW-115. The concentrations of boron at all other monitoring locations were below the CGWSL. The boron concentration in the RO discharge water was also below the CGWSL.
- The reported concentrations of manganese exceeded the CGWSL (0.2 mg/L) in samples collected from monitoring wells MW-114 (1.51 mg/L) and MW-115 (0.255 mg/L). The concentrations of manganese at all other monitoring locations were below the CGWSL. The manganese concentration in the RO discharge water was also below the CGWSL.
- The reported concentrations of uranium exceeded the CGWSL (0.03 mg/L) in samples collected from monitoring wells MW-115 (0.0843 mg/L), MW-116 (0.0331 mg/L), and MW-118 (0.037 mg/L). The concentrations of uranium at all other monitoring locations were below the CGWSL. The uranium concentration in the RO discharge water was also below the CGWSL.

Concentrations of metals at monitoring wells MW-117 and MW-119 and in the sample collected from the RO discharge point were either not detected above laboratory reporting limits or were below the CGWSLs.

4.2.3.2 Anions

Concentrations of anions above CGWSLs were detected in all samples collected during the monitoring event. Exceedances of CGWSLs observed for chloride, fluoride, and sulfate are detailed below.

- The reported concentrations of chloride exceeded the CGWSL (250 mg/L) in samples collected from monitoring wells MW-115, MW-116, and MW-118, with the maximum concentration (422 mg/L) detected at MW-115. The concentrations of chloride at all other monitoring locations were below the CGWSL. The chloride concentration reported for the RO discharge water sample was the below the chloride concentration in all of the monitoring well samples.
- The reported concentrations of fluoride exceeded the CGWSL (1.6 mg/L) in samples collected from monitoring wells MW-114, MW-117, MW-118, MW-119, and the RO discharge, with the maximum concentration (5.16 mg/L) detected at MW-118. The concentrations of fluoride at all other monitoring locations were below the CGWSL.



Artesia Refinery Artesia, New Mexico

 The reported concentrations of sulfate exceeded the CGWSL (600 mg/L) in all samples collected during the first quarter 2013 monitoring event. Concentrations detected varied from 1690 mg/L (RO discharge) to 2790 mg/L (MW-115).



Artesia Refinery Artesia, New Mexico

5. Summary and Conclusions

Field activities conducted to support further delineation of soil and groundwater beneath the RO reject water discharge fields included the installation of six monitoring wells within the investigation area, installation of a background boring, collection of 47 soil samples from seven locations at various depth intervals, and collection of six groundwater samples from newly installed monitoring locations and one grab sample from the RO discharge.

Review of field and validated laboratory analytical data indicates the following:

- Concentrations of organic constituents in soil were below reporting limits or screening levels in all samples collected. Concentrations of organic constituents in groundwater samples were below reporting limits or screening levels in all samples collected. These results confirm that no impacts from hydrocarbons have occurred as a result of discharge of the RO reject stream to the two fields.
- Concentrations of arsenic were detected above soil leachate screening levels in all subsurface samples collected. However, the arsenic concentration in five of the six wells was below the screening level and the concentration of arsenic (0.011 mg/L) in the sixth well (MW-118) was only slightly above the screening level of 0.01 mg/L. The concentration of arsenic in the RO discharge sample was below the screening level.
- The reported concentrations of manganese were below the applicable screening levels; however, the reported concentrations of manganese in wells MW-114 and MW-115 were above the screening level. The concentration of manganese in the RO discharge sample was below the screening level.
- The concentrations of boron and uranium in soil samples were all below the screening levels; however, the concentrations of boron and uranium in the groundwater sample from MW-115 were above the screening level. The concentrations of uranium in the groundwater sample collected from MW-116 and MW-118 were also above the screening level. The concentrations of boron and uranium in the RO discharge sample were below the screening levels.



Artesia Refinery Artesia, New Mexico

- There is no soil screening level for chloride, but chloride was present in all of the soil samples collected. The reported concentrations of chloride in groundwater exceeded the screening level in samples collected from monitoring wells MW-115, MW-116, and MW-118. The concentration of chloride in the RO discharge sample was below the screening level.
- Concentrations of fluoride in soil samples were detected above the soil leachate screening level at locations MW-116, MW-118, MW-119, and RO-SB-1. The reported concentrations of fluoride in groundwater samples collected from MW-114, MW-117, MW-118, and MW-119 exceeded the screening level for fluoride. The concentration of fluoride in the RO discharge sample was above the screening level.
- There is no soil screening level for sulfate, but sulfate was present in all of the soil samples collected. The reported concentrations of sulfate in groundwater exceeded the screening level in all samples collected during the first quarter monitoring event. The concentration of sulfate in the RO discharge sample was above the screening level.
- There is no soil screening level for radium-226 or for radium-228, but both compounds were present in all of the soil samples collected. Radium-226 and radium-228 were present in three of the six groundwater samples at concentrations below the screening level.

The initial sampling event has been completed. Three additional quarterly groundwater sampling events will be performed in order to establish trends in concentration and evaluate potential impacts due to historic discharge.

A thorough comparison of the data from the four quarterly monitoring events will be presented in the final report along with an evaluation of potential impacts and potential sources of any impacts identified.



Artesia Refinery Artesia, New Mexico

6. References

- ARCADIS. 2012. Reverse Osmosis Reject Water Discharge Fields Site Investigation Work Plan, OCD Discharge Permit GW-028. November.
- New Mexico Energy, Minerals and Natural Resources Department Oil Conservation Division (OCD). 2012. Discharge Permit (GW-028), Navajo Refining Company Artesia Refinery. August.
- NMED. 2010. Navajo Refining Company, Artesia Refinery, Post-Closure Care Permit. December.
- NMED. 2012a. Risk Assessment Guidance for Site Investigations and Remediation. February.
- NMED. 2012b. Table A-1 from the Risk Assessment Guidance for Site Investigations and Remediation, updated. June.
- U.S. Environmental Protection Agency (USEPA). 1999. Contract Laboratory Program National Functional Guidelines for Organic Data Review. U.S. Environmental Protection Agency.
- USEPA. 2004. Contract Laboratory Program National Functional Guidelines for Inorganics Data Review. U.S. Environmental Protection Agency.



Tables

Table 1 - Well Construction Details

First Quarter 2013 Interim Report Navajo Refining Company, Artesia Refinery, New Mexico

Well ID	Date Installed	Drilling Method	Borehole Depth (feet bgs)	Screen Interval (feet bgs)	Screen Material	Screen Slot Size	Filter Pack Depth (feet bgs)	Bentonite Depth (feet bgs)	Casing Diameter (inches)	Casing Material
MW-114	2/5/2013	hollow-stem	35	20-35	slotted PVC	0.002	18-35	14-18	2	PVC
MW-115	2/5/2013	hollow-stem	25	10-25	slotted PVC	0.002	8-25	4-8	2	PVC
MW-116	2/5/2013	hollow-stem	25	10-25	slotted PVC	0.002	8-25	4-8	2	PVC
MW-117	2/5/2013	hollow-stem	25	10-25	slotted PVC	0.002	8-25	4-8	2	PVC
MW-118	2/5/2013	hollow-stem	25	10-25	slotted PVC	0.002	8-25	4-8	2	PVC
MW-119	2/5/2013	hollow-stem	25	10-25	slotted PVC	0.002	8-25	4-8	2	PVC

Notes:

bgs = below ground surface hollow-stem = hollow-stem auger

MW = monitoring well

Table 2 - Laboratory Analytical Methods for Soil and Groundwater Samples

First Quarter 2013 Interim Report

Navajo Refining Company, Artesia Refinery, New Mexico

Sample Matrix	Method	Analyte Group	Specific Compounds
Soil / Groundwater / RO	8015 Mod	Total Petroleum	Gasoline Range Organics
Reject Water		Hydrocarbons	Diesel Range Organics
			Oil Range Organics
Soil / Groundwater / RO	6020 and 7470/7471	Metals (Dissolved Metals	Aluminum
Reject Water		for Groundwater and RO	Arsenic
		Reject Water Samples)	Barium
			Boron
			Cadmium
			Calcium
			Chromium
			Cobalt
			Copper
			Iron
			Lead
			Manganese
			Mercury
			Molybdenum
			Nickel
			Potassium
			Selenium
			Silver
			Sodium
			Uranium
			Zinc
Soil / Groundwater / RO	8260	Volatile Organic	Target Compound List to include specific
Reject Water	0200	Compounds	compounds listed in 20.6.2.7(WW),
reject water		Compounds	20.6.2.3103.A, 20.6.2.3103.B, and
			20.6.2.3103.C
Soil / Groundwater / RO	8270	Semivolatile Organic	Target Compound List to include specific
Reject Water	0270	Compounds	compounds listed in 20.6.2.7(WW),
Reject Water		Compounds	20.6.2.3103.A, 20.6.2.3103.B, and
			20.6.2.3103.C
Soil / Groundwater / RO	9014	Cyanide	Cyanide
Reject Water	9014	Cyanide	Cyarlide
Soil / Groundwater / RO	300	Anions/Cations	Chloride
Reject Water	300	Allions/Cations	Fluoride
Neject Water			Sulfate
			Nitrite/Nitrate
Soil / Groundwater / RO	903.1	Radioactive Parameters	Radioactivity (combined Radium-226
Reject Water	aus. I	Nauloactive Farailleters	and Radium-228)
Soil	2540	Moisture	Percent Moisture
Soil / Groundwater / RO	2540C	Water Quality	Total Dissolved Solids
Reject Water	20400	water Quality	Total Dissolved Collas
Soil / Groundwater / RO	Field instrument	Water Quality	pH
Reject Water	i iciu ilistrument	water Quality	Pr
Neject Water			l .

Note:

RO = reverse osmosis

Table 3 - Well Purging and Water Quality Measurement Data

First Quarter 2013 Interim Report

Navajo Refining Company, Artesia Refinery, New Mexico

Well	Date	Time	Purge	DTW	Temperature	Conductivity	рН	Turbidity
wen	Date	Time	Method	(ft brp)	(°C)	(S/m)	(std units)	(NTU)
MW-114	02/03/2013	11:15	Low Flow	8.61	18.88	4.14	6.49	37.8
MW-115	02/03/2013	12:15	Low Flow	7.49	16.83	4.53	6.83	59.0
MW-116	02/03/2013	13:05	Low Flow	9.93	14.03	4.88	6.69	75.2
MW-117	02/03/2013	9:40	Low Flow	7.08	18.85	4.29	6.36	62.0
MW-118	02/05/2013	14:15	Low Flow	3.74	16.11	4.93	6.72	26.8
MW-119	02/05/2013	13:05	Low Flow	6.63	9.42	4.00	6.87	144

Notes:

°C = degrees Celsius

DTW = depth-to-water

ft brp = feet below reference point

NTU = nephelometric turbidity units

S/m = Siemens per meter

std units = standard pH units

Low Flow = peristaltic pump with dedicated tubing, purged until parameters stabilized

Table 4 - Summary of Soil Sampling Analytical Results First Quarter 2013 Interim Report

		Boring I	Location (Depth)	MW	-114 (1)	MW	/-114 (!	5)		114 (1	0)	MW-	114 (1	5)	MW	-114 (2	(0)	MW-	114 (2	25)
			Depth:		1	_		5			10			15			20			25	
		T	Date:	1/2	8/201	3	1/2	28/2013	3	1/28	<u>8/2013</u>	3	1/28	3/2013		1/2	28/2013	3	1/2	<u>8/201:</u>	3
Analyte	Industrial/ Occupational SSL (mg/kg)	Construction Worker SSL (mg/kg)	DAF 20 SSL (mg/kg)	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Moisture (%)																					
Percent Moisture				17.9		0.01	28		0.01	25.2		0.01	19.9		0.01	27		0.01	23.6		0.01
Metals (mg/kg)																					
Aluminum	1.13E+06	4.07E+04	1.10E+06	13900		117	5490		117	8230		113	8150		99.8	8460		120	10100		124
Arsenic	1.77E+01	5.30E+01	2.62E-01	4.67		0.58	2.19		0.58	3.1		0.56	3.48		0.5	2.97		0.6	3.14		1.24
Barium	2.23E+05	4.35E+03	6.03E+03	115		0.58	99.2		0.58	131		0.56	50.7		0.5	191		0.6	27		0.62
Boron	2.27E+05	4.65E+04	4.80E+02	5.29		2.92	5.78	J	5.84	6.34		5.64	7.64		4.99	3.21		3	5.2	J	6.18
Cadmium	8.97E+02	2.77E+02	2.75E+01	0.403	J	0.58	0.0884	J	0.58	0.126	J	0.56	0.149	J	0.5	0.186	J	0.6	0.279	J	0.62
Calcium				58900		5840	150000		5840	141000		5640	146000		4990	120000		6000	138000		6180
Chromium	1.70E+06	4.65E+05	1.97E+09	14.3		0.58	5.44		1.17	7.76		1.13	9.03		1	3.77		0.6	11.2		1.24
Cobalt				4.91		0.58	1.3		0.58	2.14		0.56	2.92		0.5	2.65		0.6	4.08		1.24
Copper	4.54E+04	1.24E+04	1.03E+03	26.4		0.58	1.67		0.58	2.82		0.56	3.34		0.5	3.97		0.6	3.57		1.24
Iron	7.95E+05	2.17E+05	1.29E+04	9110		58.4	3330		58.4	4890		56.4	5630		49.9	5630		60	9390		124
Lead	8.00E+02	8.00E+02		37.3		0.58	2.59		0.58	3.86		0.56	4.96		0.5	4.37		0.6	6.42		0.62
Manganese	2.67E+04	4.40E+02	1.14E+03	192		0.58	45.8		0.58	78		0.56	129		0.5	137		0.6	125		1.24
Mercury	7.36E+01	1.36E+01	6.54E-01	0.0199		0		U	0	0.00371	J	0	0.00127	J	0		U	0	0.00738		0
Molybdenum	5.68E+03	1.55E+03	7.40E+01	0.58	J	0.58	0.273	J	0.58	0.406	J	0.56	0.808		0.5	0.594	J	0.6	0.592	J	0.62
Nickel	2.25E+04	6.19E+03	9.53E+02	10.7		0.58	3.16		0.58	4.48		0.56	6.38		0.5	5.71		0.6	5.62		1.24
Potassium				3520		58.4	1060		58.4	1650		56.4	1240		49.9	1610		60	1660		61.8
Selenium	5.68E+03	1.55E+03	1.93E+01	1.12		0.58	0.307	J	0.58	0.64		0.56	0.537		0.5	0.453	J	0.6		U	1.24
Silver	5.68E+03	1.55E+03	3.13E+01		U	0.58		U	0.58		U	0.56		U	0.5		U	0.6		U	0.62
Sodium				157		58.4	110		58.4	136		56.4	113		49.9	108		60	181		124
Uranium	3.41E+03	9.29E+02	9.86E+02		U	0.58		U	0.58		U	0.56		U	0.5		U	0.6		U	0.62
Zinc	3.41E+05	9.29E+04	1.36E+04	40		0.58	9.61		0.58	14.9		0.56	16.1		0.5	18.2		0.6	23		1.24
Anions (mg/kg)	<u> </u>	•								<u> </u>											
Chloride				21		6.06	24.9		6.93	20.6		6.56	27.8		6.22	24.6		6.78	19.8		6.52
Fluoride (F-, Anion)	4.54E+04	1.24E+04	8.37E+00	11.1		1.21	7.73		1.39	5.02		1.31	7.12		1.24	4.19		1.36	4.63		1.3
Nitrate-N	1.82E+06	4.96E+05	3.35E+02		U	1.21		U	1.39		U	1.31		U	1.24		U	1.36		U	1.3
Nitrite	1.14E+05	3.10E+04	2.09E+01		U	1.21		U	1.39		U	1.31		U	1.24		U	1.36		U	1.3
Sulfate				1120		6.06	796		6.93	6970		65.6	1270		6.22	320		6.78	390		6.52
Cyanide	6.81E+02	1.86E+02	4.41E+00		U	2.41		U	2.66		U	2.46		U	2.29		U	2.5		U	2.49
Radium (pci/g)	•				•									•							
Radium-226				1.83		0.65	1.9	G	0.38	1.13		0.41	0.9	LT,G							0.45
Radium-228					U,G	0.99	1.12	G,NQ	1		U,G	0.66		U,G	0.89	1.06	G,NQ	0.77		U,G	0.73

First Quarter 2013 Interim Report

		Boring I	Location (Depth)	MW	-114 ((1)	MV	V-114 (5)	MW-	114 (10)		MW-	114 (1	5)	MW	-114 (2	0)	MW-	114 (2	25)
		_	Depth:		1			5			10			15			20			25	
			Date:	1/2	8/201	3	1/2	28/2013	3	1/2	8/2013		1/28	3/2013		1/	28/2013	3	1/2	8/201	3
Analyte	Industrial/ Occupational SSL (mg/kg)	Construction Worker SSL (mg/kg)	DAF 20 SSL (mg/kg)	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	I RL
TPH (mg/kg)																					
Gasoline Range Organics					U	0.06	NA			NA			NA			NA			NA		
Diesel Range Organics	1.00E+03				U	2.1	NA			NA			NA			NA			NA		
Motor Oil Range Organics	1.00E+03			0.83	J	4.1	NA			NA			NA			NA			NA		
VOCs (mg/kg)				•		1	•			•	<u> </u>					-			-	<u> </u>	
1,1,1-Trichloroethane	7.89E+04	1.48E+04	5.82E+01		U	0.01	NA			NA			NA			NA			NA		
1,1,2,2-Tetrachloroethane	4.35E+01	2.21E+02	4.26E-03		U	0.01	NA			NA			NA			NA			NA		
1,1,2-Trichloroethane	1.33E+01	4.72E+02	2.23E-03		U	0.01	NA			NA			NA			NA			NA		
1,1-Dichloroethane	3.59E+02	1.70E+03	1.20E-01		U	0.01	NA			NA			NA			NA			NA		1
1,1-Dichloroethene	2.29E+03	4.32E+02	2.32E+00		U	0.01	NA			NA			NA			NA			NA		
1,2-Dibromoethane	3.22E+00	1.60E+01	3.08E-04		U	0.01	NA			NA			NA			NA			NA		1
1,2-Dichloroethane	4.35E+01	5.87E+01	7.11E-03		U	0.01	NA			NA			NA			NA			NA		
Benzene	8.47E+01	1.38E+02	3.45E-02		U	0.01	NA			NA			NA			NA			NA		
Carbon Tetrachloride	5.98E+01	2.26E+02	3.21E-02		U	0.01	NA			NA			NA			NA			NA		
Chloroform	3.27E+01	1.54E+02	9.18E-03		U	0.01	NA			NA			NA			NA			NA		
Dichloromethane	4.70E+03	1.12E+03	8.24E-01	0.0032	J	0.01	NA			NA			NA			NA			NA		
Ethylbenzene	3.78E+02	1.83E+03	2.60E-01		U	0.01	NA			NA			NA			NA			NA		
Tetrachloroethene	3.66E+01	2.12E+02	8.61E-03		U	0.01	NA			NA			NA			NA			NA		
Toluene	5.77E+04	1.34E+04	2.53E+01		U	0.01	NA			NA			NA			NA			NA		
Total Xylenes	3.98E+03	7.43E+02	3.13E+00		U	0.02	NA			NA			NA			NA			NA		
Trichloroethene	4.13E+01	7.68E+00	2.11E-02		U	0.01	NA			NA			NA			NA			NA		
Vinyl Chloride	2.61E+01	1.49E+02	1.08E-03		U	0	NA			NA			NA			NA			NA		
PAHs (mg/kg)																					
1-Methylnaphthalene					U	0.01	NA			NA			NA			NA			NA		
2-Methylnaphthalene					U	0.01	NA			NA			NA			NA			NA		
Benzo(a)Pyrene	2.34E+00	2.13E+01	5.20E-01		U	0.01	NA			NA			NA			NA			NA		
Naphthalene	2.41E+02	1.58E+02	7.13E-02		U	0.01	NA			NA			NA			NA			NA		

First Quarter 2013 Interim Report

		Boring I	_ocation (Depth)	M	W-114	(29)	MW	/-114 (30	0)	N	IW-114 ((35)	M\	W -115	5 (1)	MW	/- 115 (5	,)
		Depth: Date:			29			30			35			1			5	
			Date:	1	/28/20	13	1/:	28/2013			1/28/201	13	1	/29/20	13	1/2	29/2013	
Analyte	Industrial/ Occupational SSL (mg/kg)	Construction Worker SSL (mg/kg)	DAF 20 SSL (mg/kg)	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Moisture (%)																		
Percent Moisture				NA			27.4		0.01	17.5		0.01	19		0.01	26.9		0.01
Metals (mg/kg)																		
Aluminum	1.13E+06	4.07E+04	1.10E+06	NA			11100		118	8660		88.4	13800		118	13200		120
Arsenic	1.77E+01	5.30E+01	2.62E-01	NA			1.13	J	1.18	1.09		0.442	3.6		0.591	2.42		0.6
Barium	2.23E+05	4.35E+03	6.03E+03	NA			111		0.59	75.2		0.442	147		0.591	79.7		0.6
Boron	2.27E+05	4.65E+04	4.80E+02	NA			3.95	J	5.92	2.39		2.21	6.45		2.95	9.03		5.99
Cadmium	8.97E+02	2.77E+02	2.75E+01	NA			0.183	J	0.59	0.129	J	0.442	0.39	J	0.591	0.257	J	0.6
Calcium				NA			146000		5920	50400		4420	64700		5910	90500		5990
Chromium	1.70E+06	4.65E+05	1.97E+09	NA			11.4		1.18	7.82		0.442	12.8		0.591	13		0.6
Cobalt				NA			3.6		1.18	2.38		0.442	4.78		0.591	4.55		0.6
Copper	4.54E+04	1.24E+04	1.03E+03	NA			5.59		1.18	2.71		0.442	11.4		0.591	7.86		0.6
Iron	7.95E+05	2.17E+05	1.29E+04	NA			8870		118	5410		44.2	9060		59.1	8880		59.9
Lead	8.00E+02	8.00E+02		NA			5.54		0.59	4.82		0.442	23.7		0.591	8.22		0.6
Manganese	2.67E+04	4.40E+02	1.14E+03	NA			217		59.2	88.1		0.442	357		59.1	211		0.6
Mercury	7.36E+01	1.36E+01	6.54E-01	NA				U	0		U	0.0041	0.0182		0.0044	0.00569		0
Molybdenum	5.68E+03	1.55E+03	7.40E+01	NA			0.289	J	0.59	0.187	J	0.442	0.742		0.591	0.68		0.6
Nickel	2.25E+04	6.19E+03	9.53E+02	NA			6.9		1.18	5.19		0.442	9.67		0.591	8.77		0.6
Potassium				NA			1840		59.2	1860		44.2	3360		59.1	2630		59.9
Selenium	5.68E+03	1.55E+03	1.93E+01	NA				U	1.18	0.258	J	0.442	0.949		0.591	0.843		0.6
Silver	5.68E+03	1.55E+03	3.13E+01	NA				U	0.59		U	0.442		U	0.591		U	0.6
Sodium				NA			208		118	125		44.2	327		59.1	216		59.9
Uranium	3.41E+03	9.29E+02	9.86E+02	NA				U	0.59		U	0.442		U	0.591	0.856		0.6
Zinc	3.41E+05	9.29E+04	1.36E+04	NA			23.4		1.18	14.4		0.442	33.8		0.591	31.4		0.6
Anions (mg/kg)					<u>'</u>		-			<u></u>			<u> </u>			<u> </u>		
Chloride				NA			20.8		6.87	19.6		6.01	58.8		6.14	51.5		6.79
Fluoride (F-, Anion)	4.54E+04	1.24E+04	8.37E+00	NA			2.25		1.37	3.2		1.2	5.2		1.23	5.92		1.36
Nitrate-N	1.82E+06	4.96E+05	3.35E+02	NA				U	1.37		U	1.2		U	1.23		U	1.36
Nitrite	1.14E+05	3.10E+04	2.09E+01	NA				U	1.37		U	1.2		U	1.23		U	1.36
Sulfate				NA			338		6.87	259		6.01	1160		6.14	1070		6.79
Cyanide	6.81E+02	1.86E+02	4.41E+00	NA				U	2.7		U	2.18		U	2.3		U	2.71
Radium (pci/g)				-			<u>-</u>			_			_			-		
Radium-226				NA			0.73	LT,G,TI	0.38	0.82	LT,G	0.5	1.62	G	0.6	1.29	G	0.41
Radium-228				NA			0.86	LT,G,TI	0.57	0.99	LT,G,TI	0.88	1.25	G,TI	0.83	0.78	LT,G,TI	0.7

First Quarter 2013 Interim Report

		Boring l	ocation (Depth)	M۱	N-114	(29)	MW	/-114 (30	0)	N	IW-114 ((35)	M	W -115	5 (1)	MW	- 115 (5))
		_	Depth:		29			30			35			1			5	
			Date:	1	/28/20)13	1/	28/2013			1/28/20	13	1	/29/20	13	1/2	29/2013	
Analyte	Industrial/ Occupational SSL (mg/kg)	Construction Worker SSL (mg/kg)	DAF 20 SSL (mg/kg)	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
TPH (mg/kg)				•														
Gasoline Range Organics				NA			NA				U	0.061		U	0.062	NA		
Diesel Range Organics	1.00E+03			NA			NA				U	2.1		U	2.1	NA		
Motor Oil Range Organics	1.00E+03			NA			NA			0.63	J	0.63	1.4	J	1.4	NA		
VOCs (mg/kg)					•	•												
1,1,1-Trichloroethane	7.89E+04	1.48E+04	5.82E+01		U	0.005	NA				U	0.0061		U	0.0062	NA		
1,1,2,2-Tetrachloroethane	4.35E+01	2.21E+02	4.26E-03		U	0.005	NA				U	0.0061		U	0.0062	NA		
1,1,2-Trichloroethane	1.33E+01	4.72E+02	2.23E-03		U	0.005	NA				U	0.0061		U	0.0062	NA		
1,1-Dichloroethane	3.59E+02	1.70E+03	1.20E-01		U	0.005	NA				U	0.0061		U	0.0062	NA		
1,1-Dichloroethene	2.29E+03	4.32E+02	2.32E+00		U	0.005	NA				U	0.0061		U	0.0062	NA		
1,2-Dibromoethane	3.22E+00	1.60E+01	3.08E-04		U	0.005	NA				U	0.0061		U	0.0062	NA		
1,2-Dichloroethane	4.35E+01	5.87E+01	7.11E-03		U	0.005	NA				U	0.0061		U	0.0062	NA		
Benzene	8.47E+01	1.38E+02	3.45E-02		U	0.005	NA				U	0.0061		U	0.0062	NA		
Carbon Tetrachloride	5.98E+01	2.26E+02	3.21E-02		U	0.005	NA				U	0.0061		U	0.0062	NA		
Chloroform	3.27E+01	1.54E+02	9.18E-03		U	0.005	NA				U	0.0061		U	0.0062	NA		
Dichloromethane	4.70E+03	1.12E+03	8.24E-01	0.003	J	0.0025	NA			0.004	J	0.0038		U	0.012	NA		
Ethylbenzene	3.78E+02	1.83E+03	2.60E-01		U	0.005	NA				U	0.0061		U	0.0062	NA		
Tetrachloroethene	3.66E+01	2.12E+02	8.61E-03		U	0.005	NA				U	0.0061		U	0.0062	NA		
Toluene	5.77E+04	1.34E+04	2.53E+01		U	0.005	NA				U	0.0061		U	0.0062	NA		
Total Xylenes	3.98E+03	7.43E+02	3.13E+00		U	0.015	NA				U	0.018		U	0.019	NA		
Trichloroethene	4.13E+01	7.68E+00	2.11E-02		U	0.005	NA				U	0.0061		U	0.0062	NA		
Vinyl Chloride	2.61E+01	1.49E+02	1.08E-03		U	0.002	NA				U	0.0024		U	0.0025	NA		
PAHs (mg/kg)																		
1-Methylnaphthalene				NA			NA				U	0.008		U	0.0081	NA		
2-Methylnaphthalene				NA			NA				U	0.008		U	0.0081	NA		
Benzo(a)Pyrene	2.34E+00	2.13E+01	5.20E-01	NA			NA				U	0.008		U	0.0081	NA		
Naphthalene	2.41E+02	1.58E+02	7.13E-02	NA			NA			_	U	0.008	_	U	0.0081	NA	_	

First Quarter 2013 Interim Report Navajo Refining Company, Artesia Refinery, New Mexico

		Boring I	Location (Depth)	MW-	- 115 (<i>′</i>	10)	MW-	115 (*	15)	MW	/ -115 (2 20	0)	MV	V-115 25	(25)	M	W-116	(1)	MW-	·116 (5	i)
		Depth: Date: Construction			10 29/201:	2	1/2	15 29/201:	2	1/	20 29/2013		1		12	1	/29/20	12	1/2	3 9/2013	,
Analyte	Industrial/ Occupational SSL (mg/kg)	Construction Worker SSL (mg/kg)	DAF 20 SSL (mg/kg)	Result			Result			Result	<u> </u>	RL	Result		RL	Result			Result	Qual	
Moisture (%)																					
Percent Moisture				19.9		0.01	16.3		0.01	18.9		0.01	20.9		0.01	17.9		0.01	16.1		0.01
Metals (mg/kg)																					_
Aluminum	1.13E+06	4.07E+04	1.10E+06	12100		117	4980		110	10300		115	5210		112	14600		82.6	9770		76.4
Arsenic	1.77E+01	5.30E+01	2.62E-01	2.9		0.59	0.893		0.55	2.53		0.57	1.05		0.558	4.38		0.413	3.65		0.38
Barium	2.23E+05	4.35E+03	6.03E+03	120		0.59	458		54.9	179		0.57	68		0.558	130		0.413	155		38.2
Boron	2.27E+05	4.65E+04	4.80E+02	6.04		2.94	3.78	J	5.49	4.85	J	5.73		U	13.9	7.77		4.13	7.48		3.82
Cadmium	8.97E+02	2.77E+02	2.75E+01	0.449	J	0.59	0.117	J	0.55	0.251	J	0.57	0.173	J	0.558	0.407	J	0.413	0.156	J	0.38
Calcium				63400		5870	157000		5490	161000		5730	219000		5580	60800		4130	122000		3820
Chromium	1.70E+06	4.65E+05	1.97E+09	14.3		0.59	5.84		1.1	9.21		1.15	5.52		2.79	14		0.413	8.46		0.38
Cobalt				4.7		0.59	1.62		0.55	3.7		0.57	1.33		0.558	5.52		0.413	2.94		0.38
Copper	4.54E+04	1.24E+04	1.03E+03	15.5		0.59	1.31		0.55	3.3		0.57	1.19		0.558	11.1		0.413	4.05		0.38
Iron	7.95E+05	2.17E+05	1.29E+04	8210		58.7	3200		54.9	7710		57.3	2980		55.8	10100		41.3	6240		38.2
Lead	8.00E+02	8.00E+02		44.9		0.59	3.28		0.55	7.03		0.57	3.73		0.558	14.7		0.413	4.47		0.38
Manganese	2.67E+04	4.40E+02	1.14E+03	175		0.59	62.9		0.55	132		0.57	48		0.558	375		41.3	163		38.2
Mercury	7.36E+01	1.36E+01	6.54E-01	0.0146		0		U	0		U	0		U	0.0045	0.0081		0.0035	0.00677		0
Molybdenum	5.68E+03	1.55E+03	7.40E+01	0.614		0.59		U	0.55	0.228	J	0.57		U	0.558	0.585		0.413	0.485		0.38
Nickel	2.25E+04	6.19E+03	9.53E+02	9.68		0.59	3.12		0.55	6.69		0.57	2.74		0.558	11.6		0.413	6.19		0.38
Potassium				3490		58.7	860		54.9	1690		57.3	773		55.8	3770		82.6	2130		38.2
Selenium	5.68E+03	1.55E+03	1.93E+01	1.2		0.59	0.348	J	0.55	0.699		0.57	0.428	J	0.558	0.95		0.413	0.485		0.38
Silver	5.68E+03	1.55E+03	3.13E+01	0.11	J	0.59		U	0.55		U	0.57		U	0.558		U	0.413		U	0.38
Sodium				288		58.7	122		54.9	186		57.3	129		55.8	135		82.6	156		38.2
Uranium	3.41E+03	9.29E+02	9.86E+02		U	0.59		U	0.55		U	0.57		U	0.558		U	0.413	0.523		0.38
Zinc	3.41E+05	9.29E+04	1.36E+04	37.9		0.59	8.52		0.55	20.5		0.57	8.99		0.558	37.3		0.413	19		0.38
Anions (mg/kg)						ı															
Chloride				55		6.17	49.1		5.93	51.6		6.15	50.4		6.2	22.2		4.99	29.8		4.96
Fluoride (F-, Anion)	4.54E+04	1.24E+04	8.37E+00	7.73		1.23	3.85		1.19	5.04		1.23	0	UB	3.55	14.7		0.999	4.51		0.99
Nitrate-N	1.82E+06	4.96E+05	3.35E+02		U	1.23		U	1.19		U	1.23		U	1.24	2.63		0.999		U	0.99
Nitrite	1.14E+05	3.10E+04	2.09E+01		U	1.23		U	1.19		U	1.23		U	1.24		U	0.999		U	0.99
Sulfate				722		6.17	383		5.93	463		6.15	326		6.2	330		4.99	234		4.96
Cyanide	6.81E+02	1.86E+02	4.41E+00		U	2.43		U	2.3		U	2.3		U	2.52		U	1.94		U	1.8
Radium (pci/g)	1				•	•											•				
Radium-226				1.39	G	0.64	0.57	LT,G	0.47	0.58	LT,G,TI	0.49		U,G	0.51	1.87	G	0.53	0.86	LT,G	0.51
Radium-228				1.03	G,NQ	0.91			0.63			0.81		NQ	0.68	1.2	G,TI	0.64		U,G	8.0

First Quarter 2013 Interim Report

		Boring L	ocation (Depth)	MW-	· 115 (1 10	0)	MW-	115 (1 15	5)	MW	/ -115 (20 20	0)	MV	V-115	(25)	M	N-116	(1)	MW-	-116 (5	i)
			Depth: Date:	4 /	29/2013	,	4 /	1 5 29/2013		4.	20 /29/2013		1	25 /29/20	110	1	<u>1</u> /29/20	4.0	1/0	9/2013	,—
	1		Date.	1/2	<u> </u>)	1/2	29/2013)	1/	/ <u>29/2013</u>		<u> </u>	29/20	13	1,	/29/20	13	1/2	9/2013 T	,
Analyte	Industrial/ Occupational SSL (mg/kg)	Construction Worker SSL (mg/kg)	DAF 20 SSL (mg/kg)	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
TPH (ma/ka)																					
Gasoline Range Organics				NA			NA			NA				U	0.063		U	0.05	NA	T .	
Diesel Range Organics	1.00E+03			NA			NA			NA				U	2.1	0.53	J	0.53	NA		
Motor Oil Range Organics	1.00E+03			NA			NA			NA			0.77	J	0.77	4.7		4.7	NA		
VOCs (mg/kg)	•																				-
1,1,1-Trichloroethane	7.89E+04	1.48E+04	5.82E+01	NA			NA			NA				U	0.0063		U	0.005	NA		
1,1,2,2-Tetrachloroethane	4.35E+01	2.21E+02	4.26E-03	NA			NA			NA				U	0.0063		U	0.005	NA		
1,1,2-Trichloroethane	1.33E+01	4.72E+02	2.23E-03	NA			NA			NA				U	0.0063		U	0.005	NA		
1,1-Dichloroethane	3.59E+02	1.70E+03	1.20E-01	NA			NA			NA				U	0.0063		U	0.005	NA		
1,1-Dichloroethene	2.29E+03	4.32E+02	2.32E+00	NA			NA			NA				U	0.0063		U	0.005	NA		
1,2-Dibromoethane	3.22E+00	1.60E+01	3.08E-04	NA			NA			NA				U	0.0063		U	0.005	NA		
1,2-Dichloroethane	4.35E+01	5.87E+01	7.11E-03	NA			NA			NA				U	0.0063		U	0.005	NA		
Benzene	8.47E+01	1.38E+02	3.45E-02	NA			NA			NA				U	0.0063		U	0.005	NA		
Carbon Tetrachloride	5.98E+01	2.26E+02	3.21E-02	NA			NA			NA				U	0.0063		U	0.005	NA		
Chloroform	3.27E+01	1.54E+02	9.18E-03	NA			NA			NA				U	0.0063		U	0.005	NA		
Dichloromethane	4.70E+03	1.12E+03	8.24E-01	NA			NA			NA				U	0.013		U	0.01	NA		
Ethylbenzene	3.78E+02	1.83E+03	2.60E-01	NA			NA			NA				U	0.0063		U	0.005	NA		
Tetrachloroethene	3.66E+01	2.12E+02	8.61E-03	NA			NA			NA				U	0.0063		U	0.005	NA		
Toluene	5.77E+04	1.34E+04	2.53E+01	NA			NA			NA				U	0.0063		U	0.005	NA		
Total Xylenes	3.98E+03	7.43E+02	3.13E+00	NA			NA			NA				U	0.019		U	0.015	NA		
Trichloroethene	4.13E+01	7.68E+00	2.11E-02	NA			NA			NA				U	0.0063		U	0.005	NA		
Vinyl Chloride	2.61E+01	1.49E+02	1.08E-03	NA			NA			NA				U	0.0025		U	0.002	NA		
PAHs (mg/kg)																					
1-Methylnaphthalene				NA			NA			NA				U	0.0083		U	0.0066	NA		
2-Methylnaphthalene				NA			NA			NA				U	0.0083		U	0.0066	NA		
Benzo(a)Pyrene	2.34E+00	2.13E+01	5.20E-01	NA			NA			NA				U	0.0083		U	0.0066	NA		
Naphthalene	2.41E+02	1.58E+02	7.13E-02	NA			NA			NA				U	0.0083		U	0.0066	NA		

First Quarter 2013 Interim Report Navajo Refining Company, Artesia Refinery, New Mexico

		Boring I	Location (Depth)		116 (1 10	0)		116 (15 15	5)	MW-	116 (2 20	0)	MW	-116 (2 25	25)	MV	V-117	(1)	MW	'-117 (5)
			Depth: Date:		0/2013)		0/2013		1/2	20 0/2013)	1 /	30/201	2	1/	i 31/201	2	1/2	3 31/201	2
Analyte	Industrial/ Occupational SSL (mg/kg)	Construction Worker SSL (mg/kg)	DAF 20 SSL (mg/kg)	Result	Qual			Qual	RL	Result	Qual		Result	Qual	S RL		Qual	S RL	Result		
Moisture (%)	1 \ J \ J/	(5 5)	\ <u>J- J/</u>																		
Percent Moisture				16.4		0.01	15.3		0.01	19.2		0.01	23.2		0.01	22.5		0.01	19		0.01
Metals (mg/kg)																					
Aluminum	1.13E+06	4.07E+04	1.10E+06	7550		86.4	3970		89.6	8370		92	7960		81.8	15200		127	5020		119
Arsenic	1.77E+01	5.30E+01	2.62E-01	2.48		0.43	2.83		0.45	6.28		0.46	3.22		0.409	4.74		0.634	1.4		0.59
Barium	2.23E+05	4.35E+03	6.03E+03	43.5		0.43	19		0.45	19.9		0.46	181		40.9	182		0.634	62.2		0.59
Boron	2.27E+05	4.65E+04	4.80E+02	9.23	J	10.8	6.99	J	11.2	4.74		4.6	7.57		4.09	8.67		6.34	7.89		5.93
Cadmium	8.97E+02	2.77E+02	2.75E+01	0.114	J	0.43	0.102	J	0.45	0.283	J	0.46	0.205	J	0.409	0.374	J	0.634	0.133	J	0.59
Calcium				166000		4320	216000		4480	104000		4600	76500		4090	83700		6340	151000		5930
Chromium	1.70E+06	4.65E+05	1.97E+09	6.73		0.43	3.86		0.45	7.41		0.46	6.81		0.409	15.4		0.634	7.26		0.59
Cobalt				2.58		0.43	2.7		0.45	2.95		0.46	2.49		0.409	5.45		0.634	1.54		0.59
Copper	4.54E+04	1.24E+04	1.03E+03	2.97		0.43	2.53		0.45	4.92		0.46	4.45		0.409	9.7		0.634	2.51		0.59
Iron	7.95E+05	2.17E+05	1.29E+04	4720		43.2	2880		44.8	7120		46	5710		40.9	10800		63.4	3570		59.3
Lead	8.00E+02	8.00E+02		3.63		0.43	2.03		0.45	7.08		0.46	5.57		0.409	11.9		0.634	2.9		0.59
Manganese	2.67E+04	4.40E+02	1.14E+03	139		0.43	351		44.8	251		46	169		40.9	410		63.4	105		0.59
Mercury	7.36E+01	1.36E+01	6.54E-01	0.00774		0	0.000647	J	0	0.00829		0	0.000757	J	0.0034	0.00702		0.0046	0	U	0
Molybdenum	5.68E+03	1.55E+03	7.40E+01	0.331	J	0.43	0.645		0.45	0.837		0.46	0.381	J	0.409	1.01		0.634	0.457	J	0.59
Nickel	2.25E+04	6.19E+03	9.53E+02	4.51		0.43	5.57		0.45	7.79		0.46	6.75		0.409	11.4		0.634	3.48		0.59
Potassium				1620		43.2	956		44.8	1280		46	1700		40.9	3310		63.4	1110		59.3
Selenium	5.68E+03	1.55E+03	1.93E+01	0.353	J	0.43	0.252	J	0.45	0.512		0.46	0.433		0.409	0.98		0.634	0.415	J	0.59
Silver	5.68E+03	1.55E+03	3.13E+01		U	0.43		U	0.45		U	0.46		U	0.409		U	0.634		U	0.59
Sodium				121		43.2	108		44.8	142		46	120		40.9	332		127	164		119
Uranium	3.41E+03	9.29E+02	9.86E+02	0.45		0.43		U	0.45		U	0.46		U	0.409		U	0.634		U	0.59
Zinc	3.41E+05	9.29E+04	1.36E+04	14.2		0.43	7.87		0.45	19.8		0.46	17.8		0.409	38.7		0.634	11.6		0.59
Anions (mg/kg)	.		•	<u> </u>																	
Chloride				8.03		4.98	31.6		4.92	33.3		4.99	47.6		5	81.1		6.38	37.5		6.07
Fluoride (F-, Anion)	4.54E+04	1.24E+04	8.37E+00	5.76		1	8.7		0.98	3.92		1	1.91		1	15.4		1.28	8.01		1.21
Nitrate-N	1.82E+06	4.96E+05	3.35E+02	0.896	J	1		U	0.98		U	1		U	1	0.804	J	1.28		U	1.21
Nitrite	1.14E+05	3.10E+04	2.09E+01		U	1		U	0.98		U	1		U	1		U	1.28	1	U	1.21
Sulfate				82.1		4.98	891		4.92	310		4.99	254		5	777		6.38	3960		60.7
Cyanide	6.81E+02	1.86E+02	4.41E+00		U	1.96		U	1.82		U	1.96		U	1.9		U	2.52		U	2.2
Radium (pci/g)	•		•	_												_			-		
Radium-226				1.75		0.61	0.66		0.46		LT,G		0.78	LT,G	0.37	1.55	G	0.57	0.5		0.46
Radium-228				1.4	M3,G	1.05		U,G	0.75	1.06	G,TI	0.6		U,G	0.85		U,G	0.93		Ū	0.82

First Quarter 2013 Interim Report

		Boring l	ocation (Depth) Depth:	MW-	·116 (1	0)		116 (15 15	5)	MW-	116 (20 20	0)	MW	/-116 (2 25	25)	MV	V-117	(1)	MV	V-117 (5)
			Date:	1/3	0/2013	<u> </u>		0/2013		1/3	<u>20</u> 0/2013		1/	30/201	3	1/	31/20	13	1/3	31/2013	3
Analyte	Industrial/ Occupational SSL (mg/kg)	Construction Worker SSL (mg/kg)	DAF 20 SSL (mg/kg)	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
TPH (mg/kg)				-																·	
Gasoline Range Organics				NA			NA			NA				U	0.05		U	0.065	NA	1	
Diesel Range Organics	1.00E+03			NA			NA			NA				U	1.7		U	2.2	NA	1	
Motor Oil Range Organics	1.00E+03			NA			NA			NA				U	3.4		U	4.4	NA	1	
VOCs (mg/kg)	•				•	•	-	•	•	-	•	<u>l</u>	•	•	•			•	_	-	
1,1,1-Trichloroethane	7.89E+04	1.48E+04	5.82E+01	NA			NA			NA				U	0.005		U	0.0065	NA		
1,1,2,2-Tetrachloroethane	4.35E+01	2.21E+02	4.26E-03	NA			NA			NA				U	0.005		U	0.0065	NA	1	
1,1,2-Trichloroethane	1.33E+01	4.72E+02	2.23E-03	NA			NA			NA				U	0.005		U	0.0065	NA	1	
1,1-Dichloroethane	3.59E+02	1.70E+03	1.20E-01	NA			NA			NA				U	0.005		U	0.0065	NA	1	
1,1-Dichloroethene	2.29E+03	4.32E+02	2.32E+00	NA			NA			NA				U	0.005		U	0.0065	NA	1	
1,2-Dibromoethane	3.22E+00	1.60E+01	3.08E-04	NA			NA			NA				U	0.005		U	0.0065	NA		
1,2-Dichloroethane	4.35E+01	5.87E+01	7.11E-03	NA			NA			NA				U	0.005		U	0.0065	NA		
Benzene	8.47E+01	1.38E+02	3.45E-02	NA			NA			NA				U	0.005		U	0.0065	NA		
Carbon Tetrachloride	5.98E+01	2.26E+02	3.21E-02	NA			NA			NA				U	0.005		U	0.0065	NA		
Chloroform	3.27E+01	1.54E+02	9.18E-03	NA			NA			NA				U	0.005		U	0.0065	NA		
Dichloromethane	4.70E+03	1.12E+03	8.24E-01	NA			NA			NA				U	0.01	0.0086	J	0.0086	NA		
Ethylbenzene	3.78E+02	1.83E+03	2.60E-01	NA			NA			NA				U	0.005		U	0.0065	NA		
Tetrachloroethene	3.66E+01	2.12E+02	8.61E-03	NA			NA			NA				U	0.005		U	0.0065	NA		
Toluene	5.77E+04	1.34E+04	2.53E+01	NA			NA			NA				U	0.005		U	0.0065	NA		
Total Xylenes	3.98E+03	7.43E+02	3.13E+00	NA			NA			NA				U	0.015		U	0.019	NA		
Trichloroethene	4.13E+01	7.68E+00	2.11E-02	NA			NA			NA				U	0.005		U	0.0065	NA		
Vinyl Chloride	2.61E+01	1.49E+02	1.08E-03	NA			NA			NA				U	0.002		U	0.0026	NA		
PAHs (mg/kg)																					
1-Methylnaphthalene				NA			NA			NA				U	0.0066		U	0.0085	NA		
2-Methylnaphthalene				NA			NA			NA				U	0.0066		U	0.0085	NA		
Benzo(a)Pyrene	2.34E+00	2.13E+01	5.20E-01	NA			NA			NA				U	0.0066		U	0.0085	NA		
Naphthalene	2.41E+02	1.58E+02	7.13E-02	NA			NA			NA				U	0.0066		U	0.0085	NA		

First Quarter 2013 Interim Report Navajo Refining Company, Artesia Refinery, New Mexico

		Boring I	Location (Depth)	MW	-117 (10	0)	MW-	-117 (15)	MW-	-117 (2	20)	M	IW-117 (25)	M	W-118	(1)	MW	-118 (5)
			Depth:		10			15			20			25			1			5	
			Date:	1/3	31/2013		1/3	31/201	3	1/3	31/201	3		1/31/201	3		2/4/201	3	2/	4/2013	
Analyte	Industrial/ Occupational SSL (mg/kg)	Construction Worker SSL (mg/kg)	DAF 20 SSL (mg/kg)	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Moisture (%)				00.4		T 0 04	00.0		0.04	20.7		0.04	04		0.04	05.7		0.04	04.0	1	0.04
Percent Moisture				26.4		0.01	23.9		0.01	20.7		0.01	21		0.01	25.7		0.01	34.8		0.01
Metals (mg/kg) Aluminum	4.425.00	4.075.04	4.405.00	6140	I	133	5400	1	121	11200		121	8180		126	14300		117	8560	1	143
Arsenic	1.13E+06	4.07E+04	1.10E+06	2.48		0.67	7.29		0.61	1.12		0.6	0.526	1	0.631	4.08		0.585	3.53		0.72
Barium	1.77E+01	5.30E+01	2.62E-01	49.2		0.67	8.33		0.61	23.2		0.6	6.58	J	0.631	105		0.585	85.6		0.72
Boron	2.23E+05 2.27E+05	4.35E+03 4.65E+04	6.03E+03 4.80E+02	5.92		6.65	2.96	1	3.03	2.45		3.01	0.36	U	3.16	7.25		5.85	7.21		7.15
Cadmium				0.195	J	0.67	2.90	U	0.61	0.234	J	0.6		U	0.631	0.353	1	0.585	0.13		0.72
Calcium	8.97E+02	2.77E+02 	2.75E+01 	119000	J	6650	26700	0	6070	95400	J	6030	2810	U	63.1	55400	J	5850	115000	J	7150
Chromium	1.70E+06	4.65E+05	1.97E+09	8.28		0.67	6.81		0.61	11.9		0.6	7.67		0.631	14.1		0.585	8.08		0.72
Cobalt	1.70=+00		1.97 = +09	2.23		0.67	3.54	1	0.61	3.43		0.6	2.05		0.631	4.33		0.585	2.15		0.72
	4.54E+04	1.24E+04	1.03E+03	2.23		0.67	2.2	1	0.61	4.44		0.6	3.35		0.631	21.3		0.585	3.19		0.72
Copper Iron				5340		66.5	8050	1	60.7	6600		60.3	4590		63.1	9280		58.5	5220		71.5
Lead	7.95E+05	2.17E+05 8.00E+02	1.29E+04	4.46		0.67	3.04		0.61	7.99		0.6	4.74		0.631	295		58.5	3.67		0.72
	8.00E+02		4.445.02	69.2		0.67	91		0.61	7.99		0.6	37.5		0.631	293		58.5	62.9		0.72
Manganese Mercury	2.67E+04	4.40E+02	1.14E+03	0.00201		0.67	0.0011	<u> </u>	0.61	0.0033		0.6	0	U	0.0044	0.0401		0.0046	0.00739		0.72
Molybdenum	7.36E+01 5.68E+03	1.36E+01 1.55E+03	6.54E-01 7.40E+01	0.00201	J	0.67	0.606	J	0.61	0.0033	U	0.6	U	U	0.631	0.627		0.0046	0.00739		0.01
Nickel				3.85	J	0.67	5.09	-	0.61	6.31	0	0.6	4.4	U	0.631	9.1		0.585	4.78	J	0.72
Potassium	2.25E+04	6.19E+03 	9.53E+02 	1310		66.5	1230	1	60.7	1760		60.3	1490		63.1	3020		58.5	1610		71.5
Selenium			1.93E+01	0.422		0.67	1230	U	0.61	0.699		0.6	1490	U	0.631	0.652		0.585	0.286		0.72
Silver	5.68E+03 5.68E+03	1.55E+03	3.13E+01	0.422	IJ	0.67		U	0.61	0.033	IJ	0.6		U	0.631	0.032	U	0.585	0.200	IJ	0.72
Sodium	5.00E+U3 	1.55E+03 	3.13E+01	119	0	133	154	0	60.7	208	0	60.3	153	U	63.1	152	U	58.5	248	0	71.5
Uranium	3.41E+03	9.29E+02	9.86E+02	119	U	0.67	134	U	0.61	200	U	0.6	133	U	0.631	132	U	0.585	0.953		0.72
Zinc	3.41E+05	9.29E+02 9.29E+04	9.86E+02 1.36E+04	12.2		0.67	10.1		0.61	22		0.6	14.5	U	0.631	37.5	U	0.585	13.5		0.72
Anions (mg/kg)	3.41L+03	3.23L+04	1.50L+04	12.2		0.07	10.1		0.01	22		0.0	14.5		0.031	37.3		0.505	13.3		0.72
Chloride				28.7		6.76	33.5		6.54	24.4		6.29	26.3		6.29	34		6.08	56.9		7.67
Fluoride (F-, Anion)	4.54E+04	1.24E+04	8.37E+00	6.49		1.35	5.93		1.31	5.11		1.26	5.18		1.26	5.27		1.22	4.29		1.53
Nitrate-N	1.82E+06	4.96E+05	3.35E+02	0.10	U	1.35		U	1.31		.J		0.566	.J	1.26	0.27	U	1.22	1.20	U	1.53
Nitrite	1.14E+05	3.10E+04	2.09E+01		U	1.35		U	1.31	50	U	1.26	0.000	U	1.26		U	1.22		U	1.53
Sulfate	1.146+05	3.10L+04 	2.09L+01	1790	 	67.6		†	65.4	349	Ť	6.29	396		6.29	3100		60.8	10700		76.7
Cyanide	6.81E+02	1.86E+02	4.41E+00	1.55	U	2.53		U	2.53		U	2.45	300	U	2.23	5.00	U	2.5		U	2.83
Radium (pci/g)	5.5.2.02														0			0			55
Radium-226				0.68	LT,TG	0.38		U.G	0.44	0.87	LT,G	0.48	0.51	LT,G	0.37	1.5	G	0.58	1.64	G	0.55
Radium-228						0.81			0.73		U,G	0.75	0.82	LT,G,TI			NQ, G			NQ, G	

Table 4 - Summary of Soil Sampling Analytical Results First Quarter 2013 Interim Report

		Boring L	ocation (Depth)	MW-	-117 (10))	MW-	·117 (′	15)	MW-	-117 (2	20)	I	IW-117 (25)	M	W-118	(1)	MW	/-118 (5))
			Depth:		10			15			20			25			1			5	
			Date:	1/3	1/2013		1/3	1/201	3	1/3	31/2013	3		1/31/201	3		2/4/201	3	2/	4/2013	
Analyte	Industrial/ Occupational SSL (mg/kg)	Construction Worker SSL (mg/kg)	DAF 20 SSL (mg/kg)	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
TPH (mg/kg)				-																	
Gasoline Range Organics				NA			NA			NA				U	0.063		U	0.067	NA		
Diesel Range Organics	1.00E+03			NA			NA			NA				U	2.1		U	2.3	NA		
Motor Oil Range Organics	1.00E+03			NA			NA			NA				U	4.3		U	4.6	NA		
VOCs (mg/kg)	•						-			8			-			<u> </u>					
1,1,1-Trichloroethane	7.89E+04	1.48E+04	5.82E+01	NA			NA			NA				U	0.0063		U	0.0067	NA		
1,1,2,2-Tetrachloroethane	4.35E+01	2.21E+02	4.26E-03	NA			NA			NA				U	0.0063		U	0.0067	NA		
1,1,2-Trichloroethane	1.33E+01	4.72E+02	2.23E-03	NA			NA			NA				U	0.0063		U	0.0067	NA		
1,1-Dichloroethane	3.59E+02	1.70E+03	1.20E-01	NA			NA			NA				U	0.0063		U	0.0067	NA		
1,1-Dichloroethene	2.29E+03	4.32E+02	2.32E+00	NA			NA			NA				U	0.0063		U	0.0067	NA		
1,2-Dibromoethane	3.22E+00	1.60E+01	3.08E-04	NA			NA			NA				U	0.0063		U	0.0067	NA		1
1,2-Dichloroethane	4.35E+01	5.87E+01	7.11E-03	NA			NA			NA				U	0.0063		U	0.0067	NA		
Benzene	8.47E+01	1.38E+02	3.45E-02	NA			NA			NA				U	0.0063		U	0.0067	NA		
Carbon Tetrachloride	5.98E+01	2.26E+02	3.21E-02	NA			NA			NA				U	0.0063		U	0.0067	NA		
Chloroform	3.27E+01	1.54E+02	9.18E-03	NA			NA			NA				U	0.0063		U	0.0067	NA		
Dichloromethane	4.70E+03	1.12E+03	8.24E-01	NA			NA			NA			0.007	J	0.0069		U	0.0083	NA		
Ethylbenzene	3.78E+02	1.83E+03	2.60E-01	NA			NA			NA				U	0.0063		U	0.0067	NA		
Tetrachloroethene	3.66E+01	2.12E+02	8.61E-03	NA			NA			NA				U	0.0063		U	0.0067	NA		
Toluene	5.77E+04	1.34E+04	2.53E+01	NA			NA			NA				U	0.0063		U	0.0067	NA		
Total Xylenes	3.98E+03	7.43E+02	3.13E+00	NA			NA			NA				U	0.019		U	0.02	NA		
Trichloroethene	4.13E+01	7.68E+00	2.11E-02	NA			NA			NA				U	0.0063		U	0.0067	NA		
Vinyl Chloride	2.61E+01	1.49E+02	1.08E-03	NA			NA			NA				כ	0.0025		U	0.0027	NA		
PAHs (mg/kg)																					
1-Methylnaphthalene				NA			NA			NA				U	0.0083		U	0.0088	NA		
2-Methylnaphthalene				NA			NA			NA				U	0.0083		U	0.0088	NA		
Benzo(a)Pyrene	2.34E+00	2.13E+01	5.20E-01	NA			NA			NA				U	0.0083		U	0.0088	NA		
Naphthalene	2.41E+02	1.58E+02	7.13E-02	NA			NA			NA				U	0.0083		U	0.0088	NA		

First Quarter 2013 Interim Report

		Boring I	Location (Depth)	MV	V-118 (10))	MW-	-118 (1	15)	MW-1	18 (20	0)	M۱	N-118	(25)	M	W-119	(1)	MW-	-119 (5)	\neg
		_	Depth:		10			15			20			25			1			5	
			Date:	2	2/4/2013		2/4	4/2013	3	2/4/	2013	-	2	2/4/201	13	2	2/4/201	3	2/4	1/2013	
Analyte	Industrial/ Occupational SSL (mg/kg)	Construction Worker SSL (mg/kg)	DAF 20 SSL (mg/kg)	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual R	L
Moisture (%) Percent Moisture	1		<u> </u>	20.2		0.01	27.2		0.01	17.9		0.04	21	1	0.01	22.2	<u> </u>	0.01	22	Τ Το	04
Metals (mg/kg)				29.3		0.01	21.2	1	0.01	17.9		0.01	21		0.01	22.3		0.01	23	0.0	JI
Aluminum	1.13E+06	4.07E+04	1.10E+06	7230		127	2930		127	3230		118	9540		119	13800		119	13300	10	00
Arsenic	1.77E+01	5.30E+01	2.62E-01	2.53		0.64	<i>0.76</i>		3.17	1.02	J	2.94	3.21		1.19	3.39		1.19	4.21	1.0	
Barium	2.23E+05	4.35E+03	6.03E+03	84		0.64	8.93	J	3.17	6.44	J	2.94	32.6		1.19	89.9		1.19	108	1.0	
Boron	2.27E+05	4.65E+04	4.80E+02	4.16	1	6.35	0.33	П	15.8	0.44	U	14.7	32.0	U	5.95	6.94		5.94	5.63	5.4	
Cadmium	8.97E+02	2.77E+02	2.75E+01	0.172	.I	0.64	0.335	J	3.17	0.457	J	2.94	0.22	J	1.19	0.483	.l	1.19	0.295	J 1.0	
Calcium	0.97 L+02	2.772+02	2.73L+01	187000		6350		1	6330	249000	۳	5880	99200	 	5950	77800		5940	103000	543	
Chromium	1.70E+06	4.65E+05	1.97E+09	7.53		0.64	3.62		3.17	3.22		2.94	9.08		1.19	13		1.19	11.1	1.0	
Cobalt				1.81		0.64	0.487	J	3.17	0.982	J	2.94	2.15		1.19	4.37		1.19	3.77	1.0	_
Copper	4.54E+04	1.24E+04	1.03E+03	3.38		0.64	01101	U	3.17	0.614	J	2.94	4.53		1.19	12.1		1.19	5.81	1.0	
Iron	7.95E+05	2.17E+05	1.29E+04	4430		63.5	1620	 	317	1960		294	7200		119	8910		119	8220	10	
Lead	8.00E+02	8.00E+02	1.202101	6.52		1.27	2.99	J	3.17	3.71		2.94	4.81		1.19	61		1.19	6.75	1.0	
Manganese	2.67E+04	4.40E+02	1.14E+03	98.8		0.64	36.3		3.17	58.4		2.94	95.7		1.19	131		1.19	204	1.0	
Mercury	7.36E+01	1.36E+01	6.54E-01	0.00351	J	_	0.0013	J		0.000827	J	0	0.0028	J	0.0042	0.0207		0.0044	0.00731	+	0
Molybdenum	5.68E+03	1.55E+03	7.40E+01	0.464	J	0.64			0.63		U	2.94	0.545	J	1.19	0.593	J	1.19	0.743	J 1.0	09
Nickel	2.25E+04	6.19E+03	9.53E+02	4.37		0.64	1.58	J	3.17	2.51	J	2.94	7.1		1.19	9.34		1.19	8.08	1.0	09
Potassium				1530		63.5	561		63.3	603		294	1740		119	3310		119	2680	10	09
Selenium	5.68E+03	1.55E+03	1.93E+01	0.344	J	0.64	1.49	J	3.17	1.38	J	2.94	0.724	J	1.19	1.18	J	1.19	0.895	J 1.0	09
Silver	5.68E+03	1.55E+03	3.13E+01		U	0.64		U	0.63		U	2.94		U	1.19		U	1.19		U 1.0	09
Sodium				158		63.5	90.4		63.3	73.1	J	294	226		119	149		119	131	10)9
Uranium	3.41E+03	9.29E+02	9.86E+02		U	0.64		U	0.63		U	2.94		U	1.19		U	1.19		U 1.0	09
Zinc	3.41E+05	9.29E+04	1.36E+04	13.7		0.64	6.21		3.17	6.61		2.94	22.8		1.19	56.8		1.19	27.1	1.0	09
Anions (mg/kg)												•				•				•	
Chloride				74.6		6.83	52		6.08	66.2		5.49	NA			NA			29.2	6.0	06
Fluoride (F-, Anion)	4.54E+04	1.24E+04	8.37E+00	3.8		1.37	8.59		1.22	7.71		1.1	NA			NA			12.3	1.2	21
Nitrate-N	1.82E+06	4.96E+05	3.35E+02		U	1.37		U	1.22		U	1.1	NA			NA				U 1.2	21
Nitrite	1.14E+05	3.10E+04	2.09E+01		U	1.37		U	1.22		U	1.1	NA			NA				U 1.2	
Sulfate				3020		68.3	777		6.08	681		5.49	NA			NA			1680	60	
Cyanide	6.81E+02	1.86E+02	4.41E+00		U	2.67		U	2.51		U	2.29	NA			NA				U 2.3	36
Radium (pci/g)																					
Radium-226				0.62	LT, G, TI				0.36				0.74			1.41	G	0.45	1.14	G 0.4	
Radium-228					U,G	0.74		J U,G	0.57		U,G	0.89	1.04	[G, Tl	0.63		U,G	0.9		U,G 0.6	ō7

First Quarter 2013 Interim Report

		Boring L	_ocation (Depth)	MV	V-118 (10)		MW-	-118 (1	15)	MW-1	18 (20	0)	MV	V-118	(25)	M	W-119	9 (1)	MW-	-119 (5	5)
		_	Depth:		10			15			20			25			1			5	
			Date:	2	2/4/2013		2/4	4/2013	3	2/4	/2013		2	2/4/20	13	2	2/4/20	13	2/4	4/2013	
Analyte	Industrial/ Occupational SSL (mg/kg)	Construction Worker SSL (mg/kg)	DAF 20 SSL (mg/kg)	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
TPH (mg/kg)																					
Gasoline Range Organics				NA			NA			NA				U	0.063		U	0.064	NA		
Diesel Range Organics	1.00E+03			NA			NA			NA				U	2.1		U	2.2	NA		
Motor Oil Range Organics	1.00E+03			NA			NA			NA				U	4.3	1.1	J	1.1	NA		
VOCs (mg/kg)	•			1	•		_						•					•			
1,1,1-Trichloroethane	7.89E+04	1.48E+04	5.82E+01	NA			NA			NA				U	0.0063		U	0.0064	NA		
1,1,2,2-Tetrachloroethane	4.35E+01	2.21E+02	4.26E-03	NA			NA			NA				U	0.0063		U	0.0064	NA		
1,1,2-Trichloroethane	1.33E+01	4.72E+02	2.23E-03	NA			NA			NA				U	0.0063		U	0.0064	NA		
1,1-Dichloroethane	3.59E+02	1.70E+03	1.20E-01	NA			NA			NA				U	0.0063		U	0.0064	NA		
1,1-Dichloroethene	2.29E+03	4.32E+02	2.32E+00	NA			NA			NA				U	0.0063		U	0.0064	NA		
1,2-Dibromoethane	3.22E+00	1.60E+01	3.08E-04	NA			NA			NA				U	0.0063		U	0.0064	NA		
1,2-Dichloroethane	4.35E+01	5.87E+01	7.11E-03	NA			NA			NA				U	0.0063		U	0.0064	NA		
Benzene	8.47E+01	1.38E+02	3.45E-02	NA			NA			NA				U	0.0063		U	0.0064	NA		
Carbon Tetrachloride	5.98E+01	2.26E+02	3.21E-02	NA			NA			NA				U	0.0063		U	0.0064	NA		
Chloroform	3.27E+01	1.54E+02	9.18E-03	NA			NA			NA				U	0.0063		U	0.0064	NA		
Dichloromethane	4.70E+03	1.12E+03	8.24E-01	NA			NA			NA				U	0.0083		U	0.013	NA		
Ethylbenzene	3.78E+02	1.83E+03	2.60E-01	NA			NA			NA				U	0.0063		U	0.0064	NA		
Tetrachloroethene	3.66E+01	2.12E+02	8.61E-03	NA			NA			NA				U	0.0063		U	0.0064	NA		
Toluene	5.77E+04	1.34E+04	2.53E+01	NA			NA			NA				U	0.0063		U	0.0064	NA		
Total Xylenes	3.98E+03	7.43E+02	3.13E+00	NA			NA			NA				U	0.019		U	0.019	NA		
Trichloroethene	4.13E+01	7.68E+00	2.11E-02	NA			NA			NA				U	0.0063		U	0.0064	NA		
Vinyl Chloride	2.61E+01	1.49E+02	1.08E-03	NA			NA			NA				U	0.0025		U	0.0026	NA		
PAHs (mg/kg)																					
1-Methylnaphthalene				NA			NA			NA				U	0.0083		U	0.0085	NA		
2-Methylnaphthalene				NA			NA			NA				U	0.0083		U	0.0085	NA		
Benzo(a)Pyrene	2.34E+00	2.13E+01	5.20E-01	NA			NA			NA			0.0026	J	0.0026		U	0.0085	NA		
Naphthalene	2.41E+02	1.58E+02	7.13E-02	NA			NA			NA				U	0.0083		U	0.0085	NA		i

Table 4 - Summary of Soil Sampling Analytical Results First Quarter 2013 Interim Report

		Boring I	ocation (Depth)	MW	-119 (10)	MW-	119 (1	5)	MW-	119 (2	0)	M\	W-119 (2	5)	RO	-SB-1	(1)
			Depth:		10			15			20			25			1	
			Date:	2/	/4/2013	•	2/4	/2013		2/4	1/2013			2/4/2013		1/	31/201	3
Analyte	Industrial/ Occupational SSL (mg/kg)	Construction Worker SSL (mg/kg)	DAF 20 SSL (mg/kg)	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Moisture (%)					•													
Percent Moisture				24.8		0.01	26		0.01	20.7		0.01	19.3		0.01	17.7		0.01
Metals (mg/kg)					•													
Aluminum	1.13E+06	4.07E+04	1.10E+06	9390		126	5700		134	10300		120	11600		123	10800		117
Arsenic	1.77E+01	5.30E+01	2.62E-01	6.34		1.26	2.98	J	3.34	2.8		0.6	2.38		1.23	4.07		0.583
Barium	2.23E+05	4.35E+03	6.03E+03	50.7		1.26	47.3		3.34	208		0.6	18.2		1.23	149		0.583
Boron	2.27E+05	4.65E+04	4.80E+02	6.02	J	6.3	11.9	J	16.7	4.44		3	6.19		6.13	6.67		2.92
Cadmium	8.97E+02	2.77E+02	2.75E+01	0.167	J	1.26		U	3.34	0.188	J	0.6	0.218	J	1.23	0.266	J	0.583
Calcium				89200		6300	246000		6680	65300		5990	124000		6130	105000		5830
Chromium	1.70E+06	4.65E+05	1.97E+09	9.37		1.26	4.79		3.34	8.86		0.6	9.42		1.23	10.6		0.583
Cobalt				3.84		1.26	2.05	J	3.34	2.77		0.6	4.83		1.23	4.17		0.583
Copper	4.54E+04	1.24E+04	1.03E+03	4.42		1.26	2.39	J	3.34	3.91		0.6	4.7		1.23	8.25		0.583
Iron	7.95E+05	2.17E+05	1.29E+04	7850		126	4080		334	6080		59.9	8790		123	8020		58.3
Lead	8.00E+02	8.00E+02		6.14		1.26	2.84	J	3.34	4.36		0.6	5.31		1.23	10.6		0.583
Manganese	2.67E+04	4.40E+02	1.14E+03	252		1.26	523		3.34	88.8		0.6	184		1.23	236		58.3
Mercury	7.36E+01	1.36E+01	6.54E-01	0.00912		0	0.00611		0	0.00501		0	0.00225	J	0.0042	0.00979		0.0043
Molybdenum	5.68E+03	1.55E+03	7.40E+01	0.858	J	1.26	2.16	J	3.34	0.302	J	0.6		U	1.23	0.495	J	0.583
Nickel	2.25E+04	6.19E+03	9.53E+02	9.28		1.26	8.56		3.34	6.69		0.6	8.83		1.23	8.27		0.583
Potassium				2500		126	1280		334	1650		59.9	2210		123	2690		58.3
Selenium	5.68E+03	1.55E+03	1.93E+01	0.644	J	1.26	1.32	J	3.34	0.62		0.6	0.663	J	1.23	0.655		0.583
Silver	5.68E+03	1.55E+03	3.13E+01		U	1.26		U	3.34		U	0.6		U	1.23		U	0.583
Sodium				134		126		U	334	130		59.9	140		123	132		58.3
Uranium	3.41E+03	9.29E+02	9.86E+02		U	1.26		U	3.34		U	0.6		U	1.23		U	0.583
Zinc	3.41E+05	9.29E+04	1.36E+04	21.7		1.26	11.8		3.34	19.7		0.6	23.2		1.23	31.7		0.583
Anions (mg/kg)																		
Chloride				22.6		6.07	18.9		6.39	33.4		5.46	34.4		5.66	6.56		6.06
Fluoride (F-, Anion)	4.54E+04	1.24E+04	8.37E+00	5.94		1.21	5.87		1.28	4.97		1.09	3.28		1.13	16.4		1.21
Nitrate-N	1.82E+06	4.96E+05	3.35E+02		U	1.21		U	1.28		U	1.09		U	1.13		U	1.21
Nitrite	1.14E+05	3.10E+04	2.09E+01		U	1.21		U	1.28		U	1.09		U	1.13		U	1.21
Sulfate				1080		6.07	1310		6.39	849		5.46	495		5.66	204		6.06
Cyanide	6.81E+02	1.86E+02	4.41E+00		U	2.58		U	2.58		U	2.4		U	0.57		U	2.36
Radium (pci/g)	•					•		•	•		•							
Radium-226				1.44	G	0.55	0.56	LT,G		1.07		0.48	0.66	LT,G,TI	0.64	1.32	G	0.46
Radium-228				0.8	LT,G,TI	0.68		U,G	0.97	0.9	LT,G	0.65		U,G	0.72		U,G	0.9

First Quarter 2013 Interim Report

		Boring L	ocation (Depth)	MW	-119 (10)	MW-	119 (1	5)	MW-	119 (20	0)	M	W-119 (2	25)	RO	-SB-1	(1)
			Depth:		10			15			20			25			1	
			Date:	2/	4/2013		2/4	1/2013		2/4	/2013			2/4/2013	3	1/	31/20	13
Analyte	Industrial/ Occupational SSL (mg/kg)	Construction Worker SSL (mg/kg)	DAF 20 SSL (mg/kg)	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
TPH (mg/kg)														•				
Gasoline Range Organics				NA			NA			NA				U	0.062		U	0.061
Diesel Range Organics	1.00E+03			NA			NA			NA				U	2.1		U	2.1
Motor Oil Range Organics	1.00E+03			NA			NA			NA				U	4.2		U	4.1
VOCs (mg/kg)		•			-	<u>-</u>	-		<u>-</u>	-	-		-	•	•		-	•
1,1,1-Trichloroethane	7.89E+04	1.48E+04	5.82E+01	NA			NA			NA				U	0.0062		U	0.0061
1,1,2,2-Tetrachloroethane	4.35E+01	2.21E+02	4.26E-03	NA			NA			NA				U	0.0062		U	0.0061
1,1,2-Trichloroethane	1.33E+01	4.72E+02	2.23E-03	NA			NA			NA				U	0.0062		U	0.0061
1,1-Dichloroethane	3.59E+02	1.70E+03	1.20E-01	NA			NA			NA				U	0.0062		U	0.0061
1,1-Dichloroethene	2.29E+03	4.32E+02	2.32E+00	NA			NA			NA				U	0.0062		U	0.0061
1,2-Dibromoethane	3.22E+00	1.60E+01	3.08E-04	NA			NA			NA				U	0.0062		U	0.0061
1,2-Dichloroethane	4.35E+01	5.87E+01	7.11E-03	NA			NA			NA				U	0.0062		U	0.0061
Benzene	8.47E+01	1.38E+02	3.45E-02	NA			NA			NA				U	0.0062		U	0.0061
Carbon Tetrachloride	5.98E+01	2.26E+02	3.21E-02	NA			NA			NA				U	0.0062		U	0.0061
Chloroform	3.27E+01	1.54E+02	9.18E-03	NA			NA			NA				U	0.0062		U	0.0061
Dichloromethane	4.70E+03	1.12E+03	8.24E-01	NA			NA			NA				U	0.012	0.007	J	0.0070
Ethylbenzene	3.78E+02	1.83E+03	2.60E-01	NA			NA			NA				U	0.0062		U	0.0061
Tetrachloroethene	3.66E+01	2.12E+02	8.61E-03	NA			NA			NA				U	0.0062		U	0.0061
Toluene	5.77E+04	1.34E+04	2.53E+01	NA			NA			NA				U	0.0062		U	0.0061
Total Xylenes	3.98E+03	7.43E+02	3.13E+00	NA			NA			NA				U	0.019		U	0.018
Trichloroethene	4.13E+01	7.68E+00	2.11E-02	NA			NA			NA				U	0.0062		U	0.0061
Vinyl Chloride	2.61E+01	1.49E+02	1.08E-03	NA			NA			NA				U	0.0025		U	0.0024
PAHs (mg/kg)																		
1-Methylnaphthalene				NA			NA			NA				U	0.0082	0.0074	J	0.0074
2-Methylnaphthalene				NA			NA			NA				U	0.0082	0.008	J	0.0080
Benzo(a)Pyrene	2.34E+00	2.13E+01	5.20E-01	NA			NA			NA				U	0.0082		U	0.008
Naphthalene	2.41E+02	1.58E+02	7.13E-02	NA			NA			NA				U	0.0082		U	0.008

Table 4 - Summary of Soil Sampling Analytical Results First Quarter 2013 Interim Report

		Boring I	Location (Depth)	RO	-SB-1 (5)		RO-	SB-1 (10	0)	RO-S	B-1 (1	5)	RO-	SB-1 (20)	RO-S	SB-1 ((25)
			Depth:		5			10			15			20			25	
			Date:	1/	31/2013		1/3	31/2013	Ţ	2/1	/2013	1	2/	1/2013		2/	1/2013	3
Analyte	Industrial/ Occupational SSL (mg/kg)	Construction Worker SSL (mg/kg)	DAF 20 SSL (mg/kg)	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Moisture (%)			T						1		1						ī	
Percent Moisture				22.7		0.01	31		0.01	23.5		0.01	20.3		0.01	20.9		0.01
Metals (mg/kg)								_			r			1			r	100
Aluminum	1.13E+06	4.07E+04	1.10E+06	7110		122	4110		127	8520		110	6090		121	18600		124
Arsenic	1.77E+01	5.30E+01	2.62E-01	3.42		0.61	2.03		0.64	1.68		0.55	2.91		0.61	3.12		0.62
Barium	2.23E+05	4.35E+03	6.03E+03	180		0.61	186		0.64	95.7		0.55	268		60.6	16.5		0.62
Boron	2.27E+05	4.65E+04	4.80E+02	4.3		3.06	4.47	J	6.35	5.8		5.49	3.56		3.03	3.76		3.1
Cadmium	8.97E+02	2.77E+02	2.75E+01	0.085	J	0.61	0.103	J	0.64	0.262	J	0.55	0.245	J	0.61		U	0.62
Calcium				87900		6120	184000		6350	204000		5490	252000		6060	11500		62.1
Chromium	1.70E+06	4.65E+05	1.97E+09	6.49		0.61	5.94		0.64	6.96		0.55	6.61		0.61	9.2		0.62
Cobalt				2.59		0.61	1.28		0.64	3.65		0.55	1.2		0.61	6.52		0.62
Copper	4.54E+04	1.24E+04	1.03E+03	2.64		0.61	2.52		0.64	3.94		0.55	2.38		0.61	6.56		0.62
Iron	7.95E+05	2.17E+05	1.29E+04	4780		61.2	2390		63.5	5050		54.9	3230		60.6	9750		62.1
Lead	8.00E+02	8.00E+02		3.75		0.61	2.02		0.64	7.03		0.55	4.04		0.61	12		0.62
Manganese	2.67E+04	4.40E+02	1.14E+03	55.2		0.61	32.3		0.64	76.1		0.55	35.3		0.61	193		0.62
Mercury	7.36E+01	1.36E+01	6.54E-01	0.00395	J	0	0.00167	J	0	0.00335	J	0	0.00102	J	0	0.0274		0
Molybdenum	5.68E+03	1.55E+03	7.40E+01	0.205	J	0.61		U	0.64	0.165	J	0.55		U	0.61	0.42	J	0.62
Nickel	2.25E+04	6.19E+03	9.53E+02	4.83		0.61	2.4		0.64	5.53		0.55	3.95		0.61	10.4		0.62
Potassium				1430		61.2	808		63.5	1740		54.9	1250		60.6	3560		62.1
Selenium	5.68E+03	1.55E+03	1.93E+01	0.542	J	0.61	0.276	J	0.64	0.943		0.55	0.62		0.61	0.414	J	0.62
Silver	5.68E+03	1.55E+03	3.13E+01		U	0.61		U	0.64		U	0.55		U	0.61		U	0.62
Sodium				183		61.2	125		63.5	123		54.9	101		60.6	105		62.1
Uranium	3.41E+03	9.29E+02	9.86E+02		U	0.61		U	0.64		U	0.55		U	0.61		U	0.62
Zinc	3.41E+05	9.29E+04	1.36E+04	14.4		0.61	9.11		0.64	20		0.55	9.84		0.61	30.7		0.62
Anions (mg/kg)									•									
Chloride				247		6.44	180		7.15	80.6		6.52	71.5		6.18	108		6.27
Fluoride (F-, Anion)	4.54E+04	1.24E+04	8.37E+00	12.5		1.29	21.5		1.43	15.3		1.3	9.85		1.24	14.6		1.25
Nitrate-N	1.82E+06	4.96E+05	3.35E+02	0.515	J	1.29		U	1.43	0.94	J	1.3	0.84	J	1.24		U	1.25
Nitrite	1.14E+05	3.10E+04	2.09E+01		U	1.29		U	1.43		U	1.3		U	1.24		U	1.25
Sulfate				2350		32.2	1900		35.7	832		6.52	703		6.18	851		6.27
Cyanide	6.81E+02	1.86E+02	4.41E+00		U	2.39		U	2.71		U	2.35	0.788	J	2.42		J	2.49
Radium (pci/g)	l .																	
Radium-226				1.09	G	0.54		LT,G,TI	0.58	0.87		0.38		LT,G,TI			G	0.45
Radium-228				1.17	M,G,NQ	1.03		Ú,Ğ			U,G	0.82		NQ,G				0.64

First Quarter 2013 Interim Report

		Boring L	ocation (Depth)	RO	-SB-1 (5)		RO-	SB-1 (10))	RO-S	B-1 (1	5)	RO-	SB-1 (20)	RO-S	SB-1 (2	25)
			Depth:		5			10			15			20			25	
			Date:	1/	31/2013		1/3	31/2013		2/1	/2013		2/	1/2013		2/	1/2013	j
Analyte	Industrial/ Occupational SSL (mg/kg)	Construction Worker SSL (mg/kg)	DAF 20 SSL (mg/kg)	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
TPH (ma/ka)				<u> </u>														
Gasoline Range Organics				NA			NA			NA			NA			NA		
Diesel Range Organics	1.00E+03			NA			NA			NA			NA			NA		
Motor Oil Range Organics	1.00E+03			NA			NA			NA			NA			NA		
VOCs (mg/kg)				-	•	-	-	•	-	-	-	<u>ii</u>				-	-	
1,1,1-Trichloroethane	7.89E+04	1.48E+04	5.82E+01	NA			NA			NA			NA			NA		
1,1,2,2-Tetrachloroethane	4.35E+01	2.21E+02	4.26E-03	NA			NA			NA			NA			NA		
1,1,2-Trichloroethane	1.33E+01	4.72E+02	2.23E-03	NA			NA			NA			NA			NA		
1,1-Dichloroethane	3.59E+02	1.70E+03	1.20E-01	NA			NA			NA			NA			NA		
1,1-Dichloroethene	2.29E+03	4.32E+02	2.32E+00	NA			NA			NA			NA			NA		
1,2-Dibromoethane	3.22E+00	1.60E+01	3.08E-04	NA			NA			NA			NA			NA		
1,2-Dichloroethane	4.35E+01	5.87E+01	7.11E-03	NA			NA			NA			NA			NA		
Benzene	8.47E+01	1.38E+02	3.45E-02	NA			NA			NA			NA			NA		
Carbon Tetrachloride	5.98E+01	2.26E+02	3.21E-02	NA			NA			NA			NA			NA		
Chloroform	3.27E+01	1.54E+02	9.18E-03	NA			NA			NA			NA			NA		
Dichloromethane	4.70E+03	1.12E+03	8.24E-01	NA			NA			NA			NA			NA		
Ethylbenzene	3.78E+02	1.83E+03	2.60E-01	NA			NA			NA			NA			NA		
Tetrachloroethene	3.66E+01	2.12E+02	8.61E-03	NA			NA			NA			NA			NA		
Toluene	5.77E+04	1.34E+04	2.53E+01	NA			NA			NA			NA			NA		
Total Xylenes	3.98E+03	7.43E+02	3.13E+00	NA			NA			NA			NA			NA		
Trichloroethene	4.13E+01	7.68E+00	2.11E-02	NA			NA			NA			NA			NA		
Vinyl Chloride	2.61E+01	1.49E+02	1.08E-03	NA			NA			NA			NA			NA		
PAHs (mg/kg)																		
1-Methylnaphthalene				NA			NA			NA			NA			NA		
2-Methylnaphthalene				NA			NA			NA			NA			NA		
Benzo(a)Pyrene	2.34E+00	2.13E+01	5.20E-01	NA			NA			NA			NA			NA		
Naphthalene	2.41E+02	1.58E+02	7.13E-02	NA			NA			NA			NA			NA		-7

Table 4 - Summary of Soil Sampling Analytical Results First Quarter 2013 Interim Report Navajo Refining Company, Artesia Refinery, New Mexico

		Boring L	ocation (Depth)	RO-S	SB-1 (30))	RO	-SB-1	(35)
			Depth:		30			35	
			Date:	2/	1/2013		2	2/1/201	13
Analyte	Industrial/ Occupational SSL (mg/kg)	Construction Worker SSL (mg/kg)	DAF 20 SSL (mg/kg)	Result	Qual	RL	Result	Qual	RL
Moisture (%)				00.0		0.04	40	l	0.04
Percent Moisture				26.6		0.01	16		0.01
Metals (mg/kg)	4.405.00	4.075.04	4.405.00	7040		121	4000		440
Aluminum	1.13E+06	4.07E+04	1.10E+06	7810		134	4280		113
Arsenic	1.77E+01	5.30E+01	2.62E-01	2.01		0.67	1.82		0.564
Barium	2.23E+05	4.35E+03	6.03E+03	40.7		0.67	72.7		0.564
Boron	2.27E+05	4.65E+04	4.80E+02	3.67		3.35	2.01	J	2.82
Cadmium	8.97E+02	2.77E+02	2.75E+01	0.151	J	0.67	0.0817	J	0.564
Calcium	4 705 00	4.055.05	4.075.00	95500		6690	73200		5640
Chromium	1.70E+06	4.65E+05	1.97E+09	6.41		0.67	4.22		0.564
Cobalt				1.97		0.67	1.87		0.564
Copper	4.54E+04	1.24E+04	1.03E+03	2.72		0.67	1.7		0.564
Iron	7.95E+05	2.17E+05	1.29E+04	4870		66.9	3220		56.4
Lead	8.00E+02	8.00E+02		4.05		0.67	2.92		0.564
Manganese	2.67E+04	4.40E+02	1.14E+03	78.8		0.67	58.1		0.564
Mercury	7.36E+01	1.36E+01	6.54E-01	0.000638	J	0		U	0.0041
Molybdenum	5.68E+03	1.55E+03	7.40E+01	0.22	J	0.67	0.198	J	0.564
Nickel	2.25E+04	6.19E+03	9.53E+02	4.51		0.67	3.34		0.564
Potassium				1450		66.9	932		56.4
Selenium	5.68E+03	1.55E+03	1.93E+01	0.539	J	0.67	0.332	J	0.564
Silver	5.68E+03	1.55E+03	3.13E+01		U	0.67		U	0.564
Sodium				100		66.9	53.7	J	56.4
Uranium	3.41E+03	9.29E+02	9.86E+02		U	0.67		U	0.564
Zinc	3.41E+05	9.29E+04	1.36E+04	14.9		0.67	8.89		0.564
Anions (mg/kg)									
Chloride				134		6.72	46.7		5.87
Fluoride (F-, Anion)	4.54E+04	1.24E+04	8.37E+00	5.24		1.34	5.8		1.17
Nitrate-N	1.82E+06	4.96E+05	3.35E+02		U	1.34		U	1.17
Nitrite	1.14E+05	3.10E+04	2.09E+01		U	1.34		U	1.17
Sulfate				763		6.72	614		5.87
Cyanide	6.81E+02	1.86E+02	4.41E+00		U	2.48	0.672	J	2.24
Radium (pci/g)									
Radium-226				0.56	LT,G,TI	-	0.72	LT	0.38
Radium-228					U,G	0.94		U	0.59

Table 4 - Summary of Soil Sampling Analytical Results First Quarter 2013 Interim Report Navajo Refining Company, Artesia Refinery, New Mexico

		Boring L	ocation (Depth)	RO-S	SB-1 (30))	RO	-SB-1	(35)
			Depth:		30			35	` ,
			Date:	2/	1/2013		2	2/1/201	13
Analyte	Industrial/ Occupational SSL (mg/kg)	Construction Worker SSL (mg/kg)	DAF 20 SSL (mg/kg)	Result	Qual	RL	Result	Qual	RL
TPH (mg/kg)	(0 0/	(5 0/	(5 0/				<u> </u>		
Gasoline Range Organics				NA				U	0.059
Diesel Range Organics	1.00E+03			NA				U	2
Motor Oil Range Organics	1.00E+03			NA				U	4
VOCs (mg/kg)	<u> </u>								
1,1,1-Trichloroethane	7.89E+04	1.48E+04	5.82E+01	NA				U	0.0059
1,1,2,2-Tetrachloroethane	4.35E+01	2.21E+02	4.26E-03	NA				U	0.0059
1,1,2-Trichloroethane	1.33E+01	4.72E+02	2.23E-03	NA				U	0.0059
1,1-Dichloroethane	3.59E+02	1.70E+03	1.20E-01	NA				U	0.0059
1,1-Dichloroethene	2.29E+03	4.32E+02	2.32E+00	NA				U	0.0059
1,2-Dibromoethane	3.22E+00	1.60E+01	3.08E-04	NA				U	0.0059
1,2-Dichloroethane	4.35E+01	5.87E+01	7.11E-03	NA				J	0.0059
Benzene	8.47E+01	1.38E+02	3.45E-02	NA				J	0.0059
Carbon Tetrachloride	5.98E+01	2.26E+02	3.21E-02	NA				J	0.0059
Chloroform	3.27E+01	1.54E+02	9.18E-03	NA				U	0.0059
Dichloromethane	4.70E+03	1.12E+03	8.24E-01	NA			0.0056	J	0.0056
Ethylbenzene	3.78E+02	1.83E+03	2.60E-01	NA				U	0.0059
Tetrachloroethene	3.66E+01	2.12E+02	8.61E-03	NA				U	0.0059
Toluene	5.77E+04	1.34E+04	2.53E+01	NA				U	0.0059
Total Xylenes	3.98E+03	7.43E+02	3.13E+00	NA				U	0.018
Trichloroethene	4.13E+01	7.68E+00	2.11E-02	NA				U	0.0059
Vinyl Chloride	2.61E+01	1.49E+02	1.08E-03	NA				U	0.0024
PAHs (mg/kg)									
1-Methylnaphthalene				NA				U	0.0078
2-Methylnaphthalene				NA				U	0.0078
Benzo(a)Pyrene	2.34E+00	2.13E+01	5.20E-01	NA				U	0.0078
Naphthalene	2.41E+02	1.58E+02	7.13E-02	NA				J	0.0078

Table 4 - Summary of Soil Sampling Analytical Results First Quarter 2013 Interim Report Navajo Refining Company, Artesia Refinery, New Mexico

Notes:

Screening hierarchy is as follows:

Samples from 1 foot depth interval are screened against lower of Ind/Occ SSL or CW SSL.

Samples from >1 to 10 foot depth interval are screened against CW SSL.

Samples from >10 foot depth interval are screened against DAF 20 SSL.

TPH results are screened against the "unknown oil" SSL from Table 6-2, 2012 NMED Risk Assssement Guidance.

Bold, italic font with yellow highlighting indicates a result reported above the appropriate SSL.

RLs shown in italics font with gray highlighting exceed the appropriate SSL for that compound and depth.

Blank cells in the "Results" column indicate a non-detect value for that compound.

Abbreviations:

--- = no SSL available

DAF = dilution attenuation factor

G = sample density differs by more than 15% of LCS density

J = estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).

LCS = laboratory control sample

LT = the sample has a detection above the achieved minimum detectable concentration but below the requested.

mg/kg = milligrams per kilogram

M3 = the requested MDC was not met, but the reported activity is greater than the reported MDC

NA = not applicable

ND = indicates the compound was analyzed for but not detected

NQ = net quantified

PAH = polycyclic aromatic hydrocarbon

pci/g = average picocuries per gram

qual = qualifier

RL = reporting limit

SVOC = semivolatile organic compound

SSL = soil screening level

TI = the analyte is tentatively identified

TPH = total petroleum hydrocarbons

U = Indicates the compound was analyzed for but not detected

Table 5 - Summary of Groundwater Sampling Analytical Results First Quarter 2013 Interim Report Navajo Refining Company, Artesia Refinery, New Mexico

	N	MW-114		MW-115		MW-116		MW-117		MW-118			MW-119			RO Discharge							
		Date:	2	2/3/2013	3		2/3/2013		2,	/3/2013		2	2/3/2013	3	2	/5/2013		2	2/5/2013		2	2/3/2013	
		CGWSL																					
Analyte	CGWSL	Source	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
Metals (mg/L)																							
Aluminum	5.00E+00	20.6.2.3103.C	0.0265		0.01	0.00888	J	0.01	0.00797	J	0.01	0.0289		0.01	0.0146		0.01	0.00994	J	0.01	0.00668	J	0.01
Arsenic	1.00E-02	USEPA MCL	0.00561		0.005	0.00499	J	0.005	0.00274	J	0.005	0.00498	J	0.005	0.011		0.005	0.00294	J	0.005	0.00494	J	0.005
Barium	1.00E+00	20.6.2.3103.A	0.0204		0.005	0.0309		0.005	0.0161		0.005	0.0235		0.005	0.0145		0.005	0.00981		0.005	0.0628		0.005
Boron	7.50E-01	20.6.2.3103.C	0.139		0.1	0.865		0.5	0.22		0.1	0.207		0.1	0.226		0.05	0.0987		0.05	0.143		0.1
Cadmium	5.00E-03	USEPA MCL		U	0.002		U	0.002		U	0.002		U	0.002		U	0.002		U	0.002		U	0.002
Calcium			600		5	518		5	624		10	568		5	563		10	494		10	625		25
Chromium	5.00E-02	20.6.2.3103.A		U	0.005		U	0.005		U	0.005		U	0.005		U	0.005		U	0.005		U	0.005
Cobalt	5.00E-02	20.6.2.3103.C	0.00738		0.005	0.0029	J	0.005		U	0.005	0.00256	J	0.005		U	0.005	0.000871	J	0.005		U	0.005
Copper	1.00E+00	20.6.2.3103.B		U	0.005	0.00704	<0.005	0.005		U	0.005	0.0141		0.005	0.00156	J	0.005	0.00309	J	0.005	0.00177	J	0.005
Iron	1.00E+00	20.6.2.3103.B		U	0.2		U	0.2		U	0.2		U	0.2		U	0.2		U	0.2		U	0.2
Lead	1.50E-02	USEPA MCL		U	0.005		U	0.005		U	0.005		U	0.005		U	0.005		U	0.005		U	0.005
Manganese	2.00E-01	20.6.2.3103.B	1.51		0.005	0.255		0.005	0.0437		0.005	0.108		0.005	0.0232		0.005	0.0424		0.005		U	0.005
Mercury	2.00E-03	20.6.2.3103.A		U	0.0002		U	0.0002	0.000131	J	0.0002		U	0.0002	0.000042	J	0.0002		U	0.0002		U	0.0002
Molybdenum	1.00E+00	20.6.2.3103.C	0.0103		0.005	0.00877		0.005	0.00348	J	0.005	0.0112		0.005	0.0195		0.005	0.0083		0.005	0.0125		0.005
Nickel	2.00E-01	20.6.2.3103.C	0.00651		0.005	0.00483	J	0.005	0.0012	J	0.005	0.00413	J	0.005	0.00173	J	0.005	0.00174	J	0.005	0.00264	J	0.005
Potassium			2.86		0.2	1.78		0.2	1.06		0.2	6.92		0.2	7.95		0.2	0.87		0.2	4.41		0.2
Selenium	5.00E-02	20.6.2.3103.A	0.00222	J	0.005	0.0081		0.005	0.00203	J	0.005	0.00427	J	0.005	0.00861		0.005	0.00246	J	0.005	0.013		0.005
Silver	5.00E-02	20.6.2.3103.A		U	0.005		U	0.005		U	0.005		U	0.005		U	0.005		U	0.005		U	0.005
Sodium			146		0.2	199		2	206		4	176		0.2	218		4	127		4	65.4		0.2
Uranium	3.00E-02	20.6.2.3103.A	0.0156		0.005	0.0843		0.005	0.0331		0.005	0.0263		0.005	0.037		0.005	0.0244		0.005	0.00601		0.005
Zinc	1.00E+01	20.6.2.3103.B	0.00343	J	0.005	0.00973		0.005	0.00291	J	0.005	0.0123		0.005		U	0.005		U	0.005	0.0132		0.005
Anions (mg/L)				•	•		•	•			•		•	•					•	•	-	•	
Chloride	2.50E+02	20.6.2.3103.B	158		25	422		25	389		25	154		25	296		25	116		25	67.5		0.5
Fluoride (F-, Anion)	1.60E+00	20.6.2.3103.A	1.76		0.1	1.1		0.1	1.31		0.1	2.73		0.1	5.16		0.1	2.36		0.1	3.32		0.1
Nitrate-N	1.00E+01	20.6.2.3103.A	1.43	Н	0.1	0.821	Н	0.1	1.37	Н	0.1	0	HU	0.1	2.39		0.1	2.35		0.1	3.22	Н	0.1
Nitrite				HU	0.1	0.141	Н	0.1		HU	0.1		HU	0.1		U	0.1		U	0.1		HU	0.1
Sulfate	6.00E+02	20.6.2.3103.B	2,200		25	2,790		25	2,250		25	2,310		25	2,450		25	2,090		25	1,690		25
Cyanide	2.00E-01	20.6.2.3103.A		U	0.02		U	0.02		U	0.02		U	0.02		U	0.02		U	0.02		U	0.02
Radium (pci/L)	•	•		•	•	•	•	•			•		•	•					•	•	•	•	
Radium-228			0.74	LT	0.49		U	0.52		U	0.55	0.89	LT	0.48	0.87	Y1,LT	0.49		U	0.52	NA		
Radium-226			0.43	LT	0.23		U	0.23		U	0.32	0.54	LT	0.09	0.38	Y1,LT	0.21		U	0.25	NA		
Radium-226 & Radium-228	3.00E+01	20.6.2.3103.A	1.17									1.43			1.25	·			1				
Total Dissolved Solids (mg/L)																							
Residue, filterable	1.00E+04	20.6.2.3103	3,760		10	4,960		10	3,650		10	3,910	1	10	4,610		10	3,670	1	10	3,150	1	10
TPH (mg/L)			-,			,,,,,			-,			-,			,,,,,		_	-,	1		-,		_
Gasoline Range Organics				U	0.05		U	0.05		U	0.05		U	0.05	0.0436	J	0.05	0.0371	J	0.05		U	0.05
Diesel Range Organics	2.00E-01	NMED RA		Ü	0.052		Ü	0.051		Ū	0.051		Ü	0.052		Ü	0.052		Ü	0.051		Ü	0.052
Oil Range Organics	2.00E-01	NMED RA		Ü	0.1		Ü	0.1		U	0.1		Ü	0.1		U	0.1		Ū	0.1	0.17		0.1

Table 5 - Summary of Groundwater Sampling Analytical Results

First Quarter 2013 Interim Report

Navajo Refining Company, Artesia Refinery, New Mexico

	ı	MW-114			MW-115		N	/IW-116			MW-117	,	N	/IW-118		N	/IW-119		RO	Discha	rge		
	2	2/3/2013			2/3/2013		2	/3/2013		2	2/3/2013	3	2	2/5/2013		2	2/5/2013		2	2/3/2013	}		
		CGWSL																					
Analyte	CGWSL	Source	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL	Result	Qual	RL
VOCs (mg/L)					_	_		_	_						_		_	_			_		
1,1,1-Trichloroethane	6.00E+01	20.6.2.3103.A		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001
1,1,2,2-Tetrachloroethane	1.00E+01	20.6.2.3103.A		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001
1,1,2-Trichloroethane	5.00E+00	USEPA MCL		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001
1,1-Dichloroethane	2.50E+01	20.6.2.3103.A		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001
1,1-Dichloroethene	7.00E+00	USEPA MCL		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001
1,2-Dibromoethane	5.00E-02	USEPA MCL		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001
1,2-Dichloroethane	5.00E+00	USEPA MCL		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001
Benzene	5.00E+00	USEPA MCL		U	0.001		U	0.001		U	0.001		U	0.001	0.0042		0.001	0.0036		0.001		U	0.001
Carbon Tetrachloride	5.00E+00	USEPA MCL		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001
Chloroform	8.00E+01	USEPA MCL		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001
Dichloromethane	5.00E+00	USEPA MCL		U	0.002		U	0.002		U	0.002		U	0.002		U	0.002		U	0.002		U	0.002
Ethylbenzene	7.00E+02	USEPA MCL		U	0.001		U	0.001		U	0.001		U	0.001	0.0024		0.001	0.0021		0.001		U	0.001
Tetrachloroethene	5.00E+00	USEPA MCL		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001
Toluene	7.50E+02	20.6.2.3103.A		U	0.001		U	0.001		U	0.001		U	0.001	0.0033		0.001	0.0027		0.001		U	0.001
Total Xylenes	6.20E+02	20.6.2.3103.A		U	0.001		U	0.001		U	0.001		U	0.001	0.0047		0.001	0.0037		0.001		U	0.001
Trichloroethene	5.00E+00	USEPA MCL		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001
Vinyl Chloride	1.00E+00	20.6.2.3103.A		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001		U	0.001
PAHs (mg/L)																							
1-Methylnaphthalene				U	0.0002		U	0.0002		U	0.0002		U	0.0002		U	0.0002		U	0.0002		U	0.0002
2-Methylnaphthalene				U	0.0002		U	0.0002		U	0.0002		U	0.0002		U	0.0002		U	0.0002		U	0.0002
Naphthalene				U	0.0002		U	0.0002		U	0.0002		U	0.0002		U	0.0002		U	0.0002		U	0.0002
Total PAHs	3.00E+01	20.6.2.3103.A																					
Benzo(a)Pyrene	2.00E-01	USEPA MCL		U	0.0002		U	0.0002		U	0.0002		U	0.0002		U	0.0002		U	0.0002		U	0.0002

Notes:

CGWSL is the lowest of the following sources:

New Mexico Water Quality Standards found in NMAC 20.6.2.3103.

If no value in NMAC 20.6.2.3103 was available, then the EPA Federal MCL was used.

TPH results are screened against the "unknown oil" SSL from Table 6-2, 2012 NMED RAG.

Bold, italic font with yellow highlighting indicates a result reported above the CGWSL.

RLs shown in italics font with gray highlighting exceed the CGWSL for that compound.

Screening level for radium is for combined Radium-226 and Radium-228. Detected values were added to obtain the combined value for screening. Non-detect results were treated as a value of 0.

Total PAHs are defined in NMAC 20.6.2.3103 as naphthalene plus mono-methylnaphthalenes. Although no detected values were present, if concentrations had been reported for 1-Methylnaphthalene, 2-Methylnaphthalene, and Naphthalene, the values would have been added to obtain the Total PAHs concentration.

Abbreviations:

--- = not available

CGWSL = Critical Groundwater Screening Level

H = analyzed outside of holding time

J = estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).

LCS = laboratory control sample

LT = the sample has a detection above the achieved minimum detectable concentration but below the requested.

MCL = Maximum contaminant level

mg/L = milligrams per liter

NA = Not Applicable

NMAC = New Mexico Administrative Code

NMED RAG = 2012 New Mexico Environment Department Risk Assessment Guidance

PAH = Polycyclic Aromatic Hydrocarbons

pci/L = average picocuries per liter

Qual = Qualifier from laboratory or data validation

RL = Reporting Limit

VOC = Volatile Organic Compounds

TPH = Total Petroleum Hydrocarbons

U = Indicates the compound was analyzed for but not detected

USEPA = United States Environmental Protection Agency



Figures



NAVAJO REFINING COMPANY ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO

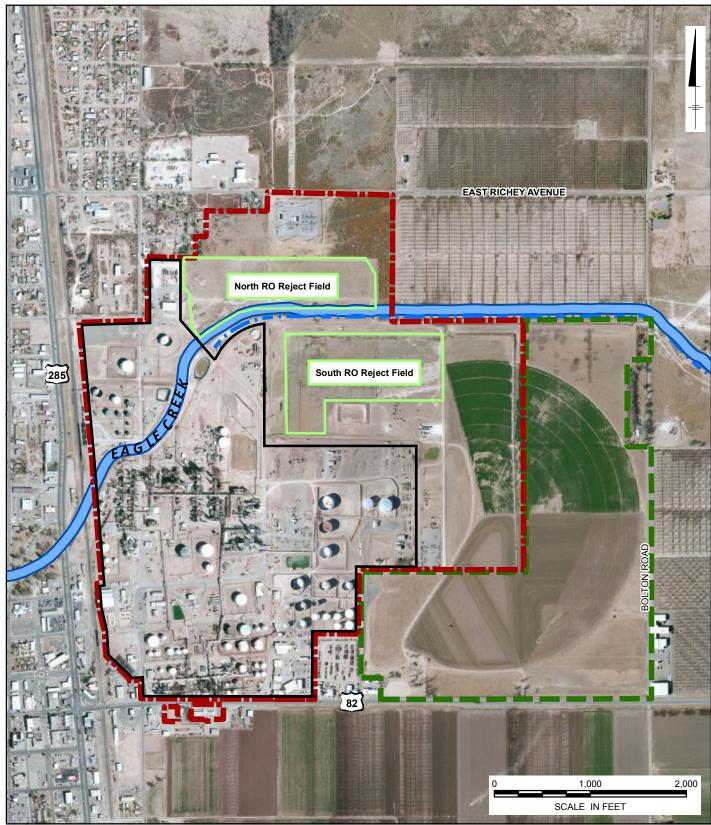
SITE LOCATION MAP



FIGURE

1

CITY: (KNOXVILLE) DIV/GROUP:(ENV) DB: LD: PIC: PM: TM: PROJECT: Path: C:\NavajoRefining\ArtesiaRefinery\RO_RejectFieldWorkPlan\mxd\SiteLocationMap.mxd Date Saved: 3/29/2013 1:25:22 PM



LEGEND:

REFINERY FENCELINE

REJECT FIELD

NAVAJO REFINING PROPERTY LINE

MONTANA REFINING PROPERTY LINE

APPROXIMATE LOCATION OF FORMER THREE-MILE DITCH AND EXISTING UNDERGROUND DISCHARGE PIPING

WATERWAYS

NAVAJO REFINING COMPANY ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO

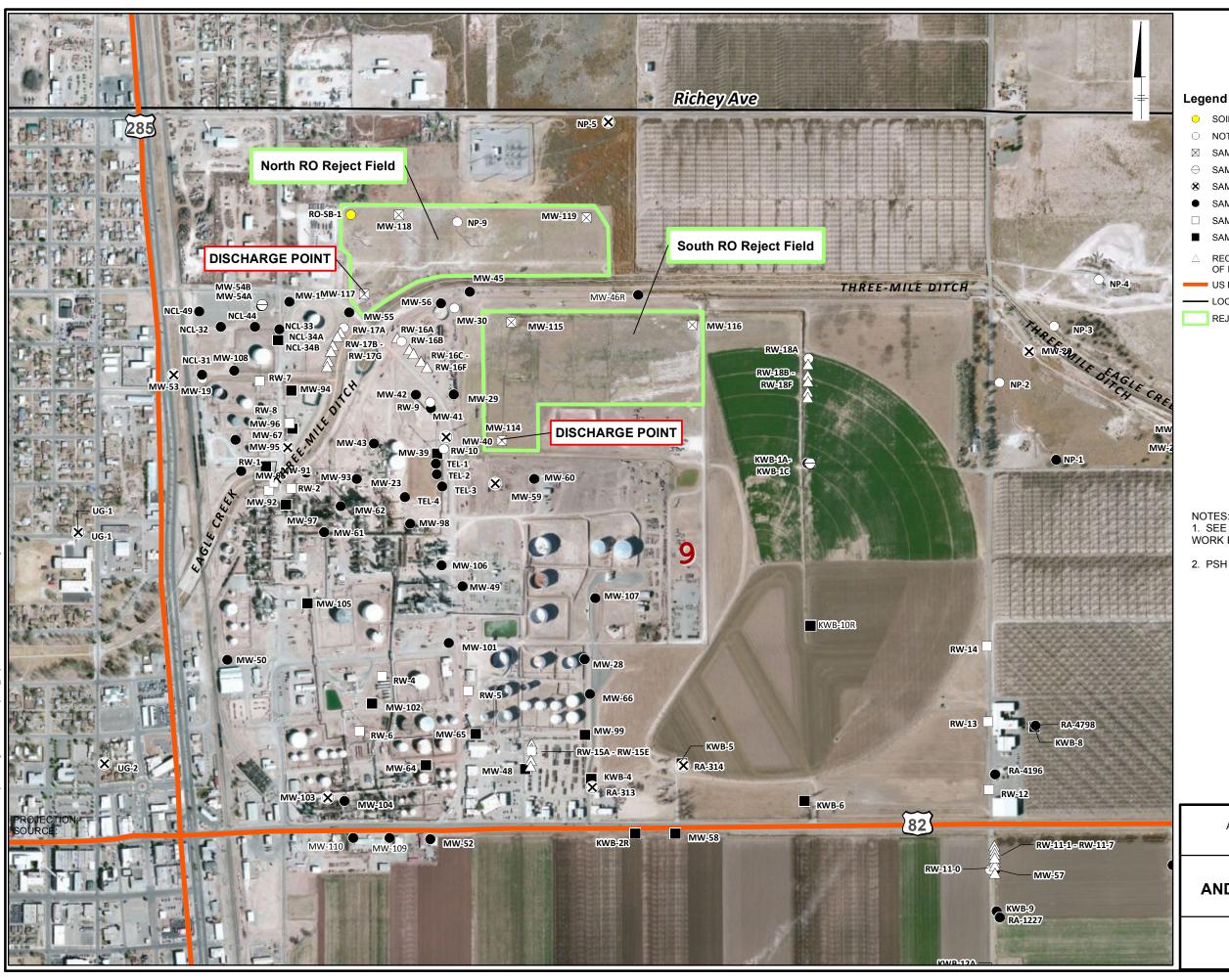
RO REJECT FIELDS SITE INVESTIGATION

SITE FEATURES



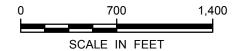
FIGURE

2



- SOIL BORING LOCATION
- O NOT SAMPLED AS PART OF ROUTINE MONITORING PROGRAM
- $\ominus \quad \mathsf{SAMPLES} \; \mathsf{COLLECTED} \; \mathsf{BIENNIALLY}$
- **⊗** SAMPLES COLLECTED ANNUALLY
- SAMPLES COLLECTED SEMIANNUALLY
- ☐ SAMPLES COLLECTED ANNUALLY IF PSH <0.03 FT
- SAMPLES COLLECTED SEMIANNUALLY IF PSH < 0.03 FT
- RECOVERY TRENCH WELL LOCATION NOT SAMPLED AS PART OF ROUTINE MONITORING PROGRAM
- LOCAL ROADS
- REJECT FIELD

- 1. SEE FACILITY WIDE GROUNDWATER MONITORING WORK PLAN FOR ANALYTICAL SUITE
- 2. PSH = PHASE SEPARATED HYDROCARBONS



NAVAJO REFINING COMPANY ARTESIA REFINERY, EDDY COUNTY, NEW MEXICO **RO REJECT FIELDS SITE INVESTIGATION**

SOIL BORING AND MONITORING WELL LOCATIONS





Appendix A

Boring Logs

Date Start/Finish: 1/28/2013 Drilling Company: National Drilling Driller's Name: Gerald Becker Drilling Method: Hollow Stem Auger Sampling Method: Split Spoon

Rig Type: CME 85

Northing: Easting:

Casing Elevation:

Borehole Depth: 35' bgs **Surface Elevation:**

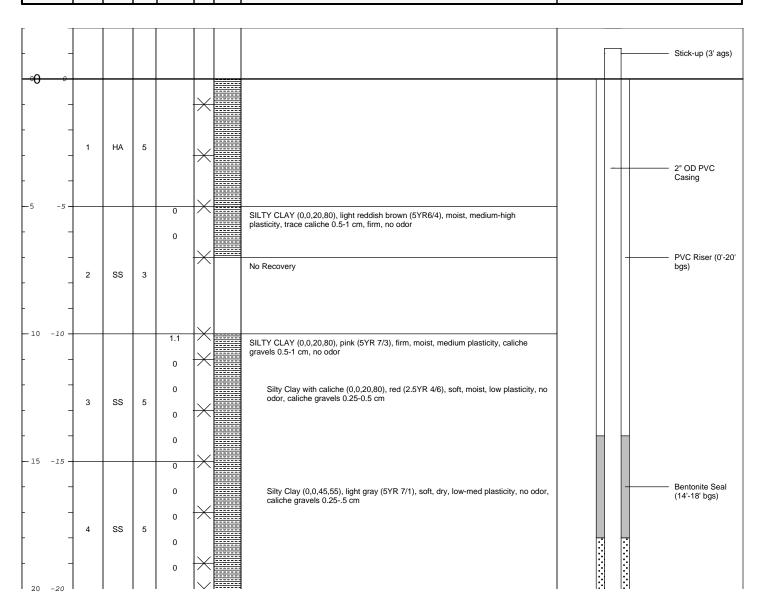
Descriptions By: Ben McKenna

Well/Boring ID: MW-114

Client: Navajo Refining Company

Location: Navajo Refinery

Artesia, New Mexico





Remarks: bgs = below ground surface; amsl = above mean sea level; HA = Hand Auger; ppm = parts per million; NA = not applicable/available; SS = split spoon, ags = above ground surface

Lithology is described as percentage of (Gravel, Sand, Silt, Clay)

Date Start/Finish: 1/28/2013 Drilling Company: National Drilling Driller's Name: Gerald Becker Drilling Method: Hollow Stem Auger Sampling Method: Split Spoon

Rig Type: CME 85

Northing: Easting: Casing Elevation:

Borehole Depth: 35' bgs **Surface Elevation:**

Descriptions By: Ben McKenna

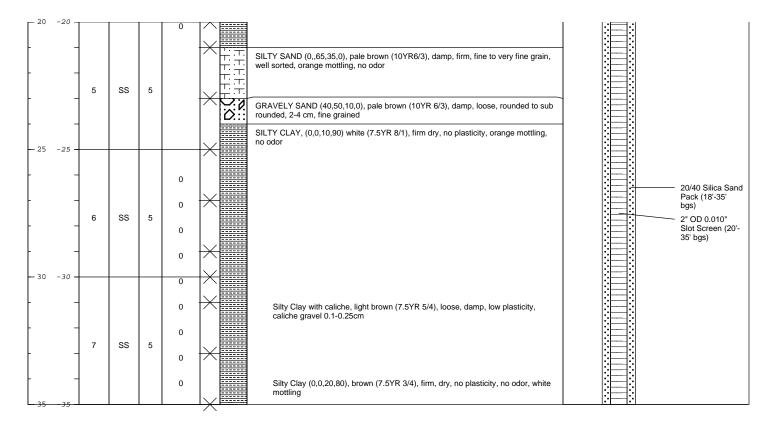
Well/Boring ID: MW-114

Client: Navajo Refining Company

Location: Navajo Refinery

Artesia, New Mexico

DEРТН	ELEVATION Sample Run Number	Sample/Int/Type	Recovery (feet)	PID (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction	
-------	--------------------------------	-----------------	-----------------	-----------	-------------------	-----------------	---------------------------	-----------------------------	--





Remarks: bgs = below ground surface; amsl = above mean sea level; HA = Hand Auger; ppm = parts per million; NA = not applicable/available; SS = split spoon, ags = above ground surface

Lithology is described as percentage of (Gravel, Sand, Silt, Clay)

Created/Edited by: ESB

Date Start/Finish: 1/29/2013 **Drilling Company:** National Drilling Driller's Name: Gerald Becker Drilling Method: Hollow Stem Auger Sampling Method: Split Spoon

Rig Type: CME 85

Northing: Easting:

Casing Elevation:

Borehole Depth: 25' bgs **Surface Elevation:**

Descriptions By: Ben McKenna

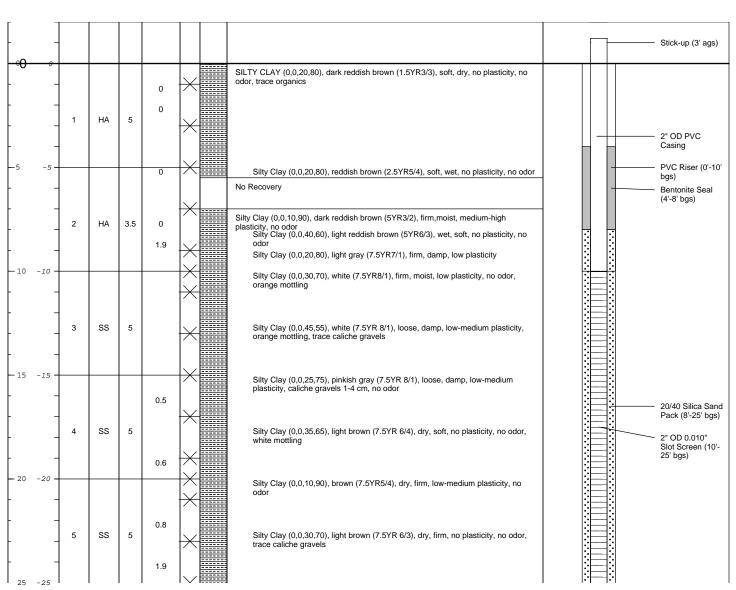
Well/Boring ID: MW-115

Client: Navajo Refining Company

Location: Navajo Refinery

Artesia, New Mexico

DEРТН	ELEVATION Sample Run Number	Sample/Int/Type	Recovery (feet)	PID (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
-------	--------------------------------	-----------------	-----------------	-----------	-------------------	-----------------	---------------------------	-----------------------------





Remarks: bgs = below ground surface; amsl = above mean sea level; HA = Hand Auger; ppm = parts per million; NA = not applicable/available; SS = split spoon, ags = above ground surface

Lithology is described as percentage of (Gravel, Sand, Silt, Clay)

Date Start/Finish: 1/29/2013
Drilling Company: National Drilling
Driller's Name: Gerald Becker
Drilling Method: Hollow Stem Auger
Sampling Method: Split Spoon

Rig Type: CME 85

Northing: Easting: Casing Elevation:

Borehole Depth: 25' bgs **Surface Elevation:**

Descriptions By: Ben McKenna

Well/Boring ID: MW-115

Client: Navajo Refining Company

Location: Navajo Refinery

Artesia, New Mexico

ELEVATION Sample Run Number Sample/Int/Type Recovery (feet) PID (ppm) Analytical Sample Geologic Column	Stratigraphic Description	Well/Boring Construction
---------------------------------------------------------------------------------------------------------	---------------------------	-----------------------------

ARCADIS

Remarks: bgs = below ground surface; amsl = above mean sea level; HA = Hand Auger; ppm = parts per million; NA = not applicable/available; SS = split spoon, ags = above ground surface

Lithology is described as percentage of (Gravel, Sand, Silt, Clay)

Project: TX001027 Data File:MW-115.dat Template:Rotosonic Analytical.ldfx
Date: 4/12/2013 Created/Edited by:ESB

Page: 2 of 2

Date Start/Finish: 1/30/2013 **Drilling Company:** National Drilling Driller's Name: Gerald Becker Drilling Method: Hollow Stem Auger Sampling Method: Split Spoon

Rig Type: CME 85

Northing: Easting: Casing Elevation:

Borehole Depth: 25' bgs **Surface Elevation:**

Descriptions By: Ben McKenna

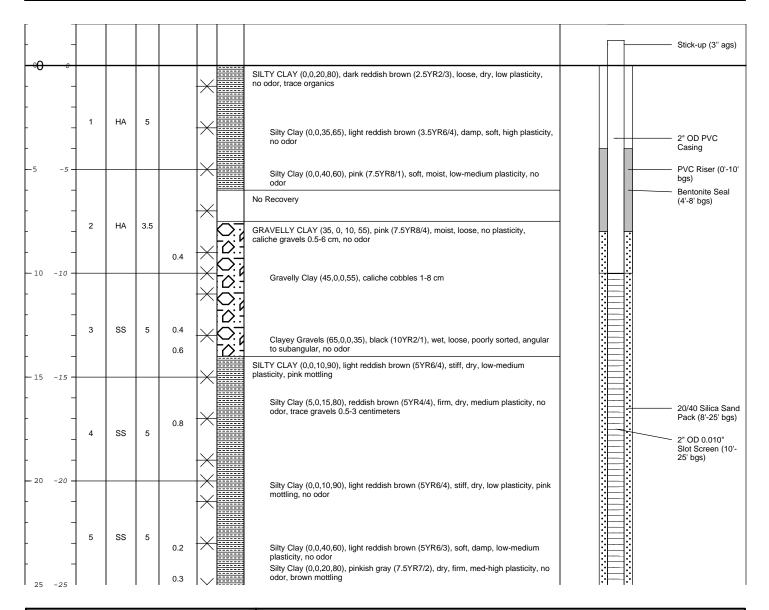
Well/Boring ID: MW-116

Client: Navajo Refining Company

Location: Navajo Refinery

Artesia, New Mexico

DEРТН	ELEVATION Sample Run Number	Sample/Int/Type	Recovery (feet)	PID (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction
-------	--------------------------------	-----------------	-----------------	-----------	-------------------	-----------------	---------------------------	-----------------------------





Remarks: bgs = below ground surface; amsl = above mean sea level; HA = Hand Auger; ppm = parts per million; NA = not applicable/available; SS = split spoon, ags = above ground surface

Lithology is described as percentage of (Gravel, Sand, Silt, Clay)

Project: TX001027 Data File:MW-116.dat

Template:Rotosonic Analytical.ldfx Date: 4/12/2013

Page: 1 of 2

Created/Edited by: ESB

Date Start/Finish: 1/30/2013
Drilling Company: National Drilling
Driller's Name: Gerald Becker
Drilling Method: Hollow Stem Auger
Sampling Method: Split Spoon

Rig Type: CME 85

Northing: Easting: Casing Elevation:

Borehole Depth: 25' bgs **Surface Elevation:**

Descriptions By: Ben McKenna

Well/Boring ID: MW-116

Client: Navajo Refining Company

Location: Navajo Refinery

Artesia, New Mexico

DEPTH ELEVATION Sample Run Number Sample/Int/Type Recovery (feet) PID (ppm) Analytical Sample Geologic Column	Stratigraphic Description	Well/Boring Construction
---------------------------------------------------------------------------------------------------------------	---------------------------	-----------------------------



Remarks: bgs = below ground surface; amsl = above mean sea level; HA = Hand Auger; ppm = parts per million; NA = not applicable/available; SS = split spoon, ags = above ground surface

Lithology is described as percentage of (Gravel, Sand, Silt, Clay)

Template:Rotosonic Analytical.ldfx
Date: 4/12/2013 Crea

Page: 2 of 2

Date Start/Finish: 1/31/2013 Drilling Company: National Drilling Driller's Name: Gerald Becker Drilling Method: Hollow Stem Auger Sampling Method: Split Spoon

Rig Type: CME 85

Northing: Easting:

Casing Elevation:

Borehole Depth: 25' bgs **Surface Elevation:**

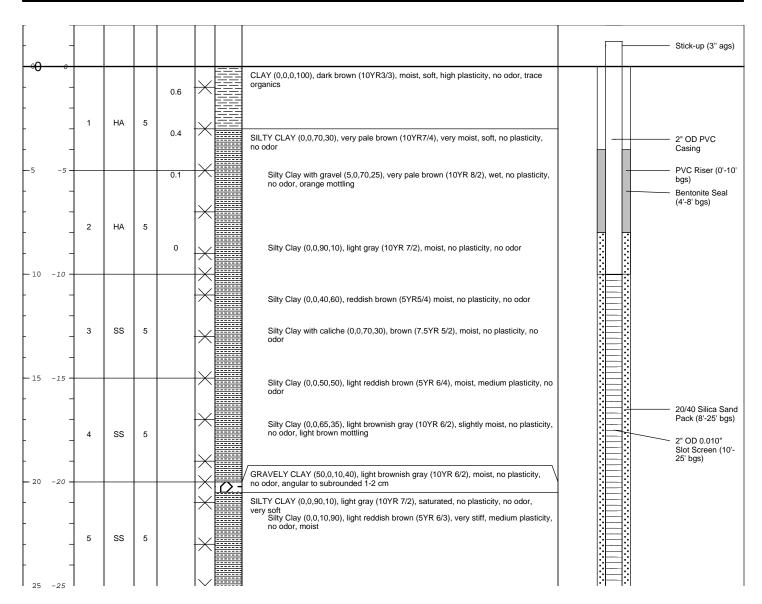
Descriptions By: Eric Bergersen

Well/Boring ID: MW-117

Client: Navajo Refining Company

Location: Navajo Refinery

Artesia, New Mexico





Remarks: bgs = below ground surface; amsl = above mean sea level; HA = Hand Auger; ppm = parts per million; NA = not applicable/available; SS = split spoon, ags = above ground surface

Lithology is described as percentage of (Gravel, Sand, Silt, Clay)

Date Start/Finish: 1/31/2013
Drilling Company: National Drilling
Driller's Name: Gerald Becker
Drilling Method: Hollow Stem Auger
Sampling Method: Split Spoon

Rig Type: CME 85

Northing: Easting: Casing Elevation:

Borehole Depth: 25' bgs **Surface Elevation:**

Descriptions By: Eric Bergersen

Well/Boring ID: MW-117

Client: Navajo Refining Company

Location: Navajo Refinery

Artesia, New Mexico

Ī	LEVATION sample Run Number	Sample/Int/Type	Recovery (feet)	ID (ppm)	nalytical Sample	eologic Column	Stratigraphic Description	Well/Boring Construction
i i	LEVA ⁻	Sample	ò		1≥	응		

ARCADIS

Remarks: bgs = below ground surface; amsl = above mean sea level; HA = Hand Auger; ppm = parts per million; NA = not applicable/available; SS = split spoon, ags = above ground surface

Lithology is described as percentage of (Gravel, Sand, Silt, Clay)

Project: TX001027 Data File:MW-117.dat Template:Rotosonic Analytical.ldfx
Date: 4/12/2013 Created/Edited by:ESB

Page: 2 of 2

Date Start/Finish: 2/4/2013 Drilling Company: National Drilling Driller's Name: Gerald Becker Drilling Method: Hollow Stem Auger Sampling Method: Split Spoon

Rig Type: CME 85

Northing: Easting:

Casing Elevation:

Borehole Depth: 25' bgs **Surface Elevation:**

Descriptions By: Ben McKenna

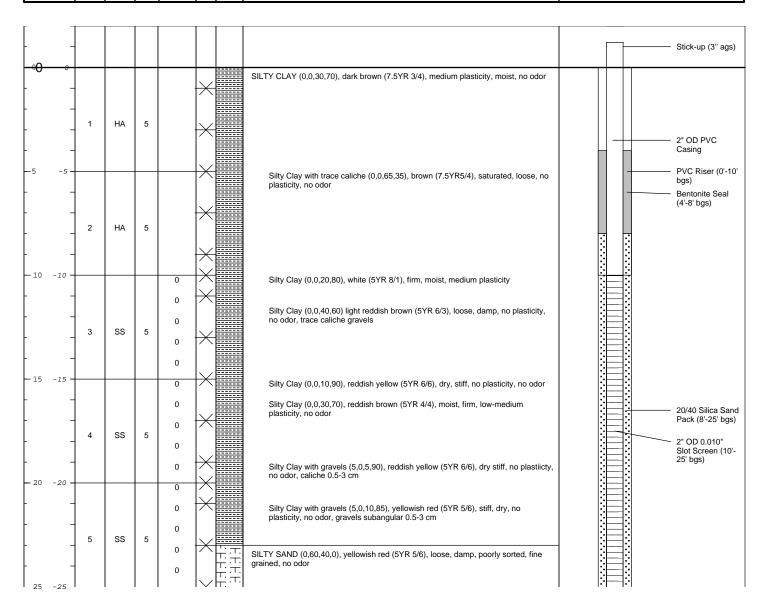
Well/Boring ID: MW-118

Client: Navajo Refining Company

Location: Navajo Refinery

Artesia, New Mexico

DEРТН	ELEVATION Sample Run Number	Sample/Int/Type	Recovery (feet)	PID (ppm)	Analytical Sample	Geologic Column	Stratigraphic Description	Well/Boring Construction	
-------	--------------------------------	-----------------	-----------------	-----------	-------------------	-----------------	---------------------------	-----------------------------	--





Remarks: bgs = below ground surface; amsl = above mean sea level; HA = Hand Auger; ppm = parts per million; NA = not applicable/available; SS = split spoon, ags = above ground surface

Lithology is described as percentage of (Gravel, Sand, Silt, Clay)

Project: TX001027 Data File:MW-118.dat Template:Rotosonic Analytical.ldfx Date: 4/12/2013 Crea Page: 1 of 2

Created/Edited by: ESB

Date Start/Finish: 2/4/2013
Drilling Company: National Drilling
Driller's Name: Gerald Becker
Drilling Method: Hollow Stem Auger
Sampling Method: Split Spoon
Rig Type: CME 85

Sample/Int/Type

Recovery (feet)

PID (ppm)

Analytical Sample Geologic Column Northing: Easting: Casing Elevation:

Borehole Depth: 25' bgs **Surface Elevation:**

Descriptions By: Ben McKenna

Stratigraphic Description

Well/Boring ID: MW-118

Client: Navajo Refining Company

Location: Navajo Refinery

Artesia, New Mexico

Well/Boring Construction

25 - 25

DEPTH

Sample Run Number

ELEVATION



Remarks: bgs = below ground surface; amsl = above mean sea level; HA = Hand Auger; ppm = parts per million; NA = not applicable/available; SS = split spoon, ags = above ground surface

Lithology is described as percentage of (Gravel, Sand, Silt, Clay)

Template:Rotosonic Analytical.ldfx
Date: 4/12/2013 Created/Edited by:ESB

Page: 2 of 2

Date Start/Finish: 2/4/2013 Drilling Company: National Drilling Driller's Name: Gerald Becker Drilling Method: Hollow Stem Auger Sampling Method: Split Spoon

Rig Type: CME 85

Northing: Easting:

Casing Elevation:

Borehole Depth: 25' bgs **Surface Elevation:**

Descriptions By: Ben McKenna

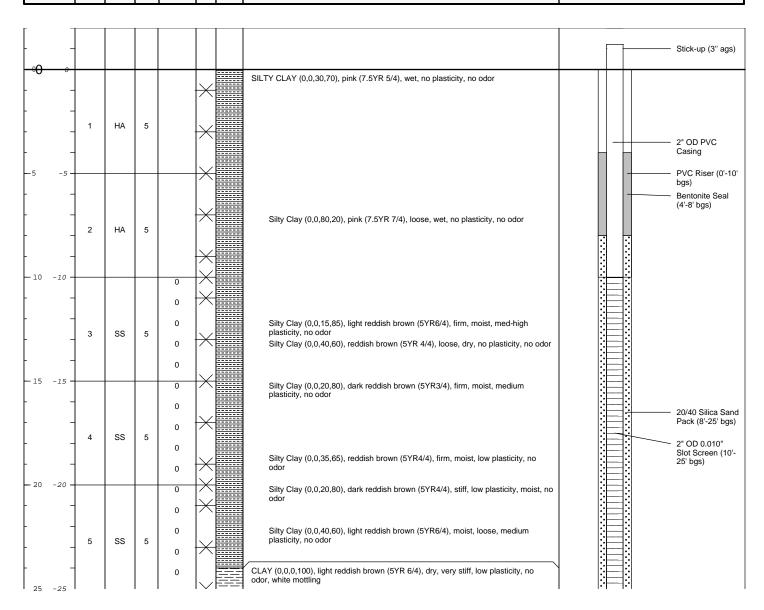
Well/Boring ID: MW-119

Client: Navajo Refining Company

Location: Navajo Refinery

Artesia, New Mexico

DEPTH ELEVATION Sample Run Number Sample/Int/Type Recovery (feet) PID (ppm) Analytical Sample Geologic Column	Stratigraphic Description	Well/Boring Construction
---------------------------------------------------------------------------------------------------------------	---------------------------	-----------------------------





Remarks: bgs = below ground surface; amsl = above mean sea level; HA = Hand Auger; ppm = parts per million; NA = not applicable/available; SS = split spoon, ags = above ground surface

Lithology is described as percentage of (Gravel, Sand, Silt, Clay)

Date Start/Finish: 2/4/2013
Drilling Company: National Drilling
Driller's Name: Gerald Becker
Drilling Method: Hollow Stem Auger
Sampling Method: Split Spoon
Rig Type: CME 85

Northing: Easting: Casing Elevation:

Borehole Depth: 25' bgs **Surface Elevation:**

Descriptions By: Ben McKenna

Well/Boring ID: MW-119

Client: Navajo Refining Company

Location: Navajo Refinery

Artesia, New Mexico

ELEVATION Sample Run Number Sample/Int/Type Recovery (feet) PID (ppm) Analytical Sample Geologic Column	Stratigraphic Description	Well/Boring Construction
---------------------------------------------------------------------------------------------------------	---------------------------	-----------------------------

ARCADIS

Remarks: bgs = below ground surface; amsl = above mean sea level; HA = Hand Auger; ppm = parts per million; NA = not applicable/available; SS = split spoon, ags = above ground surface

Lithology is described as percentage of (Gravel, Sand, Silt, Clay)

Template:Rotosonic Analytical.ldfx
Date: 4/12/2013 Created/Edited by:ESB

Page: 2 of 2

Date Start/Finish: 2/4/2013 Drilling Company: National Drilling Driller's Name: Gerald Becker Drilling Method: Hollow Stem Auger Sampling Method: Split Spoon

Sampling Method: Rig Type: CME 85 Northing: Easting: Casing Elevation:

Borehole Depth: 35' bgs **Surface Elevation:**

Descriptions By: Ben McKenna

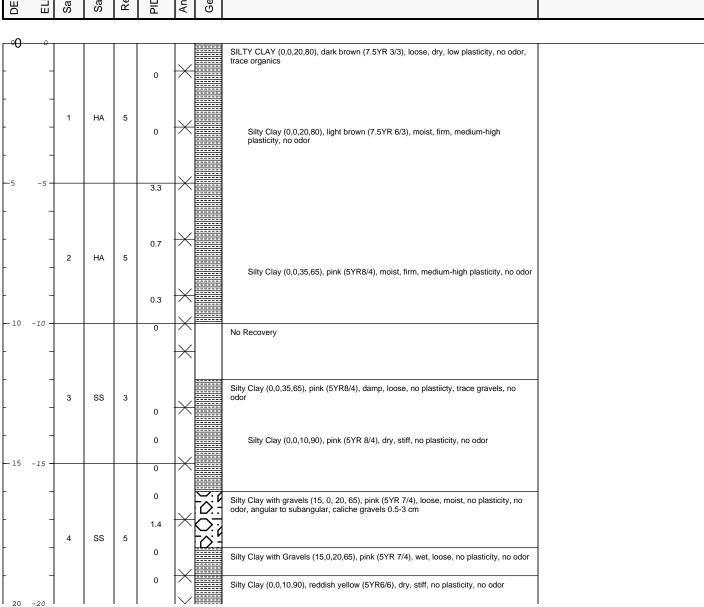
Well/Boring ID: RO-SB-1

Client: Navajo Refining Company

Location: Navajo Refinery

Artesia, New Mexico

ELEVATION Sample Run Number Sample/Int/Type Recovery (feet) PID (ppm) Analytical Sample Geologic Column	Well/Boring nic Description Construction
---------------------------------------------------------------------------------------------------------	------------------------------------------





Remarks: bgs = below ground surface; amsl = above mean sea level; HA = Hand Auger; ppm = parts per million; NA = not applicable/available; SS = split spoon, ags = above ground surface

Lithology is described as percentage of (Gravel, Sand, Silt, Clay)

Date Start/Finish: 2/4/2013 Drilling Company: National Drilling Driller's Name: Gerald Becker Drilling Method: Hollow Stem Auger Sampling Method: Split Spoon

Rig Type: CME 85

Northing: Easting: Casing Elevation:

ŭ

Borehole Depth: 35' bgs **Surface Elevation:**

Descriptions By: Ben McKenna

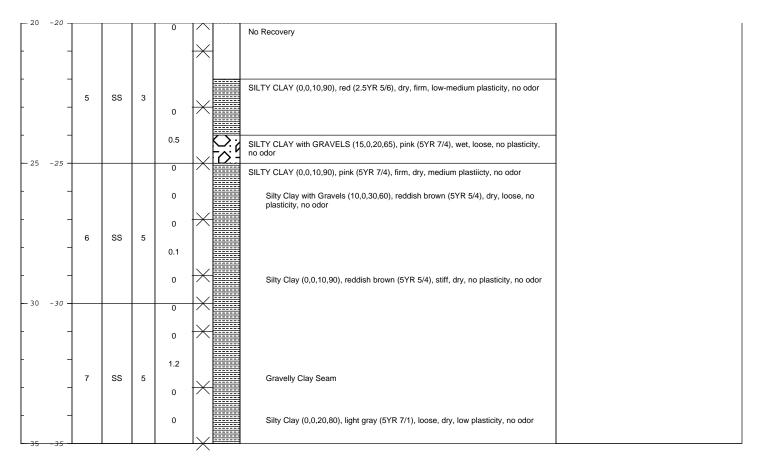
Well/Boring ID: RO-SB-1

Client: Navajo Refining Company

Location: Navajo Refinery

Artesia, New Mexico

ELEVATION Sample Run Number Sample/Int/Type Recovery (feet) PID (ppm) Analytical Sample Geologic Column	Stratigraphic Description	Well/Boring Construction
---------------------------------------------------------------------------------------------------------	---------------------------	-----------------------------





Remarks: bgs = below ground surface; amsl = above mean sea level; HA = Hand Auger; ppm = parts per million; NA = not applicable/available; SS = split spoon, ags = above ground surface

Lithology is described as percentage of (Gravel, Sand, Silt, Clay)



Appendix B

Groundwater Sampling Field Data Sheets

RO Reject Discharge Fields Wells (MW-114 through MW-119)

Item	Work Plan Requirement	Initials	NAU	Sh
1	Confirm soil-boring location is properly staked. Confirm accessibility to rig.		/	
2	Confirm utility clearance and proper dig permits have been obtained.	_	<u></u>	
3	Confirm that PID is available and calibrated. Confirm that equipment to conduct headspace analysis of soil samples is available.			<u></u>
4	Confirm drilling/sampling equipment is decontaminated.	*		た
5	Collect 0-1 ft sample with hand auger.			下
6	Continue clearance to 5 ft bgs with hydrovac and/or hand auger.			7:
7	Collect continuous samples using split spoon or core barrel. Screen each sample via PID, visual and odor. Note results on field form along with sample length, sampling tool, percent recovery. Retain samples until most impacted sample identified.			8
8	Continue sampling until 5 feet below saturated zone. If the saturated zone is not reached within 50 ft bgs, then halt sampling 5 feet below last observed soil contamination.			~
9	Screen all soil samples (PID, visual, olfactory), then select appropriate samples for laboratory analyses (see below).	•		
10	Collect soil moisture samples at 2 ft intervals throughout. Analytical suite@ 5ft inter	vals.		
11	Gauge depth to groundwater through hollow stem auger to determine well screen interval.			\subseteq
12/	Set 18- to 20-ft well screen across anticipated water table and casing to surface. Place 8/12 or 10/20 sand pack around screen to 2 feet above top of scree. Transition with 2 feet of 20/40 sand. Place 2 foot bentonite seal and hydrate for 30 minutes. Place grout from bentonite to near surface.			7
13	Set protective outer casing and well pad. Install locking cap. Ensure cap and casing are secured.			
14	Develop well by purging until parameters stabilize (<10% variability between readings). All fluids to be contained and disposed of in process wastewater system upstream of API separator.			
15	Collect groundwater sample.			
16	Confirm that GPS coordinates have been collected for this well			

Analytical Suite as per attached Table 3 of Work Plan PLUS moisture content for soil at every 2 ft interval.

Install soil boring RO-SB01 in northwest corner of North RO Reject Discharge Field and collect soil samples at same rate as for wells.

	ARCADIS U.S.	
PROJECT#: CLIENT NAME: Name: LOCATION: Artesia	PURGED BY: SAMPLED BY: M	TA SHEET WELL I.D.:
DATE PURGED 2-3-13 DATE SAMPLED 2-3-13 SAMPLE TYPE: Groundwater x	START (2400hr) LOSO SAMPLE TIME (2400hr)	END (2400hr) // (\$\square\$ Treatment Effluent Other
CASING DIAMETER: 2" X (0.17)	3" 4" 5"	
	59	CASING VOLUME (gal) = 5.07 CALCULATED PURGE (gal) = ACTUAL PURGE (gal) =
	FIELD MEASUREMENTS	3
DATE TIME (2400hr) (gal) 2(3/13 0.50	TEMP. (degrees 18) CONDUCTIVII (1264 (13.60 4.14 18.83 4.14 18.82 4.14 18.82 4.14	(units) (visual) (NTU) 6.58 6.48 6.48 6.47 6.47 6.47 6.47 6.47 6.47 11 33.4 35.7 6.48 12 37.8
SAMPLE DEPTH TO WATER: 8.6	SAMPLE INFORMATION	SAMPLE TURBIDITY:
		See COC Multiple
Centrifugal Pump Bailer	(PVC) Centrif (Stainless Steel) Subme	SAMPLING EQUIPMENT er Pump Bailer (Teflon) fugal Pump Bailer (PVC or disposable) ersible Pump Bailer (Stainless Steel) llic Pump Dedicated
WELL INTEGRITY: Town /	Vew	LOCK#:
SIGNATURE:		Pageof

### PROJECT #: PROJECT #: PROJECT #: PURGED BY: SAMPLED BY: SAMPL		ARCADIS (<i>U.S.</i>		
DATE SAMPLED 2/3/17 SAMPLE TIME (2400hr) 12.5 c	PROJECT #: CLIENT NAME:	PURGED BY:	•	SAMPLE I.D.:	
Casing Volume: (gallons per foot) (0.17) (0.38) (0.67) (1.02) (1.50) (2.60) ()	DATE SAMPLED 2/3/13	SAMPLE TIME (2400hr)	1230	·	215
DEPTH TO WATER (feet) = 7 49					Other ()
DATE TIME VOLUME TEMP. C CONDUCTIVITY pH COLOR TURBIDITY	DEPTH TO WATER (feet) =	49	CALCULATED P	URGE (gal) =	41
Canon Cano		FIELD MEASUREN	MENTS		
ODOR: PURGING EQUIPMENT Bladder Pump Bailer (Teflon) Centrifugal Pump Bailer (PVC) Submersible Pump Bailer (Stainless Steel) Peristalic Pump Other: Pump Depth: WELL INTEGRITY: SAMPLING EQUIPMENT SAMPLING EQUIPMENT Bladder Pump Bailer (Teflon) Centrifugal Pump Bailer (PVC or disposable) Submersible Pump Bailer (Stainless Steel) Veristalic Pump Dedicated Other: LOCK#:	2 3 13 145 (gal) (gal)	(degrees FV (up 17.66 17.41 4 17.19 4 17.11 4 16.95 4 16.87 4 16.83 4 16.83	(unit 3,01 7,11 7,11 7,11 7,11 7,11 7,11 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,11 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7,1 6,9 7	(visual) (visua	(NTU) 85. 6 76.3 71.2 65.6 61.8 58.1
PURGING EQUIPMENT Bladder Pump Bailer (Teflon) Centrifugal Pump Bailer (PVC) Submersible Pump Bailer (Stainless Steel) Peristalic Pump Dedicated Other: Pump Depth: WELL INTEGRITY: DEMARKS.	80% RECHARGE:YESNO	ANALYSES:			
Bladder Pump Centrifugal Pump Bailer (Teflon) Bailer (PVC) Submersible Pump Peristalic Pump Dedicated Other: Pump Depth: WELL INTEGRITY: Bailer (Teflon) Bailer (Teflon) Centrifugal Pump Bailer (Teflon) Bailer (Teflon) Centrifugal Pump Bailer (PVC or	ODOR: SAMPLE VI	ESSEL / PRESERVATIVE:			
WELL INTEGRITY: 1500 New LOCK#:	Bladder Pump Centrifugal Pump Submersible Pump Peristalic Pump Dedicate Other:	Stainless Steel)	Bladder Pump Centrifugal Pump Submersible Pump Peristalic Pump	Bailer (Teflon) Bailer (P\ Bailer (Stainless St	eel)
	WELL INTEGRITY: 150md New		LOC	K#:	

ARCA	DIS U.S.
WATER SAMPLE	FIELD DATA SHEET
PROJECT #: PURGED BY: C CLIENT NAME: Naugo SAMPLED BY: C LOCATION: Ar fesia Na	WELL I.D.: MW-1/6 SAMPLE I.D.: QA SAMPLES:
DATE PURGED 2-3-13 START (2400hr) DATE SAMPLED 2-3-13 SAMPLE TIME (2400hr) SAMPLE TYPE: Groundwater x Surface Water	
CASING DIAMETER: 2" $\frac{\chi}{(0.17)}$ 3" $\frac{4}{(0.38)}$	$\frac{5"}{(0.67)}$ $\frac{5"}{(1.02)}$ $\frac{6"}{(1.50)}$ $\frac{8"}{(2.60)}$ Other ${()}$
DEPTH TO BOTTOM (feet) = 27.71 DEPTH TO WATER (feet) = 9.91 WATER COLUMN HEIGHT (feet) = 17.88	CASING VOLUME (gal) = 3.04 CALCULATED PURGE (gal) = ACTUAL PURGE (gal) =
FIELD ME.	ASUREMENTS
2-3-13 1236 (gal) (degrees \$\frac{1}{2}\$ \\ 1240 \\ 1245 \\ 1250 \\ 1300 \\ 1305 \\ 14.03 \\ SAMPLE D	CONDUCTIVITY pH COLOR TURBIDITY (unitos)cm) (units) (visual) (NTU) Mr
SAMPLE DEPTH TO WATER: 993	SAMPLE TURBIDITY:
80% RECHARGE: YES NO ANALYS ODOR: SAMPLE VESSEL / PRESERVATION	
PURGING EQUIPMENT Bladder Pump Centrifugal Pump Submersible Pump Peristalic Pump Dedicated Pump Depth:	SAMPLING EQUIPMENT Bladder Pump Bailer (Teflon) Centrifugal Pump Bailer (PVC or disposable) Submersible Pump Bailer (Stainless Steel) Peristalic Pump Dedicated Other:
WELL INTEGRITY: Brand Veas REMARKS:	LOCK#:
SIGNATURE:	Page of

	ARCADIS	U.S.		
W	ATER SAMPLE FIEL	D DATA SHEET		
PROJECT #:	PURGED BY:	<u> </u>	/ELL I.D.: <u>Mレー11</u>	7
CLIENT NAME:	SAMPLED BY:	<u>r </u>	AMPLE I.D.:	
LOCATION: Arteria, NM		Q	A SAMPLES:	
DATE PURGED 2.3.13	START (2400hr) 0	724 E	ND (2400hr) 094	6
DATE SAMPLED 2.3.13	SAMPLE TIME (2400hr)	1000		
SAMPLE TYPE: Groundwater x	Surface Water	Treatment Effluent	Other	
CASING DIAMETER: 2" X (0.17)	3" 4" (0.67)	_ 5" (1.02) 6" (1	.50) 8" <u>(2.60)</u>	Other ()
DEPTH TO BOTTOM (feet) = 27.	65	CASING VOLUME	(gal) = 3. 49	
The state of the s	7	CALCULATED PUR	RGE (gal) =	
WATER COLUMN HEIGHT (feet) = 20	. 28	ACTUAL PURGE (g	(al) =	ne
Tar	FIELD MEASURE	MENTS		··· • · · · ·
DATE TIME VENTE	_	CTIVITY pH		TURBIDITY
2/3/3 0926 (gal)	(degrees) (un)	nos/cm) (units) ' 4.48	(visual)	(NTU)
0930	<u> </u>	<u>4.48</u> <u>6.34</u>	<u>Clear</u>	123
6933 2.75		.30 6.34	(1	78.5
0936 2.75		.29 6.34 .29 6.36		78.5
6938 2.78		. 29 <u>6.36</u> . 29 <u>6.36</u>		<u> </u>
				
	SAMPLE INFORM	ATION		
	SAMPLE INFORM	SAMPLE	TURBIDITY:	····
80% RECHARGE: X YESNO	ANALYSES: _	Sec cos		
ODOR: SAMPLE VI	ESSEL / PRESERVATIVE:	Multiple	<u>. </u>	
PURGING EQUIPMENT		SAMPLIN	G EQUIPMENT	·
Bladder Pump Bailer (T Centrifugal Pump Bailer (P	·	Bladder Pump Centrifugal Pump	Bailer (Teflon) Bailer (PVC or	disposable)
Submersible Pump Bailer (S	tainless Steel)	Submersible Pump	Bailer (Stainless Steel)	disposable)
Y Peristalic Pump Dedicate		Peristalic Pump	Dedicated	_
Other:	Othe	r;		
Pump Depth:				
WELL INTEGRITY: Brand New	· · · · · · · · · · · · · · · · · · ·	LOCK#	:	
REMARKS:				
<u> </u>				
SIGNATURE.				
SIGNATURE:			Pag	ge of

÷

.

ARCADIS U.S.									
WATER SAMPLE FIELD DATA SHEET									
PROJECT#:	PURGED BY: R. M	ackenus	WELL I.D.: MW	-118					
CLIENT NAME: Navayo	SAMPLED BY: V.	Takenna	SAMPLE I.D.:						
LOCATION: Antesia, NM			QA SAMPLES:						
DATE PURGED 2-5-13 DATE SAMPLED 2-5-13	START (2400hr) 1 SAMPLE TIME (2400hr)	345 1425	END (2400hr)	115					
SAMPLE TYPE: Groundwater x	Surface Water	Treatment Effluen	t Other _						
CASING DIAMETER: 2" (0.17)	3" 4" (0.67)	5"6"	(1.50) 8" (2.60)	Other ()					
DEPTH TO BOTTOM (feet) = 28.	51	CASING VOLUM	4E (gal) = 4,2	2					
DEPTH TO WATER (feet) = / 3.	71	CALCULATED F	PURGE (gal) =						
WATER COLUMN HEIGHT (feet) =	24.80	ACTUAL PURG	$E(gal) = $ $\simeq 4$	Sgal					
<u> </u>	FIELD MEASURE	EMENTS	/						
DATE TIME (2400hr) (gal) 2	(degrees M Ms (um	7.6 1.84 7.0 7.8 6.9 1.95 6.1 6.1 6.1 6.1 6.1 6.1 6.1 6.1	(visual) (Clear 11 11 11	TURBIDITY (NTU) (59 90.2 51.6 37.8 30.9 29.3					
80% RECHARGE: X YES NO	ANALYSES:	Sec. (00		·····					
_ _	ESSEL / PRESERVATIVE:	Multiple							
PURGING EQUIPMENT	THE SERVICE OF THE SE		LING EQUIPMENT						
Bladder Pump Bailer (T Centrifugal Pump Bailer (P	VC) tainless Steel)	Bladder Pump Centrifugal Pump Submersible Pump Peristalic Pump	Bailer (Teflon) Bailer (PV Bailer (Stainless Ste						
WELL INTEGRITY: Broad A	kw	LOC	EK#:						
REMARKS:									
SIGNATURE:				Pageof					

	ARCADIS U.S.	
PROJECT #: PURG	ED BY: B. Mcking LED BY: B. Mcking	WELL I.D.: MW-119 SAMPLE I.D.: QA SAMPLES:
DATE SAMPLED 2-5-13 SAMP	T (2400hr) 1240 LE TIME (2400hr) 1315 Gurface Water Treatment Efflu	END (2400hr)
CASING DIAMETER: 2" 3" (0.17) (0.17)	0.38) 4" (0.67) 5" (1.02)	8" (1.50) 8" (2.60) Other ()
DEPTH TO BOTTOM (feet) = 23.35 DEPTH TO WATER (feet) = 6.67 WATER COLUMN HEIGHT (feet) = 27.20		PURGE (gal) =
	FIELD MEASUREMENTS	
2 5 13 1240 (gal) (deg 16 1245 16 1250 9 1255 9 1255 9	Trees N As (umbos/cm)	OH COLOR TURBIDITY (NTU) 20 (Car 139 03 11 133 99 208 97 173 97 173 97 173 182 1944 IPLE TURBIDITY:
80% RECHARGE: X YES NO	ANALYSES:	
ODOR: No SAMPLE VESSEL / P		
PURGING EQUIPMENT Bladder Pump Centrifugal Pump Bailer (PVC) Submersible Pump Peristalic Pump Dedicated Other: Pump Depth:	SAM Bladder Pump Centrifugal Pump Submersible Pump Peristalic Pump Other:	PLING EQUIPMENT Bailer (Teflon) Bailer (PVC or disposable) Bailer (Stainless Steel) Dedicated DCK#:
REMARKS:SIGNATURE:		Page of

.

.



Appendix C

Laboratory Analytical Reports



13-Feb-2013

Robert Combs Navajo Refining Company PO Box 159 Artesia, NM 88211

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

Re: RO Discharge Sampling Work Order: **1301997**

Dear Robert,

ALS Environmental received 16 samples on 31-Jan-2013 09:10 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 49.

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

Sincerely,

Electronically approved by: Jumoke M. Lawal

Sonie West

Sonia West Project Manager



Certificate No: T104704231-12-10

ALS Environmental

Date: 13-Feb-13

Client: Navajo Refining Company
Project: RO Discharge Sampling

Work Order: 1301997

Work Order Sample Summary

Lab Samp II	Client Sample ID	<u>Matrix</u>	Tag Number	Collection Date	Date Received	<u>Hold</u>
1301997-01	MW -115 (1)	Soil		1/29/2013 14:25	1/31/2013 09:10	
1301997-02	MW -115 (3)	Soil		1/29/2013 14:30	1/31/2013 09:10	
1301997-03	MW- 115 (5)	Soil		1/29/2013 14:35	1/31/2013 09:10	
1301997-04	MW -115 (7)	Soil		1/29/2013 15:02	1/31/2013 09:10	
1301997-05	MW- 115 (9)	Soil		1/29/2013 15:02	1/31/2013 09:10	
1301997-06	MW- 115 (10)	Soil		1/29/2013 16:10	1/31/2013 09:10	
1301997-07	MW -115 (11)	Soil		1/29/2013 16:12	1/31/2013 09:10	
1301997-08	MW -115 (13)	Soil		1/29/2013 16:12	1/31/2013 09:10	
1301997-09	MW- 115 (15)	Soil		1/29/2013 15:20	1/31/2013 09:10	
1301997-10	MW -115 (17)	Soil		1/29/2013 15:22	1/31/2013 09:10	
1301997-11	MW -115 (19)	Soil		1/29/2013 15:22	1/31/2013 09:10	
1301997-12	MW -115 (20)	Soil		1/29/2013 16:00	1/31/2013 09:10	
1301997-13	MW -115 (21)	Soil		1/29/2013 15:30	1/31/2013 09:10	
1301997-14	MW- 115 (23)	Soil		1/29/2013 15:30	1/31/2013 09:10	
1301997-15	MW-115 (25)	Soil		1/29/2013 15:45	1/31/2013 09:10	
1301997-16	Trip Blank 011813-29	Water		1/29/2013	1/31/2013 09:10	

ALS Environmental

Date: 13-Feb-13

Client: Navajo Refining Company
Project: RO Discharge Sampling

Project: RO Discharge Sampling
Work Order: 1301997

Case Narrative

Your samples received for Radium 226 and Radium 228 are reported on ALS workorder 1302400.

Batch 67579, TPH DRO/ORO, Sample 1302018-01: MS/MSD is for an unrelated sample.

Batch 67523, Metals, Sample 13011005-01: MS/MSD is for an unrelated sample.

Batch 67523, Metals, Sample 13011005-01: Duplicate RPD is for an unrelated sample.

Batch 67656, Low-Level Semivolatile Organics, Sample 1302140-04: MS/MSD is for an unrelated sample.

Batch 67656, Low-Level Semivolatile Organics, Sample 1302140-04: MS/MSD RPD is for an unrelated sample.

Batch R141995, Volatile Organics, Sample MW- 115 (1): MS/MSD recoveries were outside the control limits for Toluene. The associated LCS recoveries and MS/MSD RPD were within the control limits.

Batch R142113, Volatile Organics, Sample 1302069-01: MS/MSD is for an unrelated sample.

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW -115 (1) **Collection Date:** 1/29/2013 02:25 PM

Work Order: 1301997

Lab ID: 1301997-01

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Met	nod: SW8015M		Prep: SW35	41 / 2/5/13	Analyst: KMB
TPH (Oil Range)	1.4	J	0.62	4.2	mg/Kg-dry	1	2/6/2013 14:40
TPH (Diesel Range)	U		0.62	2.1	mg/Kg-dry	1	2/6/2013 14:40
Surr: 2-Fluorobiphenyl	62.8			60-135	%REC	1	2/6/2013 14:40
GASOLINE RANGE ORGANICS - SW	8015C	Met	hod: SW8015				Analyst: KKP
Gasoline Range Organics	U		0.025	0.062	mg/Kg-dry	1	2/5/2013 16:49
Surr: 4-Bromofluorobenzene	94.5			70-130	%REC	1	2/5/2013 16:49
MERCURY - SW7471B		Met	hod: SW7471A		Prep: SW74	71A / 2/5/13	Analyst: OFO
Mercury	18.2		0.36	4.39	μg/Kg-dry	1	2/5/2013 16:05
METALS		Met	hod: SW6020		Prep: SW30	50A / 2/4/13	Analyst: SKS
Aluminum	13,800		24	118	mg/Kg-dry	100	2/6/2013 15:31
Arsenic	3.60		0.12	0.591	mg/Kg-dry	1	2/5/2013 16:25
Barium	147		0.094	0.591	mg/Kg-dry	1	2/5/2013 16:25
Boron	6.45		1.7	2.95	mg/Kg-dry	1	2/6/2013 13:16
Cadmium	0.390	J	0.059	0.591	mg/Kg-dry	1	2/5/2013 16:25
Calcium	64,700		1,200	5,910	mg/Kg-dry	100	2/6/2013 15:31
Chromium	12.8		0.11	0.591	mg/Kg-dry	1	2/5/2013 16:25
Cobalt	4.78		0.083	0.591	mg/Kg-dry	1	2/5/2013 16:25
Copper	11.4		0.12	0.591	mg/Kg-dry	1	2/5/2013 16:25
Iron	9,060		12	59.1	mg/Kg-dry	1	2/5/2013 16:25
Lead	23.7		0.059	0.591	mg/Kg-dry	1	2/5/2013 16:25
Manganese	357		12	59.1	mg/Kg-dry	100	2/6/2013 15:31
Molybdenum	0.742		0.18	0.591	mg/Kg-dry	1	2/5/2013 16:25
Nickel	9.67		0.11	0.591	mg/Kg-dry	1	2/5/2013 16:25
Potassium	3,360		15	59.1	mg/Kg-dry	1	2/5/2013 16:25
Selenium	0.949		0.21	0.591	mg/Kg-dry	1	2/5/2013 16:25
Silver	U		0.094	0.591	mg/Kg-dry	1	2/5/2013 16:25
Sodium	327		13	59.1	mg/Kg-dry	1	2/5/2013 16:25
Uranium	U		0.59	0.591	mg/Kg-dry	1	2/5/2013 16:25
Zinc	33.8		0.30	0.591	mg/Kg-dry	1	2/5/2013 16:25
LOW-LEVEL SEMIVOLATILES		Met	hod: SW8270		Prep: SW35	41 / 2/7/13	Analyst: LG
1-Methylnaphthalene	U		2.0	8.1	μg/Kg-dry	1	2/7/2013 17:49
2-Methylnaphthalene	U		2.0	8.1	μg/Kg-dry	1	2/7/2013 17:49
Benzo(a)pyrene	U		2.0	8.1	μg/Kg-dry	1	2/7/2013 17:49
Naphthalene	U		2.0	8.1	μg/Kg-dry	1	2/7/2013 17:49
Surr: 2,4,6-Tribromophenol	59.9			36-126	%REC	1	2/7/2013 17:49
Surr: 2-Fluorobiphenyl	77.2			43-125	%REC	1	2/7/2013 17:49

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW -115 (1) **Collection Date:** 1/29/2013 02:25 PM

Work Order: 1301997

Lab ID: 1301997-01

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual MDI	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 2-Fluorophenol	72.3		37-125	%REC	1	2/7/2013 17:49
Surr: 4-Terphenyl-d14	92.5		32-125	%REC	1	2/7/2013 17:49
Surr: Nitrobenzene-d5	79.6		37-125	%REC	1	2/7/2013 17:49
Surr: Phenol-d6	76.1		40-125	%REC	1	2/7/2013 17:49
VOLATILES - SW8260C		Method: SW82	60			Analyst: WLR
1,1,1-Trichloroethane	U	2.	1 6.2	μg/Kg-dry	1	2/1/2013 11:23
1,1,2,2-Tetrachloroethane	U	0.6	2 6.2	μg/Kg-dry	1	2/1/2013 11:23
1,1,2-Trichloroethane	U	2.	5 6.2	μg/Kg-dry	1	2/1/2013 11:23
1,1-Dichloroethane	U	0.6	2 6.2	μg/Kg-dry	1	2/1/2013 11:23
1,1-Dichloroethene	U	1.	9 6.2	μg/Kg-dry	1	2/1/2013 11:23
1,2-Dibromoethane	U	0.8	6 6.2	μg/Kg-dry	1	2/1/2013 11:23
1,2-Dichloroethane	U	0.7	4 6.2	μg/Kg-dry	1	2/1/2013 11:23
Benzene	U	0.7	4 6.2	μg/Kg-dry	1	2/1/2013 11:23
Carbon tetrachloride	U	1.	5 6.2	μg/Kg-dry	1	2/1/2013 11:23
Chloroform	U	2.	2 6.2	μg/Kg-dry	1	2/1/2013 11:23
Ethylbenzene	U	1.	1 6.2	μg/Kg-dry	1	2/1/2013 11:23
Methylene chloride	U	3.	1 12	μg/Kg-dry	1	2/1/2013 11:23
Tetrachloroethene	U	1.	2 6.2	μg/Kg-dry	1	2/1/2013 11:23
Toluene	U	0.8	6 6.2	μg/Kg-dry	1	2/1/2013 11:23
Trichloroethene	U	2.	0 6.2	μg/Kg-dry	1	2/1/2013 11:23
Vinyl chloride	U	1.	2 2.5	μg/Kg-dry	1	2/1/2013 11:23
Xylenes, Total	U	3.	2 19	μg/Kg-dry	1	2/1/2013 11:23
Surr: 1,2-Dichloroethane-d4	93.0		70-128	%REC	1	2/1/2013 11:23
Surr: 4-Bromofluorobenzene	101		73-126	%REC	1	2/1/2013 11:23
Surr: Dibromofluoromethane	105		71-128	%REC	1	2/1/2013 11:23
Surr: Toluene-d8	101		73-127	%REC	1	2/1/2013 11:23
ANIONS - EPA 300.0 (1993)		Method: E300		Prep: E300	/ 2/5/13	Analyst: JKP
Chloride	58.8	2.	5 6.14	mg/Kg-dry	1	2/5/2013 21:07
Fluoride	5.20	0.3	7 1.23	mg/Kg-dry	1	2/5/2013 21:07
Nitrogen, Nitrate (As N)	U	0.3	7 1.23	mg/Kg-dry	1	2/5/2013 21:07
Nitrogen, Nitrite (As N)	U	0.3	7 1.23	mg/Kg-dry	1	2/5/2013 21:07
Sulfate	1,160	2.	5 6.14	mg/Kg-dry	1	2/5/2013 21:07
Surr: Selenate (surr)	87.1		85-115	%REC	1	2/5/2013 21:07
CYANIDE		Method: SW90	14	Prep: SW90	10C / 2/5/13	Analyst: EDG
Cyanide	U	0.6	9 2.30	mg/Kg-dry	1	2/5/2013 16:30
MOISTURE		Method: SW35	50			Analyst: KAH
Percent Moisture	19.0	0.01	0.0100	wt%	1	2/4/2013 14:30

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW -115 (3)

Collection Date: 1/29/2013 02:30 PM

Date: 13-Feb-13

Work Order: 1301997

Lab ID: 1301997-02

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 26.2
 0.010
 0.0100
 wt%
 1
 2/4/2013 14:30

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW- 115 (5) **Collection Date:** 1/29/2013 02:35 PM

Work Order: 1301997 **Lab ID:** 1301997-03

Matrix: SOIL

Date: 13-Feb-13

Analyses	Result	Qual MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Method: SW7471	A	Prep: SW74	71A / 2/5/13	Analyst: OFO
Mercury	5.69	0.40	4.90	μg/Kg-dry	1	2/5/2013 16:17
METALS		Method: SW6020		Prep: SW30	050A / 2/4/13	Analyst: SKS
Aluminum	13,200	24	120	mg/Kg-dry	100	2/6/2013 15:33
Arsenic	2.42	0.12	0.599	mg/Kg-dry	1	2/5/2013 16:27
Barium	79.7	0.096	0.599	mg/Kg-dry	1	2/5/2013 16:27
Boron	9.03	3.4	5.99	mg/Kg-dry	2	2/6/2013 13:18
Cadmium	0.257	J 0.060	0.599	mg/Kg-dry	1	2/5/2013 16:27
Calcium	90,500	1,200	5,990	mg/Kg-dry	100	2/6/2013 15:33
Chromium	13.0	0.11	0.599	mg/Kg-dry	1	2/5/2013 16:27
Cobalt	4.55	0.084	0.599	mg/Kg-dry	1	2/5/2013 16:27
Copper	7.86	0.12	0.599	mg/Kg-dry	1	2/5/2013 16:27
Iron	8,880	12	59.9	mg/Kg-dry	1	2/5/2013 16:27
Lead	8.22	0.060	0.599	mg/Kg-dry	1	2/5/2013 16:27
Manganese	211	0.12	0.599	mg/Kg-dry	1	2/5/2013 16:27
Molybdenum	0.680	0.18	0.599	mg/Kg-dry	1	2/5/2013 16:27
Nickel	8.77	0.11	0.599	mg/Kg-dry	1	2/5/2013 16:27
Potassium	2,630	16	59.9	mg/Kg-dry	1	2/5/2013 16:27
Selenium	0.843	0.22	0.599	mg/Kg-dry	1	2/5/2013 16:27
Silver	U	0.096	0.599	mg/Kg-dry	1	2/5/2013 16:27
Sodium	216	13	59.9	mg/Kg-dry	1	2/5/2013 16:27
Uranium	0.856	0.60	0.599	mg/Kg-dry	1	2/5/2013 16:27
Zinc	31.4	0.30	0.599	mg/Kg-dry	1	2/5/2013 16:27
ANIONS - EPA 300.0 (1993)		Method: E300		Prep: E300	/ 2/5/13	Analyst: JKP
Chloride	51.5	2.7	6.79	mg/Kg-dry	1	2/5/2013 21:22
Fluoride	5.92	0.41	1.36	mg/Kg-dry	1	2/5/2013 21:22
Nitrogen, Nitrate (As N)	U	0.41	1.36	mg/Kg-dry	1	2/5/2013 21:22
Nitrogen, Nitrite (As N)	U	0.41	1.36	mg/Kg-dry	1	2/5/2013 21:22
Sulfate	1,070	2.7	6.79	mg/Kg-dry	1	2/5/2013 21:22
Surr: Selenate (surr)	86.1		85-115	%REC	1	2/5/2013 21:22
CYANIDE		Method: SW9014		Prep: SW90	10C / 2/5/13	Analyst: EDG
Cyanide	U	0.81	2.71	mg/Kg-dry	1	2/5/2013 16:30
MOISTURE		Method: SW3550				Analyst: KAH
Percent Moisture	26.9	0.010	0.0100	wt%	1	2/4/2013 14:30

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: Collection Date: 1/29/2013 03:02 PM

MW -115 (7)

Date: 13-Feb-13

Work Order: 1301997

Lab ID: 1301997-04

Matrix: SOIL

Report **Dilution Date Analyzed** Limit **Analyses** Result Qual **MDL Factor** Units

Method: SW3550 **MOISTURE** Analyst: KAH 2/4/2013 14:30 **Percent Moisture** 20.9 0.010 0.0100 wt%

Client: Navajo Refining Company

 Project:
 RO Discharge Sampling
 Work Order: 1301997

 Sample ID:
 MW- 115 (9)
 Lab ID: 1301997-05

 Sample ID:
 MW- 115 (9)
 Lab ID: 130199

 Collection Date:
 1/29/2013 03:02 PM
 Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 20.8
 0.010
 0.0100
 wt%
 1
 2/4/2013 14:30

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW- 115 (10) **Collection Date:** 1/29/2013 04:10 PM

Work Order: 1301997

Lab ID: 1301997-06

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Metho	d: SW7471 A	<u> </u>	Prep: SW74	71A / 2/5/13	Analyst: OFO
Mercury	14.6		0.34	4.22	μg/Kg-dry	1	2/5/2013 16:19
METALS		Metho	d: SW6020		Prep: SW30	50A / 2/4/13	Analyst: SKS
Aluminum	12,100		23	117	mg/Kg-dry	100	2/6/2013 15:35
Arsenic	2.90		0.12	0.587	mg/Kg-dry	1	2/5/2013 16:34
Barium	120		0.094	0.587	mg/Kg-dry	1	2/5/2013 16:34
Boron	6.04		1.6	2.94	mg/Kg-dry	1	2/6/2013 13:21
Cadmium	0.449	J	0.059	0.587	mg/Kg-dry	1	2/5/2013 16:34
Calcium	63,400		1,200	5,870	mg/Kg-dry	100	2/6/2013 15:35
Chromium	14.3		0.11	0.587	mg/Kg-dry	1	2/6/2013 13:21
Cobalt	4.70		0.082	0.587	mg/Kg-dry	1	2/5/2013 16:34
Copper	15.5		0.12	0.587	mg/Kg-dry	1	2/5/2013 16:34
Iron	8,210		12	58.7	mg/Kg-dry	1	2/5/2013 16:34
Lead	44.9		0.059	0.587	mg/Kg-dry	1	2/5/2013 16:34
Manganese	175		0.12	0.587	mg/Kg-dry	1	2/5/2013 16:34
Molybdenum	0.614		0.18	0.587	mg/Kg-dry	1	2/5/2013 16:34
Nickel	9.68		0.11	0.587	mg/Kg-dry	1	2/5/2013 16:34
Potassium	3,490		15	58.7	mg/Kg-dry	1	2/5/2013 16:34
Selenium	1.20		0.21	0.587	mg/Kg-dry	1	2/5/2013 16:34
Silver	0.110	J	0.094	0.587	mg/Kg-dry	1	2/5/2013 16:34
Sodium	288		13	58.7	mg/Kg-dry	1	2/5/2013 16:34
Uranium	U		0.59	0.587	mg/Kg-dry	1	2/5/2013 16:34
Zinc	37.9		0.29	0.587	mg/Kg-dry	1	2/5/2013 16:34
ANIONS - EPA 300.0 (1993)		Metho	d: E300		Prep: E300	/ 2/5/13	Analyst: JKP
Chloride	55.0		2.5	6.17	mg/Kg-dry	1	2/5/2013 22:05
Fluoride	7.73		0.37	1.23	mg/Kg-dry	1	2/5/2013 22:05
Nitrogen, Nitrate (As N)	U		0.37	1.23	mg/Kg-dry	1	2/5/2013 22:05
Nitrogen, Nitrite (As N)	U		0.37	1.23	mg/Kg-dry	1	2/5/2013 22:05
Sulfate	722		2.5	6.17	mg/Kg-dry	1	2/5/2013 22:05
Surr: Selenate (surr)	88.8			85-115	%REC	1	2/5/2013 22:05
CYANIDE		Metho	d: SW9014		Prep: SW90	10C / 2/5/13	Analyst: EDG
Cyanide	U		0.73	2.43	mg/Kg-dry	1	2/5/2013 16:30
MOISTURE		Metho	d: SW3550				Analyst: KAH
Percent Moisture	19.9		0.010	0.0100	wt%	1	2/4/2013 14:30

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1301997

 Sample ID: MW -115 (11)
 Lab ID: 1301997-07

Collection Date: 1/29/2013 04:12 PM

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 12.6
 0.010
 0.0100
 wt%
 1
 2/4/2013 14:30

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1301997

 Sample ID:
 MW -115 (13)
 Lab ID: 1301997-08

Collection Date: 1/29/2013 04:12 PM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 24.8
 0.010
 0.0100
 wt%
 1
 2/4/2013 14:30

Client: Navajo Refining Company

Project: RO Discharge Sampling **Sample ID:** MW- 115 (15)

Collection Date: 1/29/2013 03:20 PM

Work Order: 1301997

Lab ID: 1301997-09

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Meth	nod: SW7471A		Prep: SW74	71A / 2/5/13	Analyst: OFO
Mercury	U		0.34	4.15	μg/Kg-dry	1	2/5/2013 16:21
METALS		Meth	nod: SW6020		Prep: SW30	50A / 2/4/13	Analyst: SKS
Aluminum	4,980		22	110	mg/Kg-dry	100	2/6/2013 15:38
Arsenic	0.893		0.11	0.549	mg/Kg-dry	1	2/5/2013 16:37
Barium	458		8.8	54.9	mg/Kg-dry	100	2/6/2013 15:38
Boron	3.78	J	3.1	5.49	mg/Kg-dry	2	2/6/2013 13:23
Cadmium	0.117	J	0.055	0.549	mg/Kg-dry	1	2/5/2013 16:37
Calcium	157,000		1,100	5,490	mg/Kg-dry	100	2/6/2013 15:38
Chromium	5.84		0.20	1.10	mg/Kg-dry	2	2/6/2013 13:23
Cobalt	1.62		0.077	0.549	mg/Kg-dry	1	2/5/2013 16:37
Copper	1.31		0.11	0.549	mg/Kg-dry	1	2/5/2013 16:37
Iron	3,200		11	54.9	mg/Kg-dry	1	2/5/2013 16:37
Lead	3.28		0.055	0.549	mg/Kg-dry	1	2/5/2013 16:37
Manganese	62.9		0.11	0.549	mg/Kg-dry	1	2/5/2013 16:37
Molybdenum	U		0.16	0.549	mg/Kg-dry	1	2/5/2013 16:37
Nickel	3.12		0.099	0.549	mg/Kg-dry	1	2/5/2013 16:37
Potassium	860		14	54.9	mg/Kg-dry	1	2/5/2013 16:37
Selenium	0.348	J	0.20	0.549	mg/Kg-dry	1	2/5/2013 16:37
Silver	U		0.088	0.549	mg/Kg-dry	1	2/5/2013 16:37
Sodium	122		12	54.9	mg/Kg-dry	1	2/5/2013 16:37
Uranium	U		0.55	0.549	mg/Kg-dry	1	2/5/2013 16:37
Zinc	8.52		0.27	0.549	mg/Kg-dry	1	2/5/2013 16:37
ANIONS - EPA 300.0 (1993)		Meth	nod: E300		Prep: E300	/ 2/5/13	Analyst: JKP
Chloride	49.1		2.4	5.93	mg/Kg-dry	1	2/5/2013 22:20
Fluoride	3.85		0.36	1.19	mg/Kg-dry	1	2/5/2013 22:20
Nitrogen, Nitrate (As N)	U		0.36	1.19	mg/Kg-dry	1	2/5/2013 22:20
Nitrogen, Nitrite (As N)	U		0.36	1.19	mg/Kg-dry	1	2/5/2013 22:20
Sulfate	383		2.4	5.93	mg/Kg-dry	1	2/5/2013 22:20
Surr: Selenate (surr)	85.2			85-115	%REC	1	2/5/2013 22:20
CYANIDE		Meth	nod: SW9014		Prep: SW90	10C / 2/5/13	Analyst: EDG
Cyanide	U		0.69	2.30	mg/Kg-dry	1	2/5/2013 16:30
MOISTURE		Meth	nod: SW3550				Analyst: KAH
Percent Moisture	16.3		0.010	0.0100	wt%	1	2/4/2013 14:30

Client: Navajo Refining Company

Project: RO Discharge Sampling Work Order: 1301997

 Sample ID:
 MW -115 (17)
 Lab ID:
 1301997-10

 Collection Date:
 1/29/2013 03:22 PM
 Matrix:
 SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 21.1
 0.010
 0.0100
 wt%
 1
 2/4/2013 14:30

Client: Navajo Refining Company

 Project:
 RO Discharge Sampling
 Work Order: 1301997

 Sample ID:
 MW -115 (19)
 Lab ID: 1301997-11

 Sample ID:
 MW -115 (19)
 Lab ID: 13019

 Collection Date:
 1/29/2013 03:22 PM
 Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 20.9
 0.010
 0.0100
 wt%
 1
 2/4/2013 14:30

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW -115 (20) **Collection Date:** 1/29/2013 04:00 PM

Work Order: 1301997

Lab ID: 1301997-12

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Meth	nod: SW7471A		Prep: SW74	71A / 2/5/13	Analyst: OFO
Mercury	U		0.35	4.35	μg/Kg-dry	1	2/5/2013 16:23
METALS		Meth	nod: SW6020		Prep: SW30	50A / 2/4/13	Analyst: SKS
Aluminum	10,300		23	115	mg/Kg-dry	100	2/6/2013 15:40
Arsenic	2.53		0.11	0.573	mg/Kg-dry	1	2/5/2013 16:39
Barium	179		0.092	0.573	mg/Kg-dry	1	2/5/2013 16:39
Boron	4.85	J	3.2	5.73	mg/Kg-dry	2	2/6/2013 13:26
Cadmium	0.251	J	0.057	0.573	mg/Kg-dry	1	2/5/2013 16:39
Calcium	161,000		1,100	5,730	mg/Kg-dry	100	2/6/2013 15:40
Chromium	9.21		0.21	1.15	mg/Kg-dry	2	2/6/2013 13:26
Cobalt	3.70		0.080	0.573	mg/Kg-dry	1	2/5/2013 16:39
Copper	3.30		0.11	0.573	mg/Kg-dry	1	2/5/2013 16:39
Iron	7,710		11	57.3	mg/Kg-dry	1	2/5/2013 16:39
Lead	7.03		0.057	0.573	mg/Kg-dry	1	2/5/2013 16:39
Manganese	132		0.11	0.573	mg/Kg-dry	1	2/5/2013 16:39
Molybdenum	0.228	J	0.17	0.573	mg/Kg-dry	1	2/5/2013 16:39
Nickel	6.69		0.10	0.573	mg/Kg-dry	1	2/5/2013 16:39
Potassium	1,690		15	57.3	mg/Kg-dry	1	2/5/2013 16:39
Selenium	0.699		0.21	0.573	mg/Kg-dry	1	2/5/2013 16:39
Silver	U		0.092	0.573	mg/Kg-dry	1	2/5/2013 16:39
Sodium	186		13	57.3	mg/Kg-dry	1	2/5/2013 16:39
Uranium	U		0.57	0.573	mg/Kg-dry	1	2/5/2013 16:39
Zinc	20.5		0.29	0.573	mg/Kg-dry	1	2/5/2013 16:39
ANIONS - EPA 300.0 (1993)		Meth	nod: E300		Prep: E300	/ 2/5/13	Analyst: JKP
Chloride	51.6		2.5	6.15	mg/Kg-dry	1	2/5/2013 22:34
Fluoride	5.04		0.37	1.23	mg/Kg-dry	1	2/5/2013 22:34
Nitrogen, Nitrate (As N)	U		0.37	1.23	mg/Kg-dry	1	2/5/2013 22:34
Nitrogen, Nitrite (As N)	U		0.37	1.23	mg/Kg-dry	1	2/5/2013 22:34
Sulfate	463		2.5	6.15	mg/Kg-dry	1	2/5/2013 22:34
Surr: Selenate (surr)	86.1			85-115	%REC	1	2/5/2013 22:34
CYANIDE		Meth	nod: SW9014		Prep: SW90	10C / 2/5/13	Analyst: EDG
Cyanide	U		0.69	2.30	mg/Kg-dry	1	2/5/2013 16:30
MOISTURE		Meth	nod: SW3550				Analyst: KAH
Percent Moisture	18.9		0.010	0.0100	wt%	1	2/4/2013 14:30

Client: Navajo Refining Company

Project: RO Discharge Sampling

Lab ID: 1301997-13 **Sample ID:** MW -115 (21) Matrix: SOIL

Collection Date: 1/29/2013 03:30 PM

Report **Dilution Date Analyzed** Limit **Analyses** Result Qual **MDL Factor** Units

Date: 13-Feb-13

Work Order: 1301997

Method: SW3550 **MOISTURE** Analyst: KAH 2/4/2013 14:30 **Percent Moisture** 26.3 0.010 0.0100 wt%

Client: Navajo Refining Company

Project: RO Discharge Sampling Work Order: 1301997

 Sample ID:
 MW- 115 (23)
 Lab ID:
 1301997-14

 Collection Date:
 1/29/2013 03:30 PM
 Matrix:
 SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 25.0
 0.010
 0.0100
 wt%
 1
 2/4/2013 14:30

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-115 (25) **Collection Date:** 1/29/2013 03:45 PM

Work Order: 1301997

Lab ID: 1301997-15

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Metl	hod: SW8015M		Prep: SW35	41 / 2/5/13	Analyst: KMB
TPH (Oil Range)	0.77	J	0.63	4.3	mg/Kg-dry	1	2/6/2013 15:03
TPH (Diesel Range)	U		0.63	2.1	mg/Kg-dry	1	2/6/2013 15:03
Surr: 2-Fluorobiphenyl	66.7			60-135	%REC	1	2/6/2013 15:03
GASOLINE RANGE ORGANICS - SW80)15C	Metl	hod: SW8015				Analyst: KKP
Gasoline Range Organics	U		0.025	0.063	mg/Kg-dry	1	2/5/2013 17:08
Surr: 4-Bromofluorobenzene	95.3			70-130	%REC	1	2/5/2013 17:08
MERCURY - SW7471B		Metl	hod: SW7471A		Prep: SW74	71A / 2/5/13	Analyst: OFO
Mercury	U		0.36	4.49	μg/Kg-dry	1	2/5/2013 16:25
METALS		Metl	hod: SW6020		Prep: SW30	50A / 2/4/13	Analyst: SKS
Aluminum	5,210		22	112	mg/Kg-dry	100	2/6/2013 15:43
Arsenic	1.05		0.11	0.558	mg/Kg-dry	1	2/5/2013 16:42
Barium	68.0		0.089	0.558	mg/Kg-dry	1	2/5/2013 16:42
Boron	U		7.8	13.9	mg/Kg-dry	5	2/6/2013 13:28
Cadmium	0.173	J	0.056	0.558	mg/Kg-dry	1	2/5/2013 16:42
Calcium	219,000		1,100	5,580	mg/Kg-dry	100	2/6/2013 15:43
Chromium	5.52		0.50	2.79	mg/Kg-dry	5	2/6/2013 13:28
Cobalt	1.33		0.078	0.558	mg/Kg-dry	1	2/5/2013 16:42
Copper	1.19		0.11	0.558	mg/Kg-dry	1	2/5/2013 16:42
Iron	2,980		11	55.8	mg/Kg-dry	1	2/5/2013 16:42
Lead	3.73		0.056	0.558	mg/Kg-dry	1	2/5/2013 16:42
Manganese	48.0		0.11	0.558	mg/Kg-dry	1	2/5/2013 16:42
Molybdenum	U		0.17	0.558	mg/Kg-dry	1	2/5/2013 16:42
Nickel	2.74		0.10	0.558	mg/Kg-dry	1	2/5/2013 16:42
Potassium	773		15	55.8	mg/Kg-dry	1	2/5/2013 16:42
Selenium	0.428	J	0.20	0.558	mg/Kg-dry	1	2/5/2013 16:42
Silver	U		0.089	0.558	mg/Kg-dry	1	2/5/2013 16:42
Sodium	129		12	55.8	mg/Kg-dry	1	2/5/2013 16:42
Uranium	U		0.56	0.558	mg/Kg-dry	1	2/5/2013 16:42
Zinc	8.99		0.28	0.558	mg/Kg-dry	1	2/5/2013 16:42
LOW-LEVEL SEMIVOLATILES		Metl	hod: SW8270		Prep: SW35	41 / 2/7/13	Analyst: LG
1-Methylnaphthalene	U		2.0	8.3	μg/Kg-dry	1	2/7/2013 18:11
2-Methylnaphthalene	U		2.0	8.3	μg/Kg-dry	1	2/7/2013 18:11
Benzo(a)pyrene	U		2.0	8.3	μg/Kg-dry	1	2/7/2013 18:11
Naphthalene	U		2.0	8.3	μg/Kg-dry	1	2/7/2013 18:11
Surr: 2,4,6-Tribromophenol	42.0			36-126	%REC	1	2/7/2013 18:11
Surr: 2-Fluorobiphenyl	57.7			43-125	%REC	1	2/7/2013 18:11

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-115 (25) **Collection Date:** 1/29/2013 03:45 PM

Work Order: 1301997

Lab ID: 1301997-15

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual M	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 2-Fluorophenol	46.4			37-125	%REC	1	2/7/2013 18:11
Surr: 4-Terphenyl-d14	71.0			32-125	%REC	1	2/7/2013 18:11
Surr: Nitrobenzene-d5	59.5			37-125	%REC	1	2/7/2013 18:11
Surr: Phenol-d6	55.0			40-125	%REC	1	2/7/2013 18:11
VOLATILES - SW8260C		Method: S	W8260				Analyst: WLR
1,1,1-Trichloroethane	U		2.1	6.3	μg/Kg-dry	1	2/1/2013 12:55
1,1,2,2-Tetrachloroethane	U		0.63	6.3	μg/Kg-dry	1	2/1/2013 12:55
1,1,2-Trichloroethane	U		2.5	6.3	μg/Kg-dry	1	2/1/2013 12:55
1,1-Dichloroethane	U		0.63	6.3	μg/Kg-dry	1	2/1/2013 12:55
1,1-Dichloroethene	U		1.9	6.3	μg/Kg-dry	1	2/1/2013 12:55
1,2-Dibromoethane	U		0.89	6.3	μg/Kg-dry	1	2/1/2013 12:55
1,2-Dichloroethane	U		0.76	6.3	μg/Kg-dry	1	2/1/2013 12:55
Benzene	U		0.76	6.3	μg/Kg-dry	1	2/1/2013 12:55
Carbon tetrachloride	U		1.5	6.3	μg/Kg-dry	1	2/1/2013 12:55
Chloroform	U		2.3	6.3	μg/Kg-dry	1	2/1/2013 12:55
Ethylbenzene	U		1.1	6.3	μg/Kg-dry	1	2/1/2013 12:55
Methylene chloride	U		3.2	13	μg/Kg-dry	1	2/1/2013 12:55
Tetrachloroethene	U		1.3	6.3	μg/Kg-dry	1	2/1/2013 12:55
Toluene	U		0.89	6.3	μg/Kg-dry	1	2/1/2013 12:55
Trichloroethene	U		2.0	6.3	μg/Kg-dry	1	2/1/2013 12:55
Vinyl chloride	U		1.3	2.5	μg/Kg-dry	1	2/1/2013 12:55
Xylenes, Total	U		3.3	19	μg/Kg-dry	1	2/1/2013 12:55
Surr: 1,2-Dichloroethane-d4	84.3			70-128	%REC	1	2/1/2013 12:55
Surr: 4-Bromofluorobenzene	88.2			73-126	%REC	1	2/1/2013 12:55
Surr: Dibromofluoromethane	96.3			71-128	%REC	1	2/1/2013 12:55
Surr: Toluene-d8	101			73-127	%REC	1	2/1/2013 12:55
ANIONS - EPA 300.0 (1993)		Method: E	300		Prep: E300	2/5/13	Analyst: JKP
Chloride	50.4		2.5	6.20	mg/Kg-dry	1	2/5/2013 22:49
Fluoride	3.55		0.37	1.24	mg/Kg-dry	1	2/5/2013 22:49
Nitrogen, Nitrate (As N)	U		0.37	1.24	mg/Kg-dry	1	2/5/2013 22:49
Nitrogen, Nitrite (As N)	U		0.37	1.24	mg/Kg-dry	1	2/5/2013 22:49
Sulfate	326		2.5	6.20	mg/Kg-dry	1	2/5/2013 22:49
Surr: Selenate (surr)	85.6			85-115	%REC	1	2/5/2013 22:49
CYANIDE		Method: S	W9014		Prep: SW90	10C / 2/5/13	Analyst: EDG
Cyanide	U		0.76	2.52	mg/Kg-dry	1	2/5/2013 16:30
MOISTURE		Method: S	W3550				Analyst: KAH
Percent Moisture	20.9		0.010	0.0100	wt%	1	2/4/2013 14:30

Client: Navajo Refining Company
Project: RO Discharge Sampling

Sample ID: Trip Blank 011813-29

Collection Date: 1/29/2013

Work Order: 1301997

Lab ID: 1301997-16

Date: 13-Feb-13

Matrix: WATER

Analyses	Result Q	Qual MDL	Report Limit	Units	Dilution Factor	Date Analyzed
LOW LEVEL VOLATILES - SW8260C		Method: SW8260				Analyst: AKP
1,1,1-Trichloroethane	U	0.00030	0.0010	mg/L	1	2/4/2013 16:55
1,1,2,2-Tetrachloroethane	U	0.00050	0.0010	mg/L	1	2/4/2013 16:55
1,1,2-Trichloroethane	U	0.00030	0.0010	mg/L	1	2/4/2013 16:55
1,1-Dichloroethane	U	0.00030	0.0010	mg/L	1	2/4/2013 16:55
1,1-Dichloroethene	U	0.00050	0.0010	mg/L	1	2/4/2013 16:55
1,2-Dibromoethane	U	0.00030	0.0010	mg/L	1	2/4/2013 16:55
1,2-Dichloroethane	U	0.00030	0.0010	mg/L	1	2/4/2013 16:55
Benzene	U	0.00020	0.0010	mg/L	1	2/4/2013 16:55
Carbon tetrachloride	U	0.00030	0.0010	mg/L	1	2/4/2013 16:55
Chloroform	U	0.00030	0.0010	mg/L	1	2/4/2013 16:55
Ethylbenzene	U	0.00030	0.0010	mg/L	1	2/4/2013 16:55
Methylene chloride	U	0.00040	0.0020	mg/L	1	2/4/2013 16:55
Tetrachloroethene	U	0.00040	0.0010	mg/L	1	2/4/2013 16:55
Toluene	U	0.00030	0.0010	mg/L	1	2/4/2013 16:55
Trichloroethene	U	0.00020	0.0010	mg/L	1	2/4/2013 16:55
Vinyl chloride	U	0.00040	0.0010	mg/L	1	2/4/2013 16:55
Xylenes, Total	U	0.00030	0.0010	mg/L	1	2/4/2013 16:55
Surr: 1,2-Dichloroethane-d4	91.5		71-125	%REC	1	2/4/2013 16:55
Surr: 4-Bromofluorobenzene	96.6		70-125	%REC	1	2/4/2013 16:55
Surr: Dibromofluoromethane	99.5		74-125	%REC	1	2/4/2013 16:55
Surr: Toluene-d8	98.6		78-123	%REC	1	2/4/2013 16:55

Client: Navajo Refining Company

Work Order: 1301997

Project: RO Discharge Sampling

Date: 13-Feb-13

QC BATCH REPORT

	Instrument ID FID-7		Metho	d: SW8015 I	И					
MBLK Sample ID:	FBLKS1-130205-67579				Units: mg/	Kg	Analysis	Date: 2/	6/2013 11	:56 AM
Client ID:	Run I	D: FID-7_1	130206A	8	SeqNo: 310 4	4153	Prep Date: 2/5/2	013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Oil Range)	U	3.4								
TPH (Diesel Range)	U	1.7								
Surr: 2-Fluorobiphenyl	2.092	0.10	3.33	0	62.8	60-135	0			
LCS Sample ID:	FLCSS1-130205-67579				Units: mg/	Kg	Analysis	Date: 2/	6/2013 12	:19 PM
Client ID:	Run I	D: FID-7_1	130206A	5	SeqNo: 310 4	4154	Prep Date: 2/5/2	013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Oil Range)	27.05	3.4	33.33	0	81.2	70-130	0			
TPH (Diesel Range)	35.72	1.7	33.33	0	107	70-130	0			
Surr: 2-Fluorobiphenyl	2.536	0.10	3.33	0	76.2	60-135	0			
MS Sample ID:	1302018-01BMS				Units: mg/	Kg	Analysis	Date: 2/	6/2013 01	:06 PM
Client ID:	Run I	D: FID-7 _1	130206A	S	SeqNo: 310 4	4156	Prep Date: 2/5/2		DF: 1	
						0				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
·	Result 229.1	PQL 3.4	SPK Val					%RPD		Qual SEO
TPH (Oil Range)				Value	28.1	Limit	Value	%RPD		
TPH (Oil Range)	229.1	3.4	33.23	Value 219.8	28.1	Limit 70-130	Value 0	%RPD		SEO
TPH (Oil Range) TPH (Diesel Range) Surr: 2-Fluorobiphenyl	229.1 80.52	3.4	33.23 33.23	Value 219.8 75.45	28.1	70-130 70-130 <i>60-135</i>	Value 0 0 0			SEO SE
TPH (Oil Range) TPH (Diesel Range) Surr: 2-Fluorobiphenyl MSD Sample ID:	229.1 80.52 2.284 1302018-01BMSD	3.4	33.23 33.23 3.32	Value 219.8 75.45 0	28.1 15.3 68.8	70-130 70-130 60-135	Value 0 0 0	Date: 2/	Limit	SEO SE
TPH (Oil Range) TPH (Diesel Range) Surr: 2-Fluorobiphenyl MSD Sample ID:	229.1 80.52 2.284 1302018-01BMSD	3.4 1.7 0.10	33.23 33.23 3.32	Value 219.8 75.45 0	28.1 15.3 68.8 Units: mg/	70-130 70-130 60-135	Value 0 0 0 Analysis	Date: 2/	Limit 6/2013 01	SEO SE
TPH (Oil Range) TPH (Diesel Range) Surr: 2-Fluorobiphenyl MSD Sample ID: Client ID:	229.1 80.52 2.284 1302018-01BMSD	3.4 1.7 0.10	33.23 33.23 3.32	Value 219.8 75.45 0	28.1 15.3 68.8 Units: mg/	70-130 70-130 60-135 Kg	Value 0 0 0 Analysis Prep Date: 2/5/2	Date: 2/	Limit 6/2013 01 DF: 1	SEO SE
TPH (Oil Range) TPH (Diesel Range) Surr: 2-Fluorobiphenyl MSD Sample ID: Client ID: Analyte	229.1 80.52 2.284 1302018-01BMSD	3.4 1.7 0.10 D: FID-7 _1	33.23 33.23 3.32 3.32	Value 219.8 75.45 0	28.1 15.3 68.8 Units: mg/ SeqNo: 3104	70-130 70-130 60-135 Kg 4157 Control	Value 0 0 0 Analysis Prep Date: 2/5/20 RPD Ref	Date: 2/	Limit 6/2013 01 DF: 1 RPD	SEO SE :29 PM
	229.1 80.52 2.284 1302018-01BMSD Run II	3.4 1.7 0.10 D: FID-7_ 1	33.23 33.23 3.32 130206A SPK Val	Value 219.8 75.45 0 SPK Ref Value	28.1 15.3 68.8 Units: mg/ SeqNo: 3104 %REC -37.7	70-130 70-130 60-135 Kg 4157 Control Limit	Value 0 0 0 Analysis Prep Date: 2/5/20 RPD Ref Value	5 Date: 2/ 013 %RPD	6/2013 01 DF: 1 RPD Limit	SEO SE :29 PM
TPH (Oil Range) TPH (Diesel Range) Surr: 2-Fluorobiphenyl MSD Sample ID: Client ID: Analyte TPH (Oil Range)	229.1 80.52 2.284 1302018-01BMSD Run II Result 207.2	3.4 1.7 0.10 D: FID-7_ 1 PQL 3.4	33.23 33.23 3.32 30206A SPK Val 33.24	219.8 75.45 0 SPK Ref Value	28.1 15.3 68.8 Units: mg/ SeqNo: 3104 %REC -37.7 3.32	70-130 70-135 Kg 4157 Control Limit 70-130	Value 0 0 0 Analysis Prep Date: 2/5/20 RPD Ref Value 229.1	5 Date: 2/ 013 %RPD	6/2013 01 DF: 1 RPD Limit 30 30	SEO SE :29 PM Qual SEO

Note:

Client: Navajo Refining Company

Work Order: 1301997

Project: RO Discharge Sampling

Batch ID: R142225 Instrume	nt ID FID-9		Metho	d: SW801	5						
MBLK Sample ID: GBLKS-13	0205-R142225				Ĺ	Jnits: mg/ l	Kg	Analysi	s Date: 2/	5/2013 01	:02 PN
Client ID:	Run	ID: FID-9 _1	130205A		Se	qNo: 310 3	3619	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	U	0.050	0.4		•	00.7	70.400	0			
Surr: 4-Bromofluorobenzene	0.08374	0.0050	0.1		0	83.7	70-130	0			
LCS Sample ID: GLCSS-13	0205-R142225				L	Jnits: mg/ l	Kg	Analysi	s Date: 2/	5/2013 12	:25 PM
Client ID:	Run	ID: FID-9 _1	130205A		Se	qNo: 310 3	3613	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.942	0.050	1		0	94.2	70-130	0			
Surr: 4-Bromofluorobenzene	0.09701	0.0050	0.1		0	97	70-130	0			
LCSD Sample ID: GLCSDS-1	30205-R142225				l	Jnits: mg/	Kg	Analysi	s Date: 2/	5/2013 12	:44 PM
Client ID:	Run	ID: FID-9 _1	130205A		Se	qNo: 310 3	3616	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.9525	0.050	1		0	95.2	70-130	0.942	1.11	30	
Surr: 4-Bromofluorobenzene	0.09686	0.0050	0.1		0	96.9	70-130	0.09701	0.146	30	
MS Sample ID: 1302018-0-	4ZMS				l	Jnits: mg/	Kg	Analysi	s Date: 2/	5/2013 04	:11 PM
Client ID:	Run	ID: FID-9 _1	130205A		Se	qNo: 310 3	3628	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.8005	0.050	1		0	80	70-130	0			
Surr: 4-Bromofluorobenzene	0.08728	0.0050	0.1		0	87.3	70-130	0			
MSD Sample ID: 1302018-0-	4ZMSD				l	Jnits: mg/	Kg	Analysi	s Date: 2/	5/2013 04	:30 PM
Client ID:	Run	ID: FID-9 _1	130205A		Se	qNo: 310 3	3632	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
•					0						Quui
Gasoline Range Organics Surr: 4-Bromofluorobenzene	0.8125 0.08872	0.050 0.0050	1 0.1		0	81.2 <i>88.7</i>	70-130 70-130	0.8005 0.08728	1.49 <i>1.64</i>	30 <i>30</i>	
					-						

Note:

Client: Navajo Refining Company

Work Order: 1301997

Sodium

Note:

Project: RO Discharge Sampling

Batch ID: 675	23 Instrument ID ICPMS05		Method	SW602	20					
MBLK	Sample ID: MBLKS1-020113-67523				Units: mg/	Kg	Analy	sis Date: 2	/5/2013 03	3:05 PN
Client ID:	Run	ID: ICPMS	05_130205A		SeqNo: 310 2	2200	Prep Date: 2/4	l/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Aluminum	0.4165	1.0								J
Arsenic	U	0.50								
Barium	U	0.50								
Cadmium	U	0.50								
Calcium	U	50								
Chromium	U	0.50								
Cobalt	U	0.50								
Copper	U	0.50								
Iron	U	50								
Lead	U	0.50								
Manganese	U	0.50								
Molybdenum	U	0.50								
Nickel	U	0.50								
Potassium	U	50								
Selenium	U	0.50								
Silver	U	0.50								
Uranium	U	0.50								
Zinc	U	0.50								
MBLK	Sample ID: MBLKS1-020113-67523				Units: mg/	Kg	Analy	sis Date: 2	/6/2013 12	2:35 PN
Client ID:	Run	ID: ICPMS	05_130206A		SeqNo: 310	3603	Prep Date: 2/4	1/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
	U	2.5								

U

50

Client: Navajo Refining Company

Work Order: 1301997

Boron

Note:

Sodium

Project: RO Discharge Sampling

Batch ID: 675	23 Instrument ID ICPMS05		Method:	SW602	20					
LCS	Sample ID: MLCSS1-020113-67523				ι	Jnits: mg/	Kg	Analysis Date	: 2/5/2013 0	3:08 PM
Client ID:	Run	ID: ICPMS	05_130205A		Se	qNo: 310 2	2201	Prep Date: 2/4/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value %RP	RPD Limit	Qual
Aluminum	10.68	1.0	10		0	107	80-120	0		
Arsenic	9.673	0.50	10		0	96.7	80-120	0		
Barium	10.35	0.50	10		0	104	80-120	0		
Cadmium	9.748	0.50	10		0	97.5	80-120	0		
Calcium	992.3	50	1000		0	99.2	80-120	0		
Chromium	9.832	0.50	10		0	98.3	80-120	0		
Cobalt	9.927	0.50	10		0	99.3	80-120	0		
Copper	10.12	0.50	10		0	101	80-120	0		
Iron	974.8	50	1000		0	97.5	80-120	0		
Lead	9.786	0.50	10		0	97.9	80-120	0		
Manganese	9.681	0.50	10		0	96.8	80-120	0		
Molybdenum	9.985	0.50	10		0	99.8	80-120	0		
Nickel	9.83	0.50	10		0	98.3	80-120	0		
Potassium	956.7	50	1000		0	95.7	80-120	0		
Selenium	9.813	0.50	10		0	98.1	80-120	0		
Silver	10.22	0.50	10		0	102	80-120	0		
Uranium	9.429	0.50	10		0	94.3	80-120	0		
Zinc	9.937	0.50	10		0	99.4	80-120	0		
LCS	Sample ID: MLCSS1-020113-67523				Ĺ	Jnits: mg/	Kg	Analysis Date	: 2/6/2013 12	2:38 PN
Client ID:	Run	ID: ICPMS	05_130206A		Se	qNo: 310 3	3604	Prep Date: 2/4/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value %RP	RPD Limit	Qual

47.92

981.7

2.5

50

50

1000

0

95.8

98.2

80-120

80-120

0

Client: Navajo Refining Company

Work Order: 1301997

Boron

Sodium

Note:

Potassium

Project: RO Discharge Sampling

Batch ID: 675	23 Instrument ID ICI	PMS05		Method	SW6020					
MS	Sample ID: 13011005-01DMS					Units: mg/	Kg	Analysis D	ate: 2/5/2013 0 3	:22 PM
Client ID:		Run ID:	ICPMS	05_130205A	Se	eqNo: 310	2207	Prep Date: 2/4/2013	3 DF: 1	
Analyte	F	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value %	RPD RPD ^{Limit}	Qual
Aluminum		13710	0.84	8.429	12570	13500	75-125	0		SEO
Arsenic		11.71	0.42	8.429	4.385	86.9	75-125	0		
Barium		138.7	0.42	8.429	129.6	107	75-125	0		0
Cadmium		8.001	0.42	8.429	0.4065	90.1	75-125	0		
Calcium	Į.	57470	42	842.9	57640	-19.7	75-125	0		SEO
Chromium		22.67	0.42	8.429	14.02	103	75-125	0		
Cobalt		13.02	0.42	8.429	5.519	89	75-125	0		
Copper		18.8	0.42	8.429	11.12	91.1	75-125	0		
Iron		11500	42	842.9	10120	164	75-125	0		SO
Lead		22.81	0.42	8.429	14.66	96.6	75-125	0		
Manganese		381.8	0.42	8.429	383.5	-20	75-125	0		SEO
Molybdenum		6.315	0.42	8.429	0.5853	68	75-125	0		S
Nickel		19.09	0.42	8.429	11.62	88.6	75-125	0		
Selenium		7.95	0.42	8.429	0.9501	83	75-125	0		
Silver		8.085	0.42	8.429	0.05106	95.3	75-125	0		
Uranium		8.095	0.42	8.429	0.408	91.2	75-125	0		
Zinc		46.05	0.42	8.429	37.34	103	75-125	0		0
MS	Sample ID: 13011005-01DMS					Units: mg/	Kg	Analysis D	ate: 2/6/2013 12	2:50 PM
Client ID:		Run ID:	ICPMS	05_130206A	S	eqNo: 310 :	3618	Prep Date: 2/4/2013	3 DF: 2	
Analyte	F	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value %	RPD RPD ^{Limit}	Qual

39.78

4808

914.3

4.2

84

84

42.14

842.9

842.9

60.18

3553

168.4

-48.4

149

88.5

75-125

75-125

75-125

0

0

0

S

SO

Client: Navajo Refining Company

Work Order: 1301997

Project: RO Discharge Sampling

Batch ID: 675	23 Instrument ID ICPMS05		Method	: SW6020						
MSD	Sample ID: 13011005-01DMSD			l	Jnits: mg/	Kg	Analysi	s Date: 2/	5/2013 03	:25 PM
Client ID:	Run II	D: ICPMS	05_130205A	Se	eqNo: 310	2208	Prep Date: 2/4/2	2013	DF: 1	
				SPK Ref		Control	RPD Ref		RPD	
Analyte	Result	PQL	SPK Val	Value	%REC	Limit	Value	%RPD	Limit	Qual
Aluminum	12110	0.80	7.956	12570	-5790	75-125	13710	12.4	25	SEO
Arsenic	11.34	0.40	7.956	4.385	87.4	75-125	11.71	3.25	25	
Barium	134	0.40	7.956	129.6	54.7	75-125	138.7	3.43	25	SO
Cadmium	7.562	0.40	7.956	0.4065	89.9	75-125	8.001	5.64	25	
Calcium	52910	40	795.6	57640	-594	75-125	57470	8.27	25	SEO
Chromium	20.95	0.40	7.956	14.02	87.1	75-125	22.67	7.88	25	
Cobalt	12.38	0.40	7.956	5.519	86.3	75-125	13.02	5.05	25	
Copper	17.82	0.40	7.956	11.12	84.3	75-125	18.8	5.32	25	
Iron	10370	40	795.6	10120	31.2	75-125	11500	10.3	25	SO
Lead	22.24	0.40	7.956	14.66	95.2	75-125	22.81	2.51	25	
Manganese	389.4	0.40	7.956	383.5	74	75-125	381.8	1.96	25	SEO
Molybdenum	5.373	0.40	7.956	0.5853	60.2	75-125	6.315	16.1	25	S
Nickel	18.17	0.40	7.956	11.62	82.4	75-125	19.09	4.89	25	
Selenium	7.14	0.40	7.956	0.9501	77.8	75-125	7.95	10.7	25	
Silver	7.509	0.40	7.956	0.05106	93.7	75-125	8.085	7.4	25	
Uranium	7.518	0.40	7.956	0.408	89.4	75-125	8.095	7.39	25	
Zinc	44.04	0.40	7.956	37.34	84.2	75-125	46.05	4.46	25	0
MSD	Sample ID: 13011005-01DMSD			l	Jnits: mg/	Kg	Analysi	s Date: 2/	6/2013 12	:52 PM
Client ID:	Run II	D: ICPMS	05_130206A	Se	eqNo: 310	3621	Prep Date: 2/4/2	2013	DF: 2	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	37.07	4.0	39.78	60.18	-58.1	75-125	39.78	7.06	25	S
Potassium	4552	80	795.6	3553	126	75-125	4808	5.48	25	so
Sodium	855.4	80	795.6	168.4	86.4	75-125	914.3	6.65	25	

Note:

Client: Navajo Refining Company

Work Order: 1301997

Project: RO Discharge Sampling

Batch ID: 675	Instrument ID IC	PMS05		Method:	SW602	20						
DUP	Sample ID: 13011005-01DDU	P				U	Inits: mg/ I	Kg	Analysi	s Date: 2/	5/2013 03	:20 PM
Client ID:		Run ID	: ICPMS	05_130205A		Se	qNo: 310 2	2206	Prep Date: 2/4/2	2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic		4.109	0.42	0		0	0	0-0	4.385	6.5	25	
Barium		122.9	0.42	0		0	0	0-0	129.6	5.34	25	
Cadmium		0.3587	0.42	0		0	0	0-0	0.4065	0	25	J
Chromium		13.06	0.42	0		0	0	0-0	14.02	7.09	25	
Cobalt		5.04	0.42	0		0	0	0-0	5.519	9.08	25	
Copper		10.23	0.42	0		0	0	0-0	11.12	8.3	25	
ron		9434	42	0		0	0	0-0	10120	7.01	25	
_ead		14.13	0.42	0		0	0	0-0	14.66	3.72	25	
Molybdenum		0.5423	0.42	0		0	0	0-0	0.5853	7.63	25	
Nickel		10.65	0.42	0		0	0	0-0	11.62	8.76	25	
Selenium		0.8324	0.42	0		0	0	0-0	0.9501	13.2	25	
Silver		U	0.42	0		0	0	0-0	0.05106	0	25	
Jranium		U	0.42	0		0	0		0.408	0	25	
Zinc		34.3	0.42	0		0	0	0-0	37.34	8.48	25	
DUP	Sample ID: 13011005-01DDU	P				U	Inits: mg/ I	Kg	Analysi	s Date: 2/ 9	6/2013 12	:47 PN
Client ID:		Run ID	: ICPMS(05_130206A		Se	qNo: 310 3	3614	Prep Date: 2/4/2	2013	DF: 2	
				;	SPK Ref			Control	RPD Ref		RPD	
Analyte		Result	PQL	SPK Val	Value		%REC	Limit	Value	%RPD	Limit	Qua
Boron		6.159	4.2	0		0	0	0-0	60.18	163	25	R
Potassium		3479	83	0		0	0	0-0	3553	2.09	25	
Sodium		122.9	83	0		0	0	0-0	168.4	31.2	25	R
DUP	Sample ID: 13011005-01DDU	P				U	Inits: mg/ I	Kg	Analysi	s Date: 2/ 0	6/2013 03	:01 PN
Client ID:		Run ID	: ICPMS(05_130206A			qNo: 310 3	_	Prep Date: 2/4/2	2013	DF: 10 0	0
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Aluminum		13720	83	0		0	0	0-0	14570	6.05	25	
Calcium		56380	4,200	0		0	0	0-0	60800	7.55	25	
Manganese		355.2	42	0		0	0	0-0	374.9	5.4	25	
	g samples were analyzed in t		13	01997-01D 01997-09D		3019	97-03D 97-12D	13	01997-06D 01997-15D			

Note:

Client: Navajo Refining Company

Work Order: 1301997

Project: RO Discharge Sampling

Batch ID: 67	7585	Instrument ID HG02		Method	d: SW747	1 A						
MBLK	Sample ID: GI	BLKS1-020513-67585				Units:	μg/K	ζg	Analy	sis Date: 2/	5/2013 04	:01 PN
Client ID:		Run ID	: HG02_	130205A		SeqNo:	3102	2354	Prep Date: 2/5	/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%R	EC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury		U	3.3									
LCS	Sample ID: GI	LCSS1-020513-67585				Units:	μg/K	(g	Analy	sis Date: 2/	5/2013 04	:03 PN
Client ID:		Run ID	: HG02 _	130205A		SeqNo:	3102	2355	Prep Date: 2/5	/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%R	EC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Mercury		332.7	3.3	333.3		0 99	9.8	85-115	()		
MS	Sample ID: 13	801997-01DMS				Units:	μg/K	(g	Analys	sis Date: 2/	5/2013 04	:09 PN
Client ID: M	W -115 (1)	Run ID	: HG02 _	130205A		SeqNo:	3102	2358	Prep Date: 2/5	/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%R	EC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Mercury		376.9	3.5	354.9	14.7	' 6 1	02	85-115	()		
MSD	Sample ID: 13	801997-01DMSD				Units:	μg/K	ίg	Analys	sis Date: 2/	5/2013 04	:11 PN
Client ID: M	W -115 (1)	Run ID	: HG02 _	130205A		SeqNo:	3102	2359	Prep Date: 2/5	/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%R	EC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Mercury		375.1	3.5	354.5	14.7	'6 1	02	85-115	376.9	0.484	20	
DUP	Sample ID: 13	801997-01DDUP				Units:	μg/K	ίg	Analy	sis Date: 2/	5/2013 04	:07 PN
Client ID: M	W -115 (1)	Run ID	: HG02 _	130205A		SeqNo:	3102	2357	Prep Date: 2/5	/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%R	EC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Mercury		15.21	3.6	0		0	0		14.76	3.04	20	
The followi	ng samples wer	re analyzed in this batch:		301997-01D 301997-09D		01997-03 01997-12			01997-06D 01997-15D			

Client: Navajo Refining Company

Work Order: 1301997

Project: RO Discharge Sampling

Batch ID: 67656 Ir	nstrument ID SV-6		Metho	d: SW827	70						
MBLK Sample ID: SB	LKS2-130207-67656				U	Inits: µg/k	(g	Analy	sis Date: 2	/7/2013 04	:24 PM
Client ID:	Run I	ID: SV-6_1 :	30207A		Se	qNo: 310	6635	Prep Date: 2/7	//2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	U	6.6									
2-Methylnaphthalene	U	6.6									
Benzo(a)pyrene	U	6.6									
Naphthalene	U	6.6									
Surr: 2,4,6-Tribromophenol	104.3	6.6	166.7		0	62.6	36-126	()		
Surr: 2-Fluorobiphenyl	132.1	6.6	166.7		0	79.2	43-125	()		
Surr: 2-Fluorophenol	126.1	6.6	166.7		0	75.7	37-125	()		
Surr: 4-Terphenyl-d14	166.2	6.6	166.7		0	99.7	32-125	()		
Surr: Nitrobenzene-d5	134.1	6.6	166.7		0	80.4	37-125	()		
Surr: Phenol-d6	130.7	6.6	166.7		0	78.4	40-125	()		
LCS Sample ID: SL0	CSS2-130207-67656				U	Inits: µg/k	(g	Analy	sis Date: 2	/7/2013 04	:45 PM
Client ID:	Run I	ID: SV-6_1 :	30207A		Se	qNo: 310	6636	Prep Date: 2/7	//2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	131.8	6.6	166.7		0	79.1	50-120	()		

Client ID:	Run II	D: SV-6_1	30207A		Se	qNo: 310	6636	Prep Date: 2/7	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	131.8	6.6	166.7		0	79.1	50-120	()		
2-Methylnaphthalene	133.3	6.6	166.7		0	80	50-120	()		
Benzo(a)pyrene	148.1	6.6	166.7		0	88.8	50-130	()		
Naphthalene	128.1	6.6	166.7		0	76.9	50-125	()		
Surr: 2,4,6-Tribromophenol	125.4	6.6	166.7		0	75.2	36-126	()		
Surr: 2-Fluorobiphenyl	128.4	6.6	166.7		0	77	43-125	()		
Surr: 2-Fluorophenol	122.2	6.6	166.7		0	73.3	37-125	()		
Surr: 4-Terphenyl-d14	159.7	6.6	166.7		0	95.8	32-125	()		
Surr: Nitrobenzene-d5	126.5	6.6	166.7		0	75.9	37-125	()		
Surr: Phenol-d6	122.6	6.6	166.7		0	73.5	40-125	()		

Client: Navajo Refining Company

Work Order: 1301997

Project: RO Discharge Sampling

Batch ID: 67656	Instrument ID SV-6		Metho	d: SW8270						
MS Sample ID:	1302140-04DMS			l	Jnits: µg/k	(g	Analys	is Date: 2/	7/2013 07	:35 PN
Client ID:	R	un ID: SV-6_1	30207A	Se	qNo: 310	6643	Prep Date: 2/7/	2013	DF: 1	
				SPK Ref		Control	RPD Ref		RPD	
Analyte	Result	PQL	SPK Val	Value	%REC	Limit	Value	%RPD	Limit	Qua
1-Methylnaphthalene	129.4	6.6	166.5	6.178	74	50-120	0			
2-Methylnaphthalene	107.7	6.6	166.5	6.039	61	50-120	0			
Benzo(a)pyrene	224.3	6.6	166.5	160.5	38.3	50-130	0			S
Naphthalene	102.2	6.6	166.5	5.73	57.9	50-125	0			
Surr: 2,4,6-Tribromophe	nol 91.94	6.6	166.5	0	55.2	36-126	0			-
Surr: 2-Fluorobiphenyl	106.7	6.6	166.5	0	64.1	43-125	0			
Surr: 2-Fluorophenol	91.1	6.6	166.5	0	54.7	37-125	0			
Surr: 4-Terphenyl-d14	124.5	6.6	166.5	0	74.8	32-125	0			
Surr: Nitrobenzene-d5	105.2	6.6	166.5	0	63.2	37-125	0			
Surr: Phenol-d6	85.27	6.6	166.5	0	51.2	40-125	0			
MSD Sample ID:	1302140-04DMSD			l	Jnits: µg/k	(g	Analys	is Date: 2/	7/2013 07	:56 PN
Client ID:	R	un ID: SV-6_1	30207A	Se	eqNo: 310	6644	Prep Date: 2/7/	2013	DF: 1	
				00110		Control	RPD Ref		RPD	
Analyte				SPK Ref					111 0	
	Result	PQL	SPK Val	Value	%REC	Limit	Value	%RPD	Limit	Qua
1-Methylnaphthalene	Result 183.4	PQL 6.6	SPK Val 166.4		%REC 106		Value 129.4	%RPD 34.5		Qua R
• •				Value		Limit			Limit	
1-Methylnaphthalene 2-Methylnaphthalene Benzo(a)pyrene	183.4	6.6	166.4	Value 6.178	106	Limit 50-120	129.4	34.5	Limit 30 30	
2-Methylnaphthalene	183.4 143.5	6.6 6.6	166.4 166.4	Value 6.178 6.039	106 82.6	50-120 50-120	129.4 107.7	34.5 28.5	Limit 30 30	R
2-Methylnaphthalene Benzo(a)pyrene	183.4 143.5 307.6 132.9	6.6 6.6 6.6	166.4 166.4 166.4	Value 6.178 6.039 160.5	106 82.6 88.4	50-120 50-120 50-130	129.4 107.7 224.3	34.5 28.5 31.3	30 30 30 30 30	R
2-Methylnaphthalene Benzo(a)pyrene Naphthalene	183.4 143.5 307.6 132.9	6.6 6.6 6.6 6.6	166.4 166.4 166.4 166.4	Value 6.178 6.039 160.5 5.73	106 82.6 88.4 76.4	50-120 50-120 50-130 50-125	129.4 107.7 224.3 102.2	34.5 28.5 31.3 26.1	30 30 30 30 30 30	R
2-Methylnaphthalene Benzo(a)pyrene Naphthalene Surr: 2,4,6-Tribromophe	183.4 143.5 307.6 132.9 nol 101.8	6.6 6.6 6.6 6.6	166.4 166.4 166.4 166.4	Value 6.178 6.039 160.5 5.73	106 82.6 88.4 76.4 61.2	50-120 50-120 50-130 50-125 36-126	129.4 107.7 224.3 102.2 91.94	34.5 28.5 31.3 26.1 10.2	30 30 30 30 30 30 30	R
2-Methylnaphthalene Benzo(a)pyrene Naphthalene Surr: 2,4,6-Tribromophe Surr: 2-Fluorobiphenyl	183.4 143.5 307.6 132.9 nol 101.8 123.6	6.6 6.6 6.6 6.6 6.6 6.6	166.4 166.4 166.4 166.4 166.4	Value 6.178 6.039 160.5 5.73 0	106 82.6 88.4 76.4 61.2 74.2	50-120 50-120 50-130 50-125 36-126 43-125	129.4 107.7 224.3 102.2 91.94 106.7	34.5 28.5 31.3 26.1 10.2 14.6	30 30 30 30 30 30 30 30	R
2-Methylnaphthalene Benzo(a)pyrene Naphthalene Surr: 2,4,6-Tribromophe Surr: 2-Fluorobiphenyl Surr: 2-Fluorophenol	183.4 143.5 307.6 132.9 nol 101.8 123.6 108.3	6.6 6.6 6.6 6.6 6.6 6.6	166.4 166.4 166.4 166.4 166.4 166.4	Value 6.178 6.039 160.5 5.73 0 0	106 82.6 88.4 76.4 61.2 74.2 65.1	50-120 50-120 50-130 50-125 36-126 43-125 37-125	129.4 107.7 224.3 102.2 91.94 106.7 91.1	34.5 28.5 31.3 26.1 10.2 14.6	30 30 30 30 30 30 30 30 30	R

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

The following samples were analyzed in this batch:

Note:

QC Page: 10 of 23

1301997-01D

1301997-15D

Client: Navajo Refining Company

Work Order: 1301997

Project: RO Discharge Sampling

Batch ID: R141995	Instrument ID VOA5		Metho	d: SW82 6	60					
MBLK Sample ID: V	/BLKS1-020113-R141995				Units: µg/	Kg	Analy	/sis Date: 2	/1/2013 0	9:52 AM
Client ID:	Run IE): VOA5_	130201A		SeqNo: 309	8471	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	U	5.0								
1,1,2,2-Tetrachloroethane	U	5.0								
1,1,2-Trichloroethane	U	5.0								
1,1-Dichloroethane	U	5.0								
1,1-Dichloroethene	U	5.0								
1,2-Dibromoethane	U	5.0								
1,2-Dichloroethane	U	5.0								
Benzene	U	5.0								
Carbon tetrachloride	U	5.0								
Chloroform	U	5.0								
Ethylbenzene	U	5.0								
Methylene chloride	U	10								
Tetrachloroethene	U	5.0								
Toluene	U	5.0								
Trichloroethene	U	5.0								
Vinyl chloride	U	2.0								
Xylenes, Total	U	15								
Surr: 1,2-Dichloroethane	e-d4 42.8	0	50		0 85.6	70-128	1	0		
Surr: 4-Bromofluorobenz	zene 46.86	0	50		0 93.7	73-126	}	0		
Surr: Dibromofluorometh	nane 48.11	0	50		0 96.2	71-128	1	0		
Surr: Toluene-d8	44.78	0	50		0 89.6	73-127	,	0		

Client: Navajo Refining Company

Work Order: 1301997

Project: RO Discharge Sampling

Batch ID: R141995	Instrument ID VOA5		Method	: SW8260	0						
LCS Sample ID: V	VLCSS1-020113-R141995				U	Inits: µg/k	(g	Analy	sis Date: 2	2/1/2013 0	8:43 AM
Client ID:	Run II	D: VOA5 _	130201A		Se	qNo: 309 8	3470	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	53.98	5.0	50		0	108	79-124		0		
1,1,2,2-Tetrachloroethane	53.32	5.0	50		0	107	75-123		0		
1,1,2-Trichloroethane	55.87	5.0	50		0	112	79-120		0		
1,1-Dichloroethane	52.6	5.0	50		0	105	75-124		0		
1,1-Dichloroethene	55.13	5.0	50		0	110	80-122		0		
1,2-Dibromoethane	57.09	5.0	50		0	114	79-120		0		
1,2-Dichloroethane	52.14	5.0	50		0	104	73-121		0		
Benzene	50.57	5.0	50		0	101	79-120		0		
Carbon tetrachloride	45.29	5.0	50		0	90.6	74-126		0		
Chloroform	55.04	5.0	50		0	110	78-120		0		
Ethylbenzene	54.99	5.0	50		0	110	80-122		0		
Methylene chloride	51.62	10	50		0	103	70-123		0		
Tetrachloroethene	47.09	5.0	50		0	94.2	80-121		0		
Toluene	49.54	5.0	50		0	99.1	79-120		0		
Trichloroethene	52.16	5.0	50		0	104	80-121		0		
Vinyl chloride	61.5	2.0	50		0	123	76-126		0		
Xylenes, Total	150.9	15	150		0	101	80-120		0		
Surr: 1,2-Dichloroethane	e-d4 51.49	0	50		0	103	70-128		0		
Surr: 4-Bromofluorobenz	zene 47.86	0	50		0	95.7	73-126		0		
Surr: Dibromofluorometh	nane 51.61	0	50		0	103	71-128		0		
Surr: Toluene-d8	43.85	0	50		0	87.7	73-127		0		

Note:

Client: Navajo Refining Company

Work Order: 1301997

Batch ID: R141995

Ethylbenzene

Toluene

Note:

Methylene chloride

Tetrachloroethene

Trichloroethene

Vinyl chloride

Xylenes, Total

Surr: 1,2-Dichloroethane-d4

Surr: 4-Bromofluorobenzene

Surr: Dibromofluoromethane

Surr: Toluene-d8

Project: RO Discharge Sampling

Instrument ID VOA5

50.85

48.37

43.7

53.36

51.31

55.22

146.8

49.29

49.78

51.55

49

5.0

10

5.0

5.0

5.0

2.0

15

0

0

0

0

MS Sample ID: 1301997	7-01AMS				Units: µg/l	K g	Analy	/sis Date: 2	/1/2013 1 ⁻	1:46 AM
Client ID: MW -115 (1)	Run I	D: VOA5 _	130201A	5	SeqNo: 309	8546	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	51.53	5.0	50	0	103	79-124		0		
1,1,2,2-Tetrachloroethane	45.86	5.0	50	0	91.7	75-123		0		
1,1,2-Trichloroethane	56	5.0	50	0	112	79-120		0		
1,1-Dichloroethane	49.56	5.0	50	0	99.1	75-124		0		
1,1-Dichloroethene	54.01	5.0	50	0	108	80-122		0		
1,2-Dibromoethane	49.35	5.0	50	0	98.7	79-120		0		
1,2-Dichloroethane	51.25	5.0	50	0	103	73-121		0		
Benzene	52.11	5.0	50	0	104	79-120		0		
Carbon tetrachloride	46.06	5.0	50	0	92.1	74-126		0		
Chloroform	48.72	5.0	50	0	97.4	78-120		0		

50

50

50

50

50

50

150

50

50

50

50

0

0

0

0

0

0

0

0

0

0

0

102

96.7

87.4

107

103

110

97.9

98.6

98

99.6

103

80-122

70-123

80-121

79-120

80-121

76-126

80-120

70-128

73-126

71-128

73-127

0

0

0

0

0

0

0

0

0

0

0

Method: SW8260

Client: Navajo Refining Company

Work Order: 1301997

Project: RO Discharge Sampling

Batch ID: R141995 Instrument ID VOA5 Method: SW8260

MSD Sample ID: 1301997-0	IAMSD				Units: µg/I	≺g	Analysi	is Date: 2/	1/2013 12	:09 PN
Client ID: MW -115 (1)	Run II	D: VOA5_	130201A	S	eqNo: 309	8547	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
1,1,1-Trichloroethane	54.79	5.0	50	0	110	79-124	51.53	6.13	30	
1,1,2,2-Tetrachloroethane	44.09	5.0	50	0	88.2	75-123	45.86	3.93	30	
1,1,2-Trichloroethane	54.9	5.0	50	0	110	79-120	56	1.98	30	
1,1-Dichloroethane	51.87	5.0	50	0	104	75-124	49.56	4.56	30	
1,1-Dichloroethene	52.81	5.0	50	0	106	80-122	54.01	2.24	30	
1,2-Dibromoethane	48.8	5.0	50	0	97.6	79-120	49.35	1.12	30	
1,2-Dichloroethane	46.29	5.0	50	0	92.6	73-121	51.25	10.2	30	
Benzene	51.81	5.0	50	0	104	79-120	52.11	0.568	30	
Carbon tetrachloride	47.75	5.0	50	0	95.5	74-126	46.06	3.61	30	
Chloroform	53.56	5.0	50	0	107	78-120	48.72	9.45	30	
Ethylbenzene	55.58	5.0	50	0	111	80-122	50.85	8.9	30	
Methylene chloride	53.37	10	50	0	107	70-123	48.37	9.82	30	
Tetrachloroethene	45.21	5.0	50	0	90.4	80-121	43.7	3.39	30	
Toluene	61.14	5.0	50	0	122	79-120	53.36	13.6	30	S
Trichloroethene	51.76	5.0	50	0	104	80-121	51.31	0.863	30	
Vinyl chloride	58.35	2.0	50	0	117	76-126	55.22	5.51	30	
Xylenes, Total	157.7	15	150	0	105	80-120	146.8	7.13	30	
Surr: 1,2-Dichloroethane-d4	48.55	0	50	0	97.1	70-128	49.29	1.51	30	
Surr: 4-Bromofluorobenzene	46.51	0	50	0	93	73-126	49	5.21	30	
Surr: Dibromofluoromethane	48.96	0	50	0	97.9	71-128	49.78	1.67	30	
Surr: Toluene-d8	55.55	0	50	0	111	73-127	51.55	7.47	30	

The following samples were analyzed in this batch:

Note:

1301997-01A 1301997-15A

Client: Navajo Refining Company

Work Order: 1301997

Project: RO Discharge Sampling

Batch ID: R142113	Instrument ID VOA4		Metho	d: SW82 6	60					
MBLK Sample ID: VI	BLKW-130204-R142113				Units: µg/	L	Analy	/sis Date: 2	/4/2013 1	1:16 AM
Client ID:	Run ID): VOA4_	130204A		SeqNo: 310	0918	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	U	1.0								
1,1,2,2-Tetrachloroethane	U	1.0								
1,1,2-Trichloroethane	U	1.0								
1,1-Dichloroethane	U	1.0								
1,1-Dichloroethene	U	1.0								
1,2-Dibromoethane	U	1.0								
1,2-Dichloroethane	U	1.0								
Benzene	U	1.0								
Carbon tetrachloride	U	1.0								
Chloroform	U	1.0								
Ethylbenzene	U	1.0								
Methylene chloride	U	2.0								
Tetrachloroethene	U	1.0								
Toluene	U	1.0								
Trichloroethene	U	1.0								
Vinyl chloride	U	1.0								
Xylenes, Total	U	1.0								
Surr: 1,2-Dichloroethane-	d4 43.85	1.0	50		0 87.7	71-125		0		
Surr: 4-Bromofluorobenze	ne 49.08	1.0	50		0 98.2	70-125		0		
Surr: Dibromofluorometha	ne 48.08	1.0	50		0 96.2	74-125		0		
Surr: Toluene-d8	48.41	1.0	50		0 96.8	78-123		0		

Note:

0

0

0

0

0

0

0

0

0

Client: Navajo Refining Company

Work Order: 1301997

Batch ID: R142113

Methylene chloride

Tetrachloroethene

Trichloroethene

Vinyl chloride

Xylenes, Total

Surr: 1,2-Dichloroethane-d4

Surr: 4-Bromofluorobenzene

Surr: Dibromofluoromethane

Surr: Toluene-d8

Toluene

Note:

Project: RO Discharge Sampling

Instrument ID VOA4

47.71

53.4

48.37

53.7

48.96

142.5

44.17

52.31

49.72

48.59

2.0

1.0

1.0

1.0

1.0

1.0

1.0

1.0

1.0

1.0

50

50

50

50

50

150

50

50

50

50

LCS Sample ID: VLCSW-	-130204-R142113				Units: µg/l	-	Analy	sis Date: 2	/4/2013 10	0:03 AM
Client ID:	Run II	D: VOA4 _	130204A	S	eqNo: 310	0916	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	54.47	1.0	50	0	109	80-120	(0		
1,1,2,2-Tetrachloroethane	46.02	1.0	50	0	92	74-123	(0		
1,1,2-Trichloroethane	48.93	1.0	50	0	97.9	80-120		0		
1,1-Dichloroethane	46.62	1.0	50	0	93.2	80-120	(0		
1,1-Dichloroethene	53.04	1.0	50	0	106	80-120		0		
1,2-Dibromoethane	53.39	1.0	50	0	107	80-120		0		
1,2-Dichloroethane	49.07	1.0	50	0	98.1	79-120		0		
Benzene	48.6	1.0	50	0	97.2	80-120	(0		
Carbon tetrachloride	58.54	1.0	50	0	117	79-120	(0		
Chloroform	46.57	1.0	50	0	93.1	80-120	(0		
Ethylbenzene	48.8	1.0	50	0	97.6	80-120		0		

0

0

0

0

0

0

0

0

0

0

95.4

107

96.7

107

97.9

95

88.3

105

99.4

97.2

75-125

80-120

80-121

80-120

75-125

80-124

71-125

70-125

74-125

78-123

Method: SW8260

Client: Navajo Refining Company

1301997 Work Order:

Batch ID: R142113

Tetrachloroethene

Trichloroethene

Vinyl chloride

Xylenes, Total

Surr: 1,2-Dichloroethane-d4

Surr: 4-Bromofluorobenzene

Surr: Dibromofluoromethane

Surr: Toluene-d8

Toluene

Note:

Project: RO Discharge Sampling

Instrument ID VOA4

50.41

46.08

52.04

46.66

43.85

51.57

48.7

48.27

138

1.0

1.0

1.0

1.0

1.0

1.0

1.0

1.0

1.0

LCSD Sample ID: VLCSDV	V-130204-R142113				Units: µg/l	-	Analysi	is Date: 2/4	4/2013 10	:27 AM
Client ID:	Run II	D: VOA4 _	130204A	Se	eqNo: 310	0917	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	51.78	1.0	50	0	104	80-120	54.47	5.06	20	
1,1,2,2-Tetrachloroethane	46.55	1.0	50	0	93.1	74-123	46.02	1.14	20	
1,1,2-Trichloroethane	48.97	1.0	50	0	97.9	80-120	48.93	0.0875	20	
1,1-Dichloroethane	44.74	1.0	50	0	89.5	80-120	46.62	4.11	20	
1,1-Dichloroethene	51.9	1.0	50	0	104	80-120	53.04	2.16	20	
1,2-Dibromoethane	53.91	1.0	50	0	108	80-120	53.39	0.979	20	
1,2-Dichloroethane	48.06	1.0	50	0	96.1	79-120	49.07	2.09	20	
Benzene	47	1.0	50	0	94	80-120	48.6	3.35	20	
Carbon tetrachloride	56.1	1.0	50	0	112	79-120	58.54	4.26	20	
Chloroform	45.18	1.0	50	0	90.4	80-120	46.57	3.02	20	
Ethylbenzene	46.79	1.0	50	0	93.6	80-120	48.8	4.2	20	
Methylene chloride	46.38	2.0	50	0	92.8	75-125	47.71	2.83	20	

50

50

50

50

150

50

50

50

50

0

0

0

0

0

0

0

0

0

101

92.2

104

93.3

87.7

103

97.4

96.5

92

80-120

80-121

80-120

75-125

80-124

71-125

70-125

74-125

78-123

53.4

48.37

53.7

48.96

142.5

44.17

52.31

49.72

48.59

5.75

4.84

3.14

4.81

3.19

0.739

1.41

2.09

0.661

20

20

20

20

20

20

20

20

20

Method: SW8260

Client: Navajo Refining Company

Work Order: 1301997

Project: RO Discharge Sampling

Batch ID: R142113	Instrument ID VOA4		Metho	d: SW826 0)					
MS Sample ID:	1302069-01AMS				Units:	μg/L	Analys	sis Date: 2	2/4/2013 0	1:41 PM
Client ID:	Run	ID: VOA4_	130204A		SeqNo:	3100924	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%R	Contr EC Limi		%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	56.87	1.0	50	(0 1	14 80-12	20 0			
1,1,2,2-Tetrachloroethane	45.23	1.0	50	() 90	0.5 74-12	23 0			
1,1,2-Trichloroethane	50.26	1.0	50	(0 1	01 80-12	20 0			
1,1-Dichloroethane	48.56	1.0	50	() 97	7.1 80-12	20 0			
1,1-Dichloroethene	57.49	1.0	50	(0 1	15 80-12	20 0			
1,2-Dibromoethane	53.79	1.0	50	() 1	08 80-12	20 0	1		
1,2-Dichloroethane	50.8	1.0	50	() 1	02 79-12	20 0			
Benzene	51.17	1.0	50	() 1	02 80-12	20 0	1		
Carbon tetrachloride	61.34	1.0	50	() 1	23 79-12	20 0			S
Chloroform	49.2	1.0	50	() 98	3.4 80-12	20 0			
Ethylbenzene	50.6	1.0	50	() 1	01 80-12	20 0			
Methylene chloride	49.13	2.0	50	() 98	3.3 75-12	25 0			
Tetrachloroethene	55.78	1.0	50	() 1	12 80-12	20 0			
Toluene	49.91	1.0	50	() 99	9.8 80-12	21 0			
Trichloroethene	57.43	1.0	50	() 1	15 80-12	20 0			
Vinyl chloride	53.66	1.0	50	() 1	07 75-12	25 0			
Xylenes, Total	148.5	1.0	150	()	99 80-12	24 0			
Surr: 1,2-Dichloroethane	e-d4 44.59	1.0	50	() 89	9.2 71-12	25 0			
Surr: 4-Bromofluorobenz	zene 50.99	1.0	50	() 1	02 70-12	25 0			
Surr: Dibromofluorometh	nane 49.65	1.0	50	() 99	9.3 74-12	25 0			
Surr: Toluene-d8	48.21	1.0	50	() 96	6.4 78-12	23 0			

Note:

Navajo Refining Company QC BATCH REPORT

Work Order: 1301997

Client:

Project: RO Discharge Sampling

Batch ID: R142113 Instrument ID VOA4 Method: SW8260

MSD Sample ID: 1302069-0	1AMSD				Units: µg/I	-	Analysi	is Date: 2/	4/2013 02	2:06 PN
Client ID:	Run II	D: VOA4 _	130204A	S	eqNo: 310	0925	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	59.48	1.0	50	0	119	80-120	56.87	4.49	20	
1,1,2,2-Tetrachloroethane	47.09	1.0	50	0	94.2	74-123	45.23	4.04	20	
1,1,2-Trichloroethane	51.43	1.0	50	0	103	80-120	50.26	2.29	20	
1,1-Dichloroethane	50.19	1.0	50	0	100	80-120	48.56	3.31	20	
1,1-Dichloroethene	60.32	1.0	50	0	121	80-120	57.49	4.82	20	S
1,2-Dibromoethane	56.01	1.0	50	0	112	80-120	53.79	4.04	20	
1,2-Dichloroethane	52.53	1.0	50	0	105	79-120	50.8	3.34	20	
Benzene	52.17	1.0	50	0	104	80-120	51.17	1.94	20	
Carbon tetrachloride	63.38	1.0	50	0	127	79-120	61.34	3.27	20	S
Chloroform	50.81	1.0	50	0	102	80-120	49.2	3.21	20	
Ethylbenzene	51.95	1.0	50	0	104	80-120	50.6	2.63	20	
Methylene chloride	51.27	2.0	50	0	103	75-125	49.13	4.28	20	
Tetrachloroethene	57.11	1.0	50	0	114	80-120	55.78	2.36	20	
Toluene	50.87	1.0	50	0	102	80-121	49.91	1.91	20	
Trichloroethene	58.72	1.0	50	0	117	80-120	57.43	2.21	20	
Vinyl chloride	54.84	1.0	50	0	110	75-125	53.66	2.17	20	
Xylenes, Total	151	1.0	150	0	101	80-124	148.5	1.7	20	
Surr: 1,2-Dichloroethane-d4	44.99	1.0	50	0	90	71-125	44.59	0.903	20	
Surr: 4-Bromofluorobenzene	50.73	1.0	50	0	101	70-125	50.99	0.509	20	
Surr: Dibromofluoromethane	50.29	1.0	50	0	101	74-125	49.65	1.28	20	
Surr: Toluene-d8	48.15	1.0	50	0	96.3	78-123	48.21	0.13	20	

The following samples were analyzed in this batch:

Note:

1301997-16A

Client: Navajo Refining Company

Work Order: 1301997

Project: RO Discharge Sampling

Batch ID: 67	7583 Instrument ID UV-2450		Method	l: SW901	4	(Dissolv	e)				
MBLK	Sample ID: WBLKS1-020513-67583				Units: mg/	Kg	Analysi	s Date: 2	/5/2013 04	:30 PM	
Client ID:	Run II	D: UV-245	0_130205C		SeqNo: 310	3414	Prep Date: 2/5/2	2013	DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua	
Cyanide	U	2.0									
LCS	Sample ID: WLCSS1-020513-67583				Units: mg/	Kg	Analysi	s Date: 2	/5/2013 04	:30 PN	
Client ID:	Run II	D: UV-245	0_130205C		SeqNo: 310 :	3415	Prep Date: 2/5/2	2013	DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua	
Cyanide	9.05	2.0	10		0 90.5	80-120	0				
LCSD	Sample ID: WLCSDS1-020513-67583				Units: mg/	Kg	Analysi	s Date: 2	2/5/2013 04:30 PM		
Client ID:	Run II	D: UV-245	0_130205C	SeqNo: 3103437			Prep Date: 2/5/2	2013	DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua	
Cyanide	8.9	2.0	10		0 89	80-120	9.05	1.67	30		
MS	Sample ID: 1301997-09DMS				Units: mg/	Kg	Analysi	s Date: 2	/5/2013 04	:30 PN	
Client ID: M	W- 115 (15) Run II	D: UV-245	0_130205C		SeqNo: 310	3436	Prep Date: 2/5/2	2013	DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua	
Cyanide	9.495	1.9	9.308	0.096	11 101	75-125	0				
The following	ng samples were analyzed in this batch:		301997-01D 301997-09D		301997-03D 301997-12D		301997-06D 301997-15D				

Client: Navajo Refining Company

Work Order: 1301997

Project: RO Discharge Sampling

Batch ID: 67633	Instrument ID ICS2100		Method	: E300			(Dissolve	e)			
MBLK Sample II	D: WBLKS1-67633				Uni	its: mg/	Kg	Analys	sis Date: 2	2/5/2013 07	7:11 PM
Client ID:	Rur	ID: ICS210	0_130205C		SeqN	No: 310 :	3858	Prep Date: 2/5	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	Ç	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	5.0									
Fluoride	0.64	1.0									J
Nitrogen, Nitrate (As N)	U	1.0									
Nitrogen, Nitrite (As N)	U	1.0									
Sulfate	U	5.0									
Surr: Selenate (surr)	45.24	1.0	50		0	90.5	85-115	()		
LCS Sample II	D: WLCSS1-67633				Units: mg/l		Kg	Analysis Date:		2/5/2013 07	7:25 PN
Client ID:	Rur	ID: ICS210	0_130205C		SeqN	No: 310 :	3859	Prep Date: 2/5	DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	Ç	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Chloride	219.8	5.0	200		0	110	90-110	()		
Fluoride	37.72	1.0	40		0	94.3	90-110	()		-
Nitrogen, Nitrate (As N)	43.14	1.0	40		0	108	90-110	()		
Nitrogen, Nitrite (As N)	43.82	1.0	40		0	110	90-110	()		
Sulfate	208.7	5.0	200		0	104	90-110	()		
Surr: Selenate (surr)	47.79	1.0	50		0	95.6	85-115	()		
MS Sample II	D: 1302026-21DMS				Uni	its: mg/	Kg	Analys	sis Date: 2	2/6/2013 01	:29 AN
Client ID:	Rur	n ID: ICS210	0_130205C		SeqN	No: 310 :	3884	Prep Date: 2/5	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Chloride	126.4	5.0	98.97	16	.2	111	75-125	()		
Fluoride	20.19	0.99	19.79	2.63	38	88.7	75-125	()		
Nitrogen, Nitrate (As N)	20.76	0.99	19.79		0	105	75-125	()		
Nitrogen, Nitrite (As N)	21.36	0.99	19.79		0	108	75-125	()		-
Sulfate	319.3	5.0	98.97	213	.5	107	75-125	()		
Surr: Selenate (surr)	42.66	0.99	49.48		0	86.2	80-120	()		

Note:

Client: Navajo Refining Company

Work Order: 1301997

Project: RO Discharge Sampling

MSD Sample ID	1302026-21DMSD				Units: mg/	Kg	Analysi	s Date: 2/	6/2013 01	:43 AM
Client ID:	Run II	D: ICS210	0_130205C	S	eqNo: 310 :	3885	Prep Date: 2/5/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	124.6	4.9	98.65	16.2	110	75-125	126.4	1.49	20	
Fluoride	19.9	0.99	19.73	2.638	87.5	75-125	20.19	1.45	20	
Nitrogen, Nitrate (As N)	20.57	0.99	19.73	0	104	75-125	20.76	0.942	20	
Nitrogen, Nitrite (As N)	20.98	0.99	19.73	0	106	75-125	21.36	1.77	20	
Sulfate	315.2	4.9	98.65	213.5	103	75-125	319.3	1.29	20	
Surr: Selenate (surr)	42	0.99	49.33	0	85.1	80-120	42.66	1.58	20	

Navajo Refining Company Client:

QC BATCH REPORT Work Order: 1301997 **RO Discharge Sampling Project:**

Batch ID: R142	151 Instru	ıment ID Balance1		Method	: SW3550)	(Dissolve	=)			
DUP S	ample ID: 130199	7-15DDUP				Units: wt%	6	Analysi	s Date: 2/	4/2013 02	2:30 PM
Client ID: MW-1	15 (25)	Run ID	BALAN	ICE1_130204	IC	SeqNo: 310	1859	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Percent Moistur	e	21.35	0.010	0	(0 0	0-0	20.91	2.09	20	
The following s	samples were an	alyzed in this batch:	13 13 13	301997-01D 301997-04A 301997-07A 301997-10A 301997-13A	130 130 130	01997-02A 01997-05A 01997-08A 01997-11A 01997-14A	13 13 13	01997-03D 01997-06D 01997-09D 01997-12D 01997-15D			

ALS Environmental Date: 13-Feb-13

Client: Navajo Refining Company **QUALIFIERS,** Project: RO Discharge Sampling ACRONYMS, UNITS

WorkOrder: 1301997

wt%

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
В	Analyte detected in the associated Method Blank above the Reporting Limit
E 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
0	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
Acronym	Description
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
Units Reported	Description
μg/Kg-dı	ry Micrograms per Kilogram - Dry weight corrected
mg/Kg-da	ry Milligrams per Kilogram - Dry weight corrected
mg/L	Milligrams per Liter

Sample Receipt Checklist

Client Name:	NAVAJO REFINING			Date/Time	Received:	31-Jan-13	<u>09:10</u>	
Work Order:	<u>1301997</u>			Received b	y:	<u>RDH</u>		
Checklist comp	pleted by Lohnnie B. Wlenesignature	3	31-Jan-13 Date	Reviewed by:	Patricia eSignature	L. Lyne	h	01-Feb-13
Matrices: Carrier name:	soil/water FedEx Priority Overnight	'						'
Shipping conta	iner/cooler in good condition?		Yes 🗸	No 🗌	Not Prese	ent 🗌		
Custody seals i	intact on shipping container/coole	er?	Yes 🗹	No 🗌	Not Prese	ent 🗌		
Custody seals	intact on sample bottles?		Yes \square	No 🗆	Not Prese	ent 🗸		
Chain of custoo	dy present?		Yes 🗹	No \square				
Chain of custoo	dy signed when relinquished and	received?	Yes 🗹	No 🗆				
Chain of custoo	dy agrees with sample labels?		Yes 🗸	No 🗌				
Samples in pro	per container/bottle?		Yes 🗹	No 🗆				
Sample contain	ners intact?		Yes 🗹	No 🗆				
Sufficient samp	ole volume for indicated test?		Yes 🗹	No 🗌				
All samples rec	eived within holding time?		Yes 🗹	No 🗆				
Container/Tem	p Blank temperature in compliand	ce?	Yes 🗹	No 🗆				
Temperature(s)/Thermometer(s):		1.2 C/uc		<u>IR</u>	<u>1</u>		
Cooler(s)/Kit(s)	:		<u>5414</u>					
Date/Time sam	pple(s) sent to storage:		1/31/13 14	:50			_	
Water - VOA vi	als have zero headspace?		Yes 🗸	No 🗀	No VOA vials	submitted		
Water - pH acc	eptable upon receipt?		Yes 🗹	No 🗌	N/A			
pH adjusted? pH adjusted by	:		Yes -	No 🗸	N/A			
Login Notes:	Ra-226/228 & cyanide not o	on COC. Incorrect r	metals list on	COC.				
	- — — — — — — — -				- — — — —			
				- — — — —	- — — — —			- — — — —
Client Contacte	ed:	Date Contacted:		Person	Contacted:			
Contacted By:		Regarding:						
,		202 2						
Comments:								
CorrectiveAction	on:							
							CDC	Dana 4 of 4

47	
앜	
4	



Chain of Custody Form

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

Fort Collins, CO +1 970 490 1511

1301997

NAVAJO REFINING: Navajo Refining Company

Project: RO Discharge Sampling



Copyright 2011 by ALS Group

ALS Project Manager:									7.18.18.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21.18.21									
di kabupatén manidiki da bara kabu	omer Informatio	o n		Project Inf	ormation			1			Parameter/Method Request for Analysis							
Purchase Order		<u> </u>	Proje	ect Name RO I	Scha	ac /	Samplin	A	<u>Voc</u>		<u>826</u>	<i>o</i>) 1	An) GU	<u>، ے ن</u>	<u>+</u>		
Work Order			Project	Number 17	<u>5885</u>	3)		³ B (SR	<u>) (</u>	301	5 M)	<u> </u>					
Company Name	Maurio Re	Fining Co	Bill To (Company Mau	~jo R	etini	15 Co	С	C DRO (801514)									
Send Report To	Robert C	Sold -	Invo	oice Attn. Roy		طہرہ	J 5	D	OR	> (301	5.M)					
Address	501 East	Main		Address 501 East Main					14	5V) <u> </u>	A 8
City/State/Zip			City/	State/Zip	25is. 1	JM		G										24 8
Phone		¥			- 748			 H	-D			141		<u> </u>		<u>ucci</u>	1300	<u> </u>
Fax	12 g/1			Fax 5 75					4 ,	stuc	- 69	,						
e-Mail Address			e-Mail	Address		<u> </u>	<u></u>	J	1,5/2 1	<u>., 1, 5/ 8</u>	-							
No.	Sample Descriptio	n	Date	Time	Matrix	Pres.	# Bottles	A	В	С	D	E	F	G	н		J	Hold
1 7w	115(1)		1-79-1	3 1425	51		15	X	7	X	叉	Z)	X	3		X	1	
7.00 m	215(3)		1	1430												X		
	115 (5)			1435			5	及	4	Z.	R	8	×	1/2		X		
	115 (1)			1502												X		
	الا (9)			1502			Í									X		
6 MW				1610			<u> </u>	3/2	延	趸	龙	8	<u> </u>	3		×		
7 1	1116 (1)			1612			<u> </u>	ļ				<u> </u>	<u> </u>			×		
8 Mw	115 (13)		<u> </u>	1612			1		<u> </u>		y)		<u> </u>			X		
	115 (15)	,	<u> </u>	1570			5	R	交	死	湿	展	X	璇		X		
) IR (1-1)		\	1522	1 1 1			<u> </u>	<u> </u>			<u> </u>	ļ ·			X		
Sampler(s): Please Pr	D)			nipment Method:		STD 10 W	rnaround k Days [] 5 WK I] 2 W	Other k Days		4 Hour	Res	sults Du	e Date		
Relinquished by:		Date:	Time:	Received by:			1.0	Not	1.00			"			. 1			
Relinquished by:	jessen	1/30/13	1300 Time:	Received/b/H_abo	ratow) s						AT.	1/155	الاله والم	ox Belov	1-4-31	<u>s L</u> i	eld /	<u>5.140</u>
	J			W/	M-	11311	12/51	()] co	o.er Tei	nn I	4000 0000		Standa	gin kan annak	v)			
Logged by (Laboratory):		Date:	Time:	Checked by (Labo	ratory).	4-4	()	一广		$\neg \vdash$				+ Raw	/ Data	┝┼		·
							-				Le	vel IV:	SW84	6 CLP-	Like			International Publishers
Preservative Key: 1	-HCL 2-HNO3 3-	H2SO4 4-NaOl	1 5-Na2S2O	3 6-NaHSO4 7-0	ther 8-4	degrees	C 9-50	35			Ot	her:	:					
Note: Any changes mu	st he made in writing	once samnles and	l COC Form ha	ve been submitted to	Al S Enviro	nmental	100 page 200 (200 page 200 pa	ascentiate (see	nic (1975)	45467.)			2011 by	ALS Gr		L	~ ~~~~	



Cincinnati, OH +1 513 733 5336

Holland, MI +1 616 399 6070 Everett, WA +1 425 356 2600

Fort Collins, CO

+1 970 490 1511

Chain of Custody Form

Page 2 of Z

coc ID: 72330

Houston, TX +1 281 530 5656

Middletown, PA

+1 717 944 5541

Spring City, PA +1 610 948 4903 Salt Lake City, UT

+1 801 266 7700

South Charleston, WV +1 304 356 3168

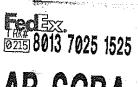
York, PA +1 717 505 5280

Enviro	nmental						ALS		Manager:			1052		ALS	Work	Order	·#: ,	13:	1/8	797
	Customer Informatio	n			Projec	ct Inform	natio	n				Pa	rame	ter/Me	thod	Reque	st for	Analy	rsis	
Purchase Order			F	Project Na	ame RO	Discharge	e/San	npling		A	VO	C (826	O) NW	GW Lis	st					
Work Order		A STATE OF THE STA	Pro	oject Num	nber 128	823				В	GR	(801 O	5M)							
Company Name	Navajo Refining Con	npany	Bill	To Comp	oany Nav	ajo Refini	ing Co	этрапу		С	DR	O (801	5M)							77.00
Send Report To	Robert Combs			Invoice /	Attn Rob	ert Comb)s	TOTAL STATES		D	OR	(801	5M)							
Address	501 East Main	**************************************		Addr	hat of the edit of the	East Mai	in	THE PARTY OF THE PARTY AND A SERVICE	A COMMISSION OF THE PARTY OF TH	E	LL	svoc	(8270)) NM GV	N List		•			
Addiess			5,000,00 5,000,00 2,000,00	700	C33					F	Tot	al Meta	als (60.	20/7000)) RCR/	48	·	~~~~		
City/State/Zip	Artesia, NM 88211		С	City/State/	/Zip Arte	esia, NM	8821	1		G	Dis	solved	Metals	(6020/	7000) F	RCRA 8	}		,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	
Phone	(575) 748-6733			Ph	none (575	5) 748-67	'33			H	TD	\$		1.	-					
Fax	(575) 746-5421		492556 30459		Fax (575	5) 746-54	-21				Мо	isture			. 8.		<u> </u>			7AVE TANKEN
e-Mail Address			1999	Mail Addr	99/60/35166					J	· · · · · · · · · · · · · · · · · · ·			IO/Sp G				·		
No.	Sample Description		Da	contribution States	Time	Matrix	X 🖠	Pres.	# Bottles	Α	В	C	D	E	F	G	H	1	J	Hold
	160 115 (19)		1-29	9-13	1522	50	<u>,/ </u>		1		-	-	ļ	-	-			X		
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	W 15 (20)		-		1600	L			5	2	7	3	8	39	X	MA		X		
3 ~	(W 115 (21)		ļ		1530				1		<u> </u>				ļ			X	ļ	
 A state of 	10115 (23)	•			1530				1			ļ						X		ļ
5	YW115 (25)			_	1545				5	人	X	X	×	×	Х	和		×	ļ	
6			1							ļ	ļ	ļi	ļ.,	ļ						
7						<u></u>					-			ļ			ļ			
8		***************************************				_					ļ			-				ļ		
9			-								ļ		<u> </u>	-						
10						1				**************************************	<u> </u>									
Sampler(s) Please P	rint & Sign				nt Method		- N.	red Turnard Std 10 \	ound Time: (NVK Days [вох) /К Days		WK Da	Leve-	24 Hoi	ur	esults C		te:	
Relinquished by: Eric Berge	i Geo	Date: 1/30/13	Time: 130	٥	Received by:				:	Notes:		10 Day	y TAT.	Dissolv	ed Meta	als Field	d Filters	ed		
Relinquished by:		Date:	Time:	,	Received by (La	bdratory)	131	112 (30	Coo	oler ID	Cool	ler Temp	ı. QC			k One Bo	ox Belo		0.082999999
Logged by (Laboratory)):	Date:	Time:		Checked by (La			400-		000000000000000000000000000000000000000			6975 69		Lev		CC/Rav			RRP CheckList RRP Level IV
Preservative Key:	1-HCI 2-HNO ₃	3-H₂SO₄ 4-Na	aOH 5	5-Na ₂ S ₂ O ₃		7-0	ther	8-4°C	9-5035	3000		10000	764-875 8	9300 1867		er / EDD	//846/CL			

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.



THU - 31 JAN A1 STANDARD OVERNIGHT

AB SGRA



GEN 637368 38JANIS ROWA SISOLINGS ACTAS

Da

Na

Co



ALS Environmental

10450 Stancliff Rd., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5887 **CUSTODY SEAL**

te: 1-30-2013 Time: 12.50
me: D. McKeinna
mpany: ARCAP40

Sear Broken/By:



13-Feb-2013

Robert Combs Navajo Refining Company PO Box 159 Artesia, NM 88211

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

Re: RO Discharge Sampling Work Order: 1302026

Dear Robert,

ALS Environmental received 22 samples on 31-Jan-2013 09:10 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 Î F.

Sonie West

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

Sincerely,

Electronically approved by: Sonia West

Sonia West

Project Manager



Certificate No: T104704231-12-10

ALS Environmental

Date: 13-Feb-13

Client: Navajo Refining Company
Project: RO Discharge Sampling

Work Order: 1302026

Work Order Sample Summary

Lab Samp II	Client Sample ID	<u>Matrix</u>	Tag Number	Collection Date	Date Received	Hold
1302026-01	MW-114 (1)	Soil		1/28/2013 14:30	1/31/2013 09:10	
1302026-02	MW-114 (3)	Soil		1/28/2013 14:40	1/31/2013 09:10	
1302026-03	MW-114 (5)	Soil		1/28/2013 14:45	1/31/2013 09:10	
1302026-04	MW-114 (7)	Soil		1/28/2013 15:30	1/31/2013 09:10	
1302026-05	MW-114 (9)	Soil		1/28/2013 15:45	1/31/2013 09:10	
1302026-06	MW-114 (10)	Soil		1/28/2013 15:30	1/31/2013 09:10	
1302026-07	MW-114 (11)	Soil		1/28/2013 15:30	1/31/2013 09:10	
1302026-08	MW-114 (13)	Soil		1/28/2013 15:50	1/31/2013 09:10	
1302026-09	MW-114 (15)	Soil		1/28/2013 15:50	1/31/2013 09:10	
1302026-10	MW-114 (17)	Soil		1/28/2013 16:00	1/31/2013 09:10	
1302026-11	MW-114 (19)	Soil		1/28/2013 16:05	1/31/2013 09:10	
1302026-12	MW-114 (20)	Soil		1/28/2013 16:10	1/31/2013 09:10	
1302026-13	MW-114 (21)	Soil		1/28/2013 16:15	1/31/2013 09:10	
1302026-14	MW-114 (23)	Soil		1/28/2013 16:15	1/31/2013 09:10	
1302026-15	MW-114 (25)	Soil		1/28/2013 16:20	1/31/2013 09:10	
1302026-16	MW-114 (27)	Soil		1/28/2013 16:25	1/31/2013 09:10	
1302026-17	MW-114 (29)	Soil		1/28/2013 16:27	1/31/2013 09:10	
1302026-18	MW-114 (30)	Soil		1/28/2013 16:00	1/31/2013 09:10	
1302026-19	MW-114 (31)	Soil		1/28/2013 16:40	1/31/2013 09:10	
1302026-20	MW-114 (33)	Soil		1/28/2013 16:40	1/31/2013 09:10	
1302026-21	MW-114 (35)	Soil		1/28/2013 16:50	1/31/2013 09:10	
1302026-22	Trip Blank 011813-19	Water		1/31/2013	1/31/2013 09:10	

ALS Environmental

Date: 13-Feb-13

Client: Navajo Refining Company
Project: RO Discharge Sampling

Work Order: 1302026

Case Narrative

Your samples received for Radium 226 and Radium 228 are reported on ALS workorder 1302400.

Batch R98939, TPH DRO/ORO, Sample 1302018-01: MS/MSD is for an unrelated sample.

Batch 67523, Metals, Sample 13011005-01: MS/MSD is for an unrelated sample.

Batch 67523, Metals, Sample 13011005-01: Duplicate RPD is for an unrelated sample.

Batch 67565, Metals, Sample 1302050-13: MS/MSD is for an unrelated sample.

Batch 67565, Metals, Sample 1302050-13: MS/MSD RPD is for an unrelated sample.

Batch 67565, Metals, Sample 1302050-13: Duplicate RPD is for an unrelated sample.

Batch 67656, Low-Level Semivolatile Organics, Sample 1302140-04: MS/MSD is for an unrelated sample.

Batch 67656, Low-Level Semivolatile Organics, Sample 1302140-04: MS/MSD RPD is for an unrelated sample.

Batch R141995, Volatile Organics, Sample 1301997-01: MS/MSD is for an unrelated sample.

Batch R142113, Volatile Organics, Sample 1302069-01: MS/MSD is for an unrelated sample.

Client: Navajo Refining Company

Project: RO Discharge Sampling **Sample ID:** MW-114 (1)

Collection Date: 1/28/2013 02:30 PM

Date: 13-Feb-13

Work Order: 1302026

Lab ID: 1302026-01

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Metl	nod: SW8015M		Prep: SW35	41 / 2/5/13	Analyst: KMB
TPH (Oil Range)	0.83	J	0.61	4.1	mg/Kg-dry	1	2/6/2013 15:27
TPH (Diesel Range)	U		0.61	2.1	mg/Kg-dry	1	2/6/2013 15:27
Surr: 2-Fluorobiphenyl	61.5			60-135	%REC	1	2/6/2013 15:27
GASOLINE RANGE ORGANICS - SW8015	iC	Metl	nod: SW8015				Analyst: KKP
Gasoline Range Organics	U		0.024	0.061	mg/Kg-dry	1	2/5/2013 17:26
Surr: 4-Bromofluorobenzene	89.0			70-130	%REC	1	2/5/2013 17:26
MERCURY - SW7471B		Metl	nod: SW7471A		Prep: SW74	71A / 2/5/13	Analyst: OFO
Mercury	19.9		0.35	4.31	μg/Kg-dry	1	2/5/2013 16:27
METALS		Metl	nod: SW6020		Prep: SW30	50A / 2/4/13	Analyst: SKS
Aluminum	13,900		23	117	mg/Kg-dry	100	2/6/2013 15:45
Arsenic	4.67		0.12	0.584	mg/Kg-dry	1	2/5/2013 16:44
Barium	115		0.093	0.584	mg/Kg-dry	1	2/5/2013 16:44
Boron	5.29		1.6	2.92	mg/Kg-dry	1	2/6/2013 13:30
Cadmium	0.403	J	0.058	0.584	mg/Kg-dry	1	2/5/2013 16:44
Calcium	58,900		1,200	5,840	mg/Kg-dry	100	2/6/2013 15:45
Chromium	14.3		0.11	0.584	mg/Kg-dry	1	2/6/2013 13:30
Cobalt	4.91		0.082	0.584	mg/Kg-dry	1	2/5/2013 16:44
Copper	26.4		0.12	0.584	mg/Kg-dry	1	2/5/2013 16:44
Iron	9,110		12	58.4	mg/Kg-dry	1	2/5/2013 16:44
Lead	37.3		0.058	0.584	mg/Kg-dry	1	2/5/2013 16:44
Manganese	192		0.12	0.584	mg/Kg-dry	1	2/5/2013 16:44
Molybdenum	0.580	J	0.18	0.584	mg/Kg-dry	1	2/5/2013 16:44
Nickel	10.7		0.11	0.584	mg/Kg-dry	1	2/5/2013 16:44
Potassium	3,520		15	58.4	mg/Kg-dry	1	2/5/2013 16:44
Selenium	1.12		0.21	0.584	mg/Kg-dry	1	2/5/2013 16:44
Silver	U		0.093	0.584	mg/Kg-dry	1	2/5/2013 16:44
Sodium	157		13	58.4	mg/Kg-dry	1	2/5/2013 16:44
Uranium	U		0.58	0.584	mg/Kg-dry	1	2/5/2013 16:44
Zinc	40.0		0.29	0.584	mg/Kg-dry	1	2/5/2013 16:44
LOW-LEVEL SEMIVOLATILES		Metl	nod: SW8270		Prep: SW35	41 / 2/7/13	Analyst: LG
1-Methylnaphthalene	U		1.9	8.0	μg/Kg-dry	1	2/8/2013 12:51
2-Methylnaphthalene	U		1.9	8.0	μg/Kg-dry	1	2/8/2013 12:51
Benzo(a)pyrene	U		1.9	8.0	μg/Kg-dry	1	2/8/2013 12:51
Naphthalene	U		1.9	8.0	μg/Kg-dry	1	2/8/2013 12:51
Surr: 2,4,6-Tribromophenol	76.0			36-126	%REC	1	2/8/2013 12:51
Surr: 2-Fluorobiphenyl	75.4			43-125	%REC	1	2/8/2013 12:51

Client: Navajo Refining Company

Project: RO Discharge Sampling **Sample ID:** MW-114 (1)

Collection Date: 1/28/2013 02:30 PM

Work Order: 1302026

Lab ID: 1302026-01

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 2-Fluorophenol	52.2			37-125	%REC	1	2/8/2013 12:51
Surr: 4-Terphenyl-d14	98.4			32-125	%REC	1	2/8/2013 12:51
Surr: Nitrobenzene-d5	76.0			37-125	%REC	1	2/8/2013 12:51
Surr: Phenol-d6	49.9			40-125	%REC	1	2/8/2013 12:51
VOLATILES - SW8260C		Met	hod: SW8260				Analyst: WLR
1,1,1-Trichloroethane	U		2.1	6.1	μg/Kg-dry	1	2/1/2013 14:49
1,1,2,2-Tetrachloroethane	U		0.61	6.1	μg/Kg-dry	1	2/1/2013 14:49
1,1,2-Trichloroethane	U		2.4	6.1	μg/Kg-dry	1	2/1/2013 14:49
1,1-Dichloroethane	U		0.61	6.1	μg/Kg-dry	1	2/1/2013 14:49
1,1-Dichloroethene	U		1.8	6.1	μg/Kg-dry	1	2/1/2013 14:49
1,2-Dibromoethane	U		0.85	6.1	μg/Kg-dry	1	2/1/2013 14:49
1,2-Dichloroethane	U		0.73	6.1	μg/Kg-dry	1	2/1/2013 14:49
Benzene	U		0.73	6.1	μg/Kg-dry	1	2/1/2013 14:49
Carbon tetrachloride	U		1.5	6.1	μg/Kg-dry	1	2/1/2013 14:49
Chloroform	U		2.2	6.1	μg/Kg-dry	1	2/1/2013 14:49
Ethylbenzene	U		1.1	6.1	μg/Kg-dry	1	2/1/2013 14:49
Methylene chloride	3.2	J	3.0	12	μg/Kg-dry	1	2/1/2013 14:49
Tetrachloroethene	U		1.2	6.1	μg/Kg-dry	1	2/1/2013 14:49
Toluene	U		0.85	6.1	μg/Kg-dry	1	2/1/2013 14:49
Trichloroethene	U		1.9	6.1	μg/Kg-dry	1	2/1/2013 14:49
Vinyl chloride	U		1.2	2.4	μg/Kg-dry	1	2/1/2013 14:49
Xylenes, Total	U		3.2	18	μg/Kg-dry	1	2/1/2013 14:49
Surr: 1,2-Dichloroethane-d4	86.5			70-128	%REC	1	2/1/2013 14:49
Surr: 4-Bromofluorobenzene	91.0			73-126	%REC	1	2/1/2013 14:49
Surr: Dibromofluoromethane	97.0			71-128	%REC	1	2/1/2013 14:49
Surr: Toluene-d8	96.5			73-127	%REC	1	2/1/2013 14:49
ANIONS - EPA 300.0 (1993)		Met	hod: E300		Prep: E300 /	2/5/13	Analyst: JKP
Chloride	21.0		2.4	6.06	mg/Kg-dry	1	2/5/2013 23:03
Fluoride	11.1		0.36	1.21	mg/Kg-dry	1	2/5/2013 23:03
Nitrogen, Nitrate (As N)	U		0.36	1.21	mg/Kg-dry	1	2/5/2013 23:03
Nitrogen, Nitrite (As N)	U		0.36	1.21	mg/Kg-dry	1	2/5/2013 23:03
Sulfate	1,120		2.4	6.06	mg/Kg-dry	1	2/5/2013 23:03
Surr: Selenate (surr)	86.2			85-115	%REC	1	2/5/2013 23:03
CYANIDE		Met	hod: SW9014		Prep: SW90	10C / 2/5/13	Analyst: EDG
Cyanide	U		0.72	2.41	mg/Kg-dry	1	2/5/2013 16:30
MOISTURE		Met	hod: SW3550				Analyst: KAH
Percent Moisture	17.9		0.010	0.0100	wt%	1	2/5/2013 13:50

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-114 (3)

Collection Date: 1/28/2013 02:40 PM

Work Order: 1302026

Lab ID: 1302026-02

Date: 13-Feb-13

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 21.0
 0.010
 0.0100
 wt%
 1
 2/5/2013 13:50

Client: Navajo Refining Company

Project: RO Discharge Sampling **Sample ID:** MW-114 (5)

Collection Date: 1/28/2013 02:45 PM

Date: 13-Feb-13

Work Order: 1302026

Lab ID: 1302026-03

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Meth	nod: SW7471	1	Prep: SW74	71A / 2/5/13	Analyst: OFO
Mercury	U		0.38	4.71	μg/Kg-dry	1	2/5/2013 16:29
METALS		Meth	od: SW6020		Prep: SW3050A / 2/4/13		Analyst: SKS
Aluminum	5,490		23	117	mg/Kg-dry	100	2/6/2013 15:47
Arsenic	2.19		0.12	0.584	mg/Kg-dry	1	2/5/2013 16:46
Barium	99.2		0.094	0.584	mg/Kg-dry	1	2/5/2013 16:46
Boron	5.78	J	3.3	5.84	mg/Kg-dry	2	2/6/2013 13:33
Cadmium	0.0884	J	0.058	0.584	mg/Kg-dry	1	2/5/2013 16:46
Calcium	150,000		1,200	5,840	mg/Kg-dry	100	2/6/2013 15:47
Chromium	5.44		0.21	1.17	mg/Kg-dry	2	2/6/2013 13:33
Cobalt	1.30		0.082	0.584	mg/Kg-dry	1	2/5/2013 16:46
Copper	1.67		0.12	0.584	mg/Kg-dry	1	2/5/2013 16:46
Iron	3,330		12	58.4	mg/Kg-dry	1	2/5/2013 16:46
Lead	2.59		0.058	0.584	mg/Kg-dry	1	2/5/2013 16:46
Manganese	45.8		0.12	0.584	mg/Kg-dry	1	2/5/2013 16:46
Molybdenum	0.273	J	0.18	0.584	mg/Kg-dry	1	2/5/2013 16:46
Nickel	3.16		0.11	0.584	mg/Kg-dry	1	2/5/2013 16:46
Potassium	1,060		15	58.4	mg/Kg-dry	1	2/5/2013 16:46
Selenium	0.307	J	0.21	0.584	mg/Kg-dry	1	2/5/2013 16:46
Silver	U		0.094	0.584	mg/Kg-dry	1	2/5/2013 16:46
Sodium	110		13	58.4	mg/Kg-dry	1	2/5/2013 16:46
Uranium	U		0.58	0.584	mg/Kg-dry	1	2/5/2013 16:46
Zinc	9.61		0.29	0.584	mg/Kg-dry	1	2/5/2013 16:46
ANIONS - EPA 300.0 (1993)		Method: E300		Prep: E300 / 2/5/13		Analyst: JKP	
Chloride	24.9		2.8	6.93	mg/Kg-dry	1	2/5/2013 23:18
Fluoride	7.73		0.42	1.39	mg/Kg-dry	1	2/5/2013 23:18
Nitrogen, Nitrate (As N)	U		0.42	1.39	mg/Kg-dry	1	2/5/2013 23:18
Nitrogen, Nitrite (As N)	U		0.42	1.39	mg/Kg-dry	1	2/5/2013 23:18
Sulfate	796		2.8	6.93	mg/Kg-dry	1	2/5/2013 23:18
Surr: Selenate (surr)	85.8			85-115	%REC	1	2/5/2013 23:18
CYANIDE		Meth	od: SW9014		Prep: SW90	10C / 2/5/13	Analyst: EDG
Cyanide	U		0.80	2.66	mg/Kg-dry	1	2/5/2013 16:30
MOISTURE		Meth	od: SW3550				Analyst: KAH
Percent Moisture	28.0		0.010	0.0100	wt%	1	2/5/2013 13:50

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-114 (7)

Collection Date: 1/28/2013 03:30 PM

Work Order: 1302026

Lab ID: 1302026-04

Date: 13-Feb-13

Matrix: SOIL

Report **Dilution Date Analyzed** Limit **Analyses MDL Factor** Result Qual Units

MOISTURE Method: SW3550 Analyst: KAH 2/5/2013 13:50 **Percent Moisture** 22.9 0.010 0.0100 wt%

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302026

 Sample ID: MW-114 (9)
 Lab ID: 1302026-05

Collection Date: 1/28/2013 03:45 PM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 18.4
 0.010
 0.0100
 wt%
 1
 2/5/2013 13:50

Client: Navajo Refining Company

Project: RO Discharge Sampling **Sample ID:** MW-114 (10)

Collection Date: 1/28/2013 03:30 PM

Work Order: 1302026

Lab ID: 1302026-06

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Meth	od: SW7471 A	1	Prep: SW74	71A / 2/5/13	Analyst: OFO
Mercury	3.71	J	0.39	4.74	μg/Kg-dry	1	2/5/2013 16:31
METALS		Meth	od: SW6020		Prep: SW30	50A / 2/4/13	Analyst: SKS
Aluminum	8,230		23	113	mg/Kg-dry	100	2/6/2013 15:55
Arsenic	3.10		0.11	0.564	mg/Kg-dry	1	2/5/2013 16:49
Barium	131		0.090	0.564	mg/Kg-dry	1	2/5/2013 16:49
Boron	6.34		3.2	5.64	mg/Kg-dry	2	2/6/2013 13:35
Cadmium	0.126	J	0.056	0.564	mg/Kg-dry	1	2/5/2013 16:49
Calcium	141,000		1,100	5,640	mg/Kg-dry	100	2/6/2013 15:55
Chromium	7.76		0.20	1.13	mg/Kg-dry	2	2/6/2013 13:35
Cobalt	2.14		0.079	0.564	mg/Kg-dry	1	2/5/2013 16:49
Copper	2.82		0.11	0.564	mg/Kg-dry	1	2/5/2013 16:49
Iron	4,890		11	56.4	mg/Kg-dry	1	2/5/2013 16:49
Lead	3.86		0.056	0.564	mg/Kg-dry	1	2/5/2013 16:49
Manganese	78.0		0.11	0.564	mg/Kg-dry	1	2/5/2013 16:49
Molybdenum	0.406	J	0.17	0.564	mg/Kg-dry	1	2/5/2013 16:49
Nickel	4.48		0.10	0.564	mg/Kg-dry	1	2/5/2013 16:49
Potassium	1,650		15	56.4	mg/Kg-dry	1	2/5/2013 16:49
Selenium	0.640		0.20	0.564	mg/Kg-dry	1	2/5/2013 16:49
Silver	U		0.090	0.564	mg/Kg-dry	1	2/5/2013 16:49
Sodium	136		12	56.4	mg/Kg-dry	1	2/5/2013 16:49
Uranium	U		0.56	0.564	mg/Kg-dry	1	2/5/2013 16:49
Zinc	14.9		0.28	0.564	mg/Kg-dry	1	2/5/2013 16:49
ANIONS - EPA 300.0 (1993)		Meth	od: E300		Prep: E300 / 2/5/13		Analyst: JKP
Chloride	20.6		2.6	6.56	mg/Kg-dry	1	2/5/2013 23:33
Fluoride	5.02		0.39	1.31	mg/Kg-dry	1	2/5/2013 23:33
Nitrogen, Nitrate (As N)	U		0.39	1.31	mg/Kg-dry	1	2/5/2013 23:33
Nitrogen, Nitrite (As N)	U		0.39	1.31	mg/Kg-dry	1	2/5/2013 23:33
Sulfate	6,970		26	65.6	mg/Kg-dry	10	2/6/2013 10:33
Surr: Selenate (surr)	85.3			85-115	%REC	1	2/5/2013 23:33
Surr: Selenate (surr)	87.1			85-115	%REC	10	2/6/2013 10:33
CYANIDE		Meth	od: SW9014		Prep: SW90	10C / 2/5/13	Analyst: EDG
Cyanide	U		0.74	2.46	mg/Kg-dry	1	2/5/2013 16:30
MOISTURE		Meth	od: SW3550				Analyst: KAH
Percent Moisture	25.2		0.010	0.0100	wt%	1	2/5/2013 13:50

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302026

 Sample ID: MW-114 (11)
 Lab ID: 1302026-07

Collection Date: 1/28/2013 03:30 PM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 22.6
 0.010
 0.0100
 wt%
 1
 2/5/2013 13:50

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302026

 Sample ID: MW-114 (13)
 Lab ID: 1302026-08

Collection Date: 1/28/2013 03:50 PM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 23.4
 0.010
 0.0100
 wt%
 1
 2/5/2013 13:50

Client: Navajo Refining Company

Project: RO Discharge Sampling **Sample ID:** MW-114 (15)

Collection Date: 1/28/2013 03:50 PM

Work Order: 1302026

Lab ID: 1302026-09

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Meth	nod: SW7471A	1	Prep: SW74	71A / 2/5/13	Analyst: OFO
Mercury	1.27	J	0.34	4.24	μg/Kg-dry	1	2/5/2013 16:33
METALS		Meth	nod: SW6020		Prep: SW30	50A / 2/4/13	Analyst: SKS
Aluminum	8,150		20	99.8	mg/Kg-dry	100	2/6/2013 15:57
Arsenic	3.48		0.10	0.499	mg/Kg-dry	1	2/5/2013 16:51
Barium	50.7		0.080	0.499	mg/Kg-dry	1	2/5/2013 16:51
Boron	7.64		2.8	4.99	mg/Kg-dry	2	2/6/2013 13:42
Cadmium	0.149	J	0.050	0.499	mg/Kg-dry	1	2/5/2013 16:51
Calcium	146,000		1,000	4,990	mg/Kg-dry	100	2/6/2013 15:57
Chromium	9.03		0.18	0.998	mg/Kg-dry	2	2/6/2013 13:42
Cobalt	2.92		0.070	0.499	mg/Kg-dry	1	2/5/2013 16:51
Copper	3.34		0.10	0.499	mg/Kg-dry	1	2/5/2013 16:51
Iron	5,630		10	49.9	mg/Kg-dry	1	2/5/2013 16:51
Lead	4.96		0.050	0.499	mg/Kg-dry	1	2/5/2013 16:51
Manganese	129		0.10	0.499	mg/Kg-dry	1	2/5/2013 16:51
Molybdenum	0.808		0.15	0.499	mg/Kg-dry	1	2/5/2013 16:51
Nickel	6.38		0.090	0.499	mg/Kg-dry	1	2/5/2013 16:51
Potassium	1,240		13	49.9	mg/Kg-dry	1	2/5/2013 16:51
Selenium	0.537		0.18	0.499	mg/Kg-dry	1	2/5/2013 16:51
Silver	U		0.080	0.499	mg/Kg-dry	1	2/5/2013 16:51
Sodium	113		11	49.9	mg/Kg-dry	1	2/5/2013 16:51
Uranium	U		0.50	0.499	mg/Kg-dry	1	2/5/2013 16:51
Zinc	16.1		0.25	0.499	mg/Kg-dry	1	2/5/2013 16:51
ANIONS - EPA 300.0 (1993)		Method: E300			Prep: E300 /	2/5/13	Analyst: JKP
Chloride	27.8		2.5	6.22	mg/Kg-dry	1	2/5/2013 23:47
Fluoride	7.12		0.37	1.24	mg/Kg-dry	1	2/5/2013 23:47
Nitrogen, Nitrate (As N)	U		0.37	1.24	mg/Kg-dry	1	2/5/2013 23:47
Nitrogen, Nitrite (As N)	U		0.37	1.24	mg/Kg-dry	1	2/5/2013 23:47
Sulfate	1,270		2.5	6.22	mg/Kg-dry	1	2/5/2013 23:47
Surr: Selenate (surr)	85.4			85-115	%REC	1	2/5/2013 23:47
CYANIDE		Meth	nod: SW9014		Prep: SW90	10C / 2/5/13	Analyst: EDG
Cyanide	U		0.69	2.29	mg/Kg-dry	1	2/5/2013 16:30
MOISTURE		Meth	nod: SW3550				Analyst: KAH
Percent Moisture	19.9		0.010	0.0100	wt%	1	2/5/2013 13:50

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302026

 Sample ID: MW-114 (17)
 Lab ID: 1302026-10

Collection Date: 1/28/2013 04:00 PM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 23.1
 0.010
 0.0100
 wt%
 1
 2/5/2013 13:50

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302026

 Sample ID: MW-114 (19)
 Lab ID: 1302026-11

Collection Date: 1/28/2013 04:05 PM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 23.5
 0.010
 0.0100
 wt%
 1
 2/5/2013 13:50

Client: Navajo Refining Company

Project: RO Discharge Sampling **Sample ID:** MW-114 (20)

Collection Date: 1/28/2013 04:10 PM

Date: 13-Feb-13

Work Order: 1302026

Lab ID: 1302026-12

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Meth	od: SW7471		Prep: SW74	71A / 2/5/13	Analyst: OFO
Mercury	U		0.37	4.58	μg/Kg-dry	1	2/5/2013 16:35
METALS		Method: SW6020		Prep: SW3050A / 2/4/13		Analyst: SKS	
Aluminum	8,460		24	120	mg/Kg-dry	100	2/6/2013 15:59
Arsenic	2.97		0.12	0.600	mg/Kg-dry	1	2/5/2013 16:54
Barium	191		0.096	0.600	mg/Kg-dry	1	2/5/2013 16:54
Boron	3.21		1.7	3.00	mg/Kg-dry	1	2/6/2013 13:45
Cadmium	0.186	J	0.060	0.600	mg/Kg-dry	1	2/5/2013 16:54
Calcium	120,000		1,200	6,000	mg/Kg-dry	100	2/6/2013 15:59
Chromium	3.77		0.11	0.600	mg/Kg-dry	1	2/6/2013 13:45
Cobalt	2.65		0.084	0.600	mg/Kg-dry	1	2/5/2013 16:54
Copper	3.97		0.12	0.600	mg/Kg-dry	1	2/5/2013 16:54
Iron	5,630		12	60.0	mg/Kg-dry	1	2/5/2013 16:54
Lead	4.37		0.060	0.600	mg/Kg-dry	1	2/5/2013 16:54
Manganese	137		0.12	0.600	mg/Kg-dry	1	2/5/2013 16:54
Molybdenum	0.594	J	0.18	0.600	mg/Kg-dry	1	2/5/2013 16:54
Nickel	5.71		0.11	0.600	mg/Kg-dry	1	2/5/2013 16:54
Potassium	1,610		16	60.0	mg/Kg-dry	1	2/5/2013 16:54
Selenium	0.453	J	0.22	0.600	mg/Kg-dry	1	2/5/2013 16:54
Silver	U		0.096	0.600	mg/Kg-dry	1	2/5/2013 16:54
Sodium	108		13	60.0	mg/Kg-dry	1	2/5/2013 16:54
Uranium	U		0.60	0.600	mg/Kg-dry	1	2/5/2013 16:54
Zinc	18.2		0.30	0.600	mg/Kg-dry	1	2/5/2013 16:54
ANIONS - EPA 300.0 (1993)		Method: E300		Prep: E300 / 2/5/13		Analyst: JKP	
Chloride	24.6		2.7	6.78	mg/Kg-dry	1	2/6/2013 00:02
Fluoride	4.19		0.41	1.36	mg/Kg-dry	1	2/6/2013 00:02
Nitrogen, Nitrate (As N)	U		0.41	1.36	mg/Kg-dry	1	2/6/2013 00:02
Nitrogen, Nitrite (As N)	U		0.41	1.36	mg/Kg-dry	1	2/6/2013 00:02
Sulfate	320		2.7	6.78	mg/Kg-dry	1	2/6/2013 00:02
Surr: Selenate (surr)	85.0			85-115	%REC	1	2/6/2013 00:02
CYANIDE		Meth	od: SW9014		Prep: SW90	10C / 2/5/13	Analyst: EDG
Cyanide	U		0.75	2.50	mg/Kg-dry	1	2/5/2013 16:30
MOISTURE		Meth	od: SW3550				Analyst: KAH
Percent Moisture	27.0		0.010	0.0100	wt%	1	2/5/2013 13:50

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302026

 Sample ID: MW-114 (21)
 Lab ID: 1302026-13

Collection Date: 1/28/2013 04:15 PM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 18.5
 0.010
 0.0100
 wt%
 1
 2/5/2013 13:50

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302026

 Sample ID: MW-114 (23)
 Lab ID: 1302026-14

Collection Date: 1/28/2013 04:15 PM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 16.9
 0.010
 0.0100
 wt%
 1
 2/5/2013 13:50

Client: Navajo Refining Company

Project: RO Discharge Sampling **Sample ID:** MW-114 (25)

Collection Date: 1/28/2013 04:20 PM

Date: 13-Feb-13

Work Order: 1302026

Lab ID: 1302026-15

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Meth	od: SW7471		Prep: SW74	71A / 2/5/13	Analyst: OFO
Mercury	7.38		0.37	4.60	μg/Kg-dry	1	2/5/2013 16:41
METALS		Meth	od: SW6020		Prep: SW30	50A / 2/4/13	Analyst: ALR
Aluminum	10,100		25	124	mg/Kg-dry	100	2/7/2013 15:35
Arsenic	3.14		0.25	1.24	mg/Kg-dry	2	2/8/2013 12:29
Barium	27.0		0.099	0.618	mg/Kg-dry	1	2/6/2013 04:18
Boron	5.20	J	3.5	6.18	mg/Kg-dry	2	2/7/2013 22:58
Cadmium	0.279	J	0.062	0.618	mg/Kg-dry	1	2/6/2013 04:18
Calcium	138,000		1,200	6,180	mg/Kg-dry	100	2/6/2013 21:57
Chromium	11.2		0.22	1.24	mg/Kg-dry	2	2/8/2013 12:29
Cobalt	4.08		0.17	1.24	mg/Kg-dry	2	2/8/2013 12:29
Copper	3.57		0.25	1.24	mg/Kg-dry	2	2/8/2013 12:29
Iron	9,390		25	124	mg/Kg-dry	2	2/8/2013 12:29
Lead	6.42		0.062	0.618	mg/Kg-dry	1	2/6/2013 04:18
Manganese	125		0.25	1.24	mg/Kg-dry	2	2/8/2013 12:29
Molybdenum	0.592	J	0.19	0.618	mg/Kg-dry	1	2/6/2013 04:18
Nickel	5.62		0.22	1.24	mg/Kg-dry	2	2/8/2013 12:29
Potassium	1,660		16	61.8	mg/Kg-dry	1	2/6/2013 04:18
Selenium	U		0.45	1.24	mg/Kg-dry	2	2/8/2013 12:29
Silver	U		0.099	0.618	mg/Kg-dry	1	2/6/2013 04:18
Sodium	181		27	124	mg/Kg-dry	2	2/7/2013 22:58
Uranium	U		0.62	0.618	mg/Kg-dry	1	2/6/2013 04:18
Zinc	23.0		0.62	1.24	mg/Kg-dry	2	2/8/2013 12:29
ANIONS - EPA 300.0 (1993)		Meth	od: E300		Prep: E300	/ 2/5/13	Analyst: JKP
Chloride	19.8		2.6	6.52	mg/Kg-dry	1	2/6/2013 00:16
Fluoride	4.63		0.39	1.30	mg/Kg-dry	1	2/6/2013 00:16
Nitrogen, Nitrate (As N)	U		0.39	1.30	mg/Kg-dry	1	2/6/2013 00:16
Nitrogen, Nitrite (As N)	U		0.39	1.30	mg/Kg-dry	1	2/6/2013 00:16
Sulfate	390		2.6	6.52	mg/Kg-dry	1	2/6/2013 00:16
Surr: Selenate (surr)	86.4			85-115	%REC	1	2/6/2013 00:16
CYANIDE		Meth	od: SW9014		Prep: SW90	10C / 2/5/13	Analyst: EDG
Cyanide	U		0.75	2.49	mg/Kg-dry	1	2/5/2013 16:30
MOISTURE	Method: SW3550					Analyst: KAH	
Percent Moisture	23.6		0.010	0.0100	wt%	1	2/5/2013 13:50

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302026

 Sample ID: MW-114 (27)
 Lab ID: 1302026-16

Collection Date: 1/28/2013 04:25 PM

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 24.9
 0.010
 0.0100
 wt%
 1
 2/5/2013 13:50

Client: Navajo Refining Company
Project: RO Discharge Sampling

Sample ID: MW-114 (29)

Collection Date: 1/28/2013 04:27 PM

Work Order: 1302026

Lab ID: 1302026-17

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
VOLATILES - SW8260C		Meth	od: SW8260				Analyst: WLR
1,1,1-Trichloroethane	U		1.7	5.0	μg/Kg	1	2/1/2013 15:12
1,1,2,2-Tetrachloroethane	U		0.50	5.0	μg/Kg	1	2/1/2013 15:12
1,1,2-Trichloroethane	U		2.0	5.0	μg/Kg	1	2/1/2013 15:12
1,1-Dichloroethane	U		0.50	5.0	μg/Kg	1	2/1/2013 15:12
1,1-Dichloroethene	U		1.5	5.0	μg/Kg	1	2/1/2013 15:12
1,2-Dibromoethane	U		0.70	5.0	μg/Kg	1	2/1/2013 15:12
1,2-Dichloroethane	U		0.60	5.0	μg/Kg	1	2/1/2013 15:12
Benzene	U		0.60	5.0	μg/Kg	1	2/1/2013 15:12
Carbon tetrachloride	U		1.2	5.0	μg/Kg	1	2/1/2013 15:12
Chloroform	U		1.8	5.0	μg/Kg	1	2/1/2013 15:12
Ethylbenzene	U		0.90	5.0	μg/Kg	1	2/1/2013 15:12
Methylene chloride	2.5	J	2.5	10	μg/Kg	1	2/1/2013 15:12
Tetrachloroethene	U		1.0	5.0	μg/Kg	1	2/1/2013 15:12
Toluene	U		0.70	5.0	μg/Kg	1	2/1/2013 15:12
Trichloroethene	U		1.6	5.0	μg/Kg	1	2/1/2013 15:12
Vinyl chloride	U		1.0	2.0	μg/Kg	1	2/1/2013 15:12
Xylenes, Total	U		2.6	15	μg/Kg	1	2/1/2013 15:12
Surr: 1,2-Dichloroethane-d4	88.1			70-128	%REC	1	2/1/2013 15:12
Surr: 4-Bromofluorobenzene	89.7			73-126	%REC	1	2/1/2013 15:12
Surr: Dibromofluoromethane	96.9			71-128	%REC	1	2/1/2013 15:12
Surr: Toluene-d8	101			73-127	%REC	1	2/1/2013 15:12

Client: Navajo Refining Company

Project: RO Discharge Sampling **Sample ID:** MW-114 (30)

Collection Date: 1/28/2013 04:00 PM

Date: 13-Feb-13

Work Order: 1302026

Lab ID: 1302026-18

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Meth	od: SW7471		Prep: SW74	71A / 2/5/13	Analyst: OFO
Mercury	U		0.39	4.79	μg/Kg-dry	1	2/5/2013 16:43
METALS		Meth	od: SW6020		Prep: SW30	50A / 2/4/13	Analyst: ALR
Aluminum	11,100		24	118	mg/Kg-dry	100	2/7/2013 15:40
Arsenic	1.13	J	0.24	1.18	mg/Kg-dry	2	2/8/2013 12:31
Barium	111		0.095	0.592	mg/Kg-dry	1	2/6/2013 04:23
Boron	3.95	J	3.3	5.92	mg/Kg-dry	2	2/7/2013 23:03
Cadmium	0.183	J	0.059	0.592	mg/Kg-dry	1	2/6/2013 04:23
Calcium	146,000		1,200	5,920	mg/Kg-dry	100	2/6/2013 22:02
Chromium	11.4		0.21	1.18	mg/Kg-dry	2	2/8/2013 12:31
Cobalt	3.60		0.17	1.18	mg/Kg-dry	2	2/8/2013 12:31
Copper	5.59		0.24	1.18	mg/Kg-dry	2	2/8/2013 12:31
Iron	8,870		24	118	mg/Kg-dry	2	2/8/2013 12:31
Lead	5.54		0.059	0.592	mg/Kg-dry	1	2/6/2013 04:23
Manganese	217		12	59.2	mg/Kg-dry	100	2/6/2013 22:02
Molybdenum	0.289	J	0.18	0.592	mg/Kg-dry	1	2/6/2013 04:23
Nickel	6.90		0.21	1.18	mg/Kg-dry	2	2/8/2013 12:31
Potassium	1,840		15	59.2	mg/Kg-dry	1	2/6/2013 04:23
Selenium	U		0.43	1.18	mg/Kg-dry	2	2/8/2013 12:31
Silver	U		0.095	0.592	mg/Kg-dry	1	2/6/2013 04:23
Sodium	208		26	118	mg/Kg-dry	2	2/7/2013 23:03
Uranium	U		0.59	0.592	mg/Kg-dry	1	2/6/2013 04:23
Zinc	23.4		0.59	1.18	mg/Kg-dry	2	2/8/2013 12:31
ANIONS - EPA 300.0 (1993)		Meth	od: E300		Prep: E300	/ 2/5/13	Analyst: JKP
Chloride	20.8		2.7	6.87	mg/Kg-dry	1	2/6/2013 01:00
Fluoride	2.25		0.41	1.37	mg/Kg-dry	1	2/6/2013 01:00
Nitrogen, Nitrate (As N)	U		0.41	1.37	mg/Kg-dry	1	2/6/2013 01:00
Nitrogen, Nitrite (As N)	U		0.41	1.37	mg/Kg-dry	1	2/6/2013 01:00
Sulfate	338		2.7	6.87	mg/Kg-dry	1	2/6/2013 01:00
Surr: Selenate (surr)	85.2			85-115	%REC	1	2/6/2013 01:00
CYANIDE		Meth	od: SW9014		Prep: SW90	10C / 2/5/13	Analyst: EDG
Cyanide	U		0.81	2.70	mg/Kg-dry	1	2/5/2013 16:30
MOISTURE	Method: SW3550					Analyst: KAH	
Percent Moisture	27.4		0.010	0.0100	wt%	1	2/5/2013 13:50

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302026

 Sample ID: MW-114 (31)
 Lab ID: 1302026-19

Collection Date: 1/28/2013 04:40 PM

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 33.7
 0.010
 0.0100
 wt%
 1
 2/5/2013 13:50

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302026

 Sample ID: MW-114 (33)
 Lab ID: 1302026-20

Collection Date: 1/28/2013 04:40 PM

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 27.7
 0.010
 0.0100
 wt%
 1
 2/5/2013 13:50

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-114 (35) **Collection Date:** 1/28/2013 04:50 PM

Work Order: 1302026

Lab ID: 1302026-21

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Met	hod: SW8015M		Prep: SW35	41 / 2/5/13	Analyst: KMB
TPH (Oil Range)	0.63	J	0.61	4.1	mg/Kg-dry	1	2/6/2013 15:51
TPH (Diesel Range)	U		0.61	2.1	mg/Kg-dry	1	2/6/2013 15:51
Surr: 2-Fluorobiphenyl	65.4			60-135	%REC	1	2/6/2013 15:51
GASOLINE RANGE ORGANICS - SW80150	;	Met	hod: SW8015				Analyst: KKP
Gasoline Range Organics	U		0.024	0.061	mg/Kg-dry	1	2/5/2013 17:45
Surr: 4-Bromofluorobenzene	88.7			70-130	%REC	1	2/5/2013 17:45
MERCURY - SW7471B		Met	hod: SW7471A		Prep: SW74	71A / 2/5/13	Analyst: OFO
Mercury	U		0.33	4.12	μg/Kg-dry	1	2/5/2013 16:45
METALS		Met	hod: SW6020		Prep: SW30	50A / 2/4/13	Analyst: ALR
Aluminum	8,660		18	88.4	mg/Kg-dry	100	2/7/2013 15:45
Arsenic	1.09		0.088	0.442	mg/Kg-dry	1	2/6/2013 04:28
Barium	75.2		0.071	0.442	mg/Kg-dry	1	2/6/2013 04:28
Boron	2.39		1.2	2.21	mg/Kg-dry	1	2/7/2013 23:07
Cadmium	0.129	J	0.044	0.442	mg/Kg-dry	1	2/6/2013 04:28
Calcium	50,400		880	4,420	mg/Kg-dry	100	2/6/2013 22:07
Chromium	7.82		0.080	0.442	mg/Kg-dry	1	2/6/2013 04:28
Cobalt	2.38		0.062	0.442	mg/Kg-dry	1	2/6/2013 04:28
Copper	2.71		0.088	0.442	mg/Kg-dry	1	2/6/2013 04:28
Iron	5,410		8.8	44.2	mg/Kg-dry	1	2/6/2013 04:28
Lead	4.82		0.044	0.442	mg/Kg-dry	1	2/6/2013 04:28
Manganese	88.1		0.088	0.442	mg/Kg-dry	1	2/6/2013 04:28
Molybdenum	0.187	J	0.13	0.442	mg/Kg-dry	1	2/6/2013 04:28
Nickel	5.19		0.080	0.442	mg/Kg-dry	1	2/6/2013 04:28
Potassium	1,860		11	44.2	mg/Kg-dry	1	2/6/2013 04:28
Selenium	0.258	J	0.16	0.442	mg/Kg-dry	1	2/6/2013 04:28
Silver	U		0.071	0.442	mg/Kg-dry	1	2/6/2013 04:28
Sodium	125		9.7	44.2	mg/Kg-dry	1	2/7/2013 23:07
Uranium	U		0.44	0.442	mg/Kg-dry	1	2/6/2013 04:28
Zinc	14.4		0.22	0.442	mg/Kg-dry	1	2/6/2013 04:28
LOW-LEVEL SEMIVOLATILES		Met	hod: SW8270		Prep: SW35	41 / 2/7/13	Analyst: LG
1-Methylnaphthalene	U		1.9	8.0	μg/Kg-dry	1	2/7/2013 18:53
2-Methylnaphthalene	U		1.9	8.0	μg/Kg-dry	1	2/7/2013 18:53
Benzo(a)pyrene	U		1.9	8.0	μg/Kg-dry	1	2/7/2013 18:53
Naphthalene	U		1.9	8.0	μg/Kg-dry	1	2/7/2013 18:53
Surr: 2,4,6-Tribromophenol	71.2			36-126	%REC	1	2/7/2013 18:53
Surr: 2-Fluorobiphenyl	74.6			43-125	%REC	1	2/7/2013 18:53

Client: Navajo Refining Company

Project: RO Discharge Sampling
Sample ID: MW-114 (35)

Collection Date: 1/28/2013 04:50 PM

Work Order: 1302026

Date: 13-Feb-13

Lab ID: 1302026-21

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 2-Fluorophenol	57.2			37-125	%REC	1	2/7/2013 18:53
Surr: 4-Terphenyl-d14	101			32-125	%REC	1	2/7/2013 18:53
Surr: Nitrobenzene-d5	71.9			37-125	%REC	1	2/7/2013 18:53
Surr: Phenol-d6	67.5			40-125	%REC	1	2/7/2013 18:53
VOLATILES - SW8260C		Metl	hod: SW8260				Analyst: WLR
1,1,1-Trichloroethane	U		2.1	6.1	μg/Kg-dry	1	2/1/2013 15:35
1,1,2,2-Tetrachloroethane	U		0.61	6.1	μg/Kg-dry	1	2/1/2013 15:35
1,1,2-Trichloroethane	U		2.4	6.1	μg/Kg-dry	1	2/1/2013 15:35
1,1-Dichloroethane	U		0.61	6.1	μg/Kg-dry	1	2/1/2013 15:35
1,1-Dichloroethene	U		1.8	6.1	μg/Kg-dry	1	2/1/2013 15:35
1,2-Dibromoethane	U		0.85	6.1	μg/Kg-dry	1	2/1/2013 15:35
1,2-Dichloroethane	U		0.73	6.1	μg/Kg-dry	1	2/1/2013 15:35
Benzene	U		0.73	6.1	μg/Kg-dry	1	2/1/2013 15:35
Carbon tetrachloride	U		1.5	6.1	μg/Kg-dry	1	2/1/2013 15:35
Chloroform	U		2.2	6.1	μg/Kg-dry	1	2/1/2013 15:35
Ethylbenzene	U		1.1	6.1	μg/Kg-dry	1	2/1/2013 15:35
Methylene chloride	3.8	J	3.0	12	μg/Kg-dry	1	2/1/2013 15:35
Tetrachloroethene	U		1.2	6.1	μg/Kg-dry	1	2/1/2013 15:35
Toluene	U		0.85	6.1	μg/Kg-dry	1	2/1/2013 15:35
Trichloroethene	U		1.9	6.1	μg/Kg-dry	1	2/1/2013 15:35
Vinyl chloride	U		1.2	2.4	μg/Kg-dry	1	2/1/2013 15:35
Xylenes, Total	U		3.2	18	μg/Kg-dry	1	2/1/2013 15:35
Surr: 1,2-Dichloroethane-d4	97.5			70-128	%REC	1	2/1/2013 15:35
Surr: 4-Bromofluorobenzene	89.3			73-126	%REC	1	2/1/2013 15:35
Surr: Dibromofluoromethane	96.7			71-128	%REC	1	2/1/2013 15:35
Surr: Toluene-d8	95.2			73-127	%REC	1	2/1/2013 15:35
ANIONS - EPA 300.0 (1993)		Metl	hod: E300		Prep: E300	/ 2/5/13	Analyst: JKP
Chloride	19.6		2.4	6.01	mg/Kg-dry	1	2/6/2013 01:14
Fluoride	3.20		0.36	1.20	mg/Kg-dry	1	2/6/2013 01:14
Nitrogen, Nitrate (As N)	U		0.36	1.20	mg/Kg-dry	1	2/6/2013 01:14
Nitrogen, Nitrite (As N)	U		0.36	1.20	mg/Kg-dry	1	2/6/2013 01:14
Sulfate	259		2.4	6.01	mg/Kg-dry	1	2/6/2013 01:14
Surr: Selenate (surr)	88.0			85-115	%REC	1	2/6/2013 01:14
CYANIDE		Metl	hod: SW9014		Prep: SW90	10C / 2/5/13	Analyst: EDG
Cyanide	U		0.65	2.18	mg/Kg-dry	1	2/5/2013 16:30
MOISTURE		Metl	hod: SW3550				Analyst: KAH
Percent Moisture	17.5		0.010	0.0100	wt%	1	2/5/2013 13:50

Collection Date: 1/31/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling Work
Sample ID: Trip Blank 011813-19

Work Order: 1302026 Lab ID: 1302026-22 Matrix: WATER

Date: 13-Feb-13

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
LOW LEVEL VOLATILES - SW8260C		Metho	od: SW8260				Analyst: AKP
1,1,1-Trichloroethane	U		0.00030	0.0010	mg/L	1	2/4/2013 17:19
1,1,2,2-Tetrachloroethane	U		0.00050	0.0010	mg/L	1	2/4/2013 17:19
1,1,2-Trichloroethane	U		0.00030	0.0010	mg/L	1	2/4/2013 17:19
1,1-Dichloroethane	U		0.00030	0.0010	mg/L	1	2/4/2013 17:19
1,1-Dichloroethene	U		0.00050	0.0010	mg/L	1	2/4/2013 17:19
1,2-Dibromoethane	U		0.00030	0.0010	mg/L	1	2/4/2013 17:19
1,2-Dichloroethane	U		0.00030	0.0010	mg/L	1	2/4/2013 17:19
Benzene	U		0.00020	0.0010	mg/L	1	2/4/2013 17:19
Carbon tetrachloride	U		0.00030	0.0010	mg/L	1	2/4/2013 17:19
Chloroform	U		0.00030	0.0010	mg/L	1	2/4/2013 17:19
Ethylbenzene	U		0.00030	0.0010	mg/L	1	2/4/2013 17:19
Methylene chloride	U		0.00040	0.0020	mg/L	1	2/4/2013 17:19
Tetrachloroethene	U		0.00040	0.0010	mg/L	1	2/4/2013 17:19
Toluene	U		0.00030	0.0010	mg/L	1	2/4/2013 17:19
Trichloroethene	U		0.00020	0.0010	mg/L	1	2/4/2013 17:19
Vinyl chloride	U		0.00040	0.0010	mg/L	1	2/4/2013 17:19
Xylenes, Total	U		0.00030	0.0010	mg/L	1	2/4/2013 17:19
Surr: 1,2-Dichloroethane-d4	94.1			71-125	%REC	1	2/4/2013 17:19
Surr: 4-Bromofluorobenzene	95.1			70-125	%REC	1	2/4/2013 17:19
Surr: Dibromofluoromethane	101			74-125	%REC	1	2/4/2013 17:19
Surr: Toluene-d8	99.2			78-123	%REC	1	2/4/2013 17:19

Date: 13-Feb-13 **ALS** Environmental

Navajo Refining Company **Client:**

1302026 Work Order:

Project: **RO** Discharge Sampling QC BATCH REPORT

Batch ID: 67579	Instrument ID FID-7		Metho	d: SW8015	VI					
MBLK Sample ID: FE	BLKS1-130205-67579				Units: mg/l	Kg	Analysis	Date: 2/	6/2013 11	:56 AM
Client ID:	Run II	D: FID-7 _1	30206A	8	SeqNo: 310 4	4153	Prep Date: 2/5/20)13	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Oil Range)	U	3.4								
TPH (Diesel Range)	U	1.7								
Surr: 2-Fluorobiphenyl	2.092	0.10	3.33	0	62.8	60-135	0			
LCS Sample ID: FL	_CSS1-130205-67579				Units: mg/l	Kg	Analysis	Date: 2/	6/2013 12	:19 PM
Client ID:	Run I): FID-7 _1	30206A	S	SeqNo: 310 4	4154	Prep Date: 2/5/20)13	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Oil Range)	27.05	3.4	33.33	0	81.2	70-130	0			
TPH (Diesel Range)	35.72	1.7	33.33	0	107	70-130	0			
Surr: 2-Fluorobiphenyl	2.536	0.10	3.33	0	76.2	60-135	0			
MS Sample ID: 13	802018-01BMS				Units: mg/l	Kg	Analysis	Date: 2/	6/2013 01	:06 PM
Client ID:	Run I	D: FID-7 _1	30206A	8	SeqNo: 310 4	4156	Prep Date: 2/5/20)13	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Oil Range)										
II II (Oli Italiye)	229.1	3.4	33.23	219.8	28.1	70-130	0			SEO
TPH (Diesel Range)	229.1 80.52	3.4 1.7	33.23 33.23	219.8 75.45	_	70-130 70-130	0			SEO SE
, ,	_				15.3		_			
TPH (Diesel Range) Surr: 2-Fluorobiphenyl	80.52	1.7	33.23	75.45	15.3	70-130 <i>60-135</i>	0	Date: 2/ 0	6/2013 01	SE
TPH (Diesel Range) Surr: 2-Fluorobiphenyl	80.52 2.284 802018-01BMSD	1.7	33.23 3.32	75.45 0	15.3 68.8	70-130 <i>60-135</i> Kg	0		6/2013 01: DF: 1	SE
TPH (Diesel Range) Surr: 2-Fluorobiphenyl MSD Sample ID: 13	80.52 2.284 802018-01BMSD	1.7 0.10	33.23 3.32	75.45 0	15.3 68.8 Units: mg/ l	70-130 <i>60-135</i> Kg	0 0 Analysis Prep Date: 2/5/20 RPD Ref			SE
TPH (Diesel Range) Surr: 2-Fluorobiphenyl MSD Sample ID: 13 Client ID:	80.52 2.284 802018-01BMSD Run IE	1.7 0.10 D: FID-7 _1	33.23 3.32 130206A	75.45 0 SPK Ref	15.3 68.8 Units: mg/l SeqNo: 3104 %REC	70-130 <i>60-135</i> Kg 4157 Control	0 0 Analysis Prep Date: 2/5/20 RPD Ref)13	DF: 1 RPD	SE :29 PM
TPH (Diesel Range) Surr: 2-Fluorobiphenyl MSD Sample ID: 13 Client ID: Analyte	80.52 2.284 802018-01BMSD Run IE	1.7 0.10 D: FID-7_ 1	33.23 3.32 130206A SPK Val	75.45 0 S SPK Ref Value	15.3 68.8 Units: mg/l SeqNo: 3104 %REC	70-130 60-135 Kg 4157 Control Limit	0 0 Analysis Prep Date: 2/5/20 RPD Ref Value	013 %RPD	DF: 1 RPD Limit	SE:29 PM
TPH (Diesel Range) Surr: 2-Fluorobiphenyl MSD Sample ID: 13 Client ID: Analyte TPH (Oil Range)	80.52 2.284 802018-01BMSD Run IE Result	1.7 0.10 D: FID-7_ 1 PQL 3.4	33.23 3.32 130206A SPK Val 33.24	75.45 0 SPK Ref Value	15.3 68.8 Units: mg/l SeqNo: 3104 %REC -37.7 3.32	70-130 60-135 Kg 4157 Control Limit 70-130	0 0 Analysis Prep Date: 2/5/20 RPD Ref Value	%RPD 10	DF: 1 RPD Limit	SE :29 PM Qual SEO

Navajo Refining Company **Client:**

Work Order: 1302026

RO Discharge Sampling **Project:**

Batch ID: R142225 Instrume	nt ID FID-9		Metho	d: SW80 1	15						
MBLK Sample ID: GBLKS-13	0205-R142225				L	Jnits: mg/	Kg	Analys	is Date: 2/	5/2013 01	:02 PN
Client ID:	Run	ID: FID-9 _	130205A		Se	qNo: 310 :	3619	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	U	0.050									
Surr: 4-Bromofluorobenzene	0.08374	0.0050	0.1		0	83.7	70-130	0			
LCS Sample ID: GLCSS-13	0205-R142225				L	Jnits: mg/	Kg	Analys	is Date: 2/	5/2013 12	:25 PM
Client ID:	Run	ID: FID-9 _	130205A		Se	qNo: 310 :	3613	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.942	0.050	1		0	94.2	70-130	0			
Surr: 4-Bromofluorobenzene	0.09701	0.0050	0.1		0	97	70-130	0			
LCSD Sample ID: GLCSDS-1	30205-R142225				L	Jnits: mg/	Kg	Analys	is Date: 2/	5/2013 12	:44 PN
Client ID:	Run	ID: FID-9 _	130205A		Se	qNo: 310 :	3616	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.9525	0.050	1		0	95.2	70-130	0.942	1.11	30	
Surr: 4-Bromofluorobenzene	0.09686	0.0050	0.1		0	96.9	70-130	0.09701	0.146	30	
MS Sample ID: 1302018-0	4ZMS				L	Jnits: mg/	Kg	Analys	is Date: 2/	5/2013 04	:11 PM
Client ID:	Run	ID: FID-9 _′	130205A		Se	qNo: 310 :	3628	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.8005	0.050	1		0	80	70-130	0			
Surr: 4-Bromofluorobenzene	0.08728	0.0050	0.1		0	87.3	70-130	0			
MSD Sample ID: 1302018-0	4ZMSD				L	Jnits: mg/	Kg	Analys	is Date: 2/	5/2013 04	:30 PM
Client ID:	Run	ID: FID-9 _	130205A		Se	qNo: 310 :	3632	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.8125	0.050	1		0	81.2	70-130	0.8005	1.49	30	
Surr: 4-Bromofluorobenzene	0.08872	0.0050	0.1		0	88.7	70-130	0.08728	1.64	30	
The following samples were analyz	ed in this batch:	13	302026-01B	13	3020	26-21B					

Client: Navajo Refining Company

Work Order: 1302026

Project: RO Discharge Sampling

Batch ID: 67523	Instrument ID ICPMS05		Method	SW602	20					
MBLK Sa	ample ID: MBLKS1-020113-67523				Units: mg/	Kg	Analy	sis Date: 2	2/5/2013 0	3:05 PN
Client ID:	Run	ID: ICPMS	05_130205A		SeqNo: 310 2	2200	Prep Date: 2/4	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Aluminum	0.4165	1.0								J
Arsenic	U	0.50								
Barium	U	0.50								
Cadmium	U	0.50								
Calcium	U	50								
Chromium	U	0.50								
Cobalt	U	0.50								
Copper	U	0.50								
Iron	U	50								
Lead	U	0.50								
Manganese	U	0.50								
Molybdenum	U	0.50								
Nickel	U	0.50								
Potassium	U	50								
Selenium	U	0.50								
Silver	U	0.50								
Uranium	U	0.50								
Zinc	U	0.50								
MBLK Sa	ample ID: MBLKS1-020113-67523				Units: mg/	Kg	Analy	sis Date: 2	2/6/2013 12	2:35 PN
Client ID:	Run	ID: ICPMS	05_130206A		SeqNo: 310 3	3603	Prep Date: 2/4	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Boron	U	2.5								
Sodium	U	50								

Client: Navajo Refining Company

Work Order: 1302026

Analyte Boron

Sodium

Project: RO Discharge Sampling

Batch ID: 67523 Instrument ID ICPMS05 Method: SW6020 **LCS** Sample ID: MLCSS1-020113-67523 Units: mg/Kg Analysis Date: 2/5/2013 03:08 PM Client ID: SeqNo: 3102201 Prep Date: 2/4/2013 DF: 1 Run ID: ICPMS05_130205A **RPD** SPK Ref Control RPD Ref Value Limit Value Limit Analyte Result PQL SPK Val %REC %RPD Qual 0 Aluminum 10.68 1.0 10 0 107 80-120 10 80-120 Arsenic 9.673 0.50 0 96.7 0 0 0 **Barium** 10.35 0.50 10 104 80-120 Cadmium 9.748 0.50 10 0 97.5 80-120 0 Calcium 992.3 50 1000 0 99.2 80-120 0 0 Chromium 9.832 0.50 10 98.3 80-120 0 80-120 Cobalt 0.50 10 0 99.3 0 9.927 0.50 10 0 0 Copper 10.12 101 80-120 Iron 974.8 50 1000 0 97.5 80-120 0 0 0 Lead 9.786 0.50 10 97.9 80-120 Manganese 9.681 0.50 10 0 96.8 80-120 0 Molybdenum 9.985 0.50 10 0 99.8 80-120 0 0 0 Nickel 0.50 10 98.3 9.83 80-120 Potassium 956.7 50 1000 0 95.7 80-120 0 0 0 Selenium 9.813 0.50 10 98.1 80-120 0 0 Silver 10.22 0.50 10 102 80-120 80-120 0 Uranium 9.429 0.50 10 0 94.3 0 Zinc 9.937 0.50 10 99.4 80-120 0 LCS Sample ID: MLCSS1-020113-67523 Analysis Date: 2/6/2013 12:38 PM Units: mg/Kg SeqNo: 3103604 Prep Date: 2/4/2013 Client ID: Run ID: ICPMS05_130206A DF: 1 RPD SPK Ref RPD Ref Control Value Value Limit Limit

SPK Val

50

1000

PQL

2.5

50

Result

47.92

981.7

%REC

95.8

98.2

80-120

80-120

0

0

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

%RPD

0

0

Client: Navajo Refining Company

Work Order: 1302026

Project: RO Discharge Sampling

Batch ID: 67523 Instrument ID ICPMS05 Method: SW6020

MS	Sample ID: 13011005-01DMS				Units: mg/	'Kg	Analysis Date: 2	/5/2013 03	:22 PM
Client ID:	F	Run ID: ICPMS	605_130205A	S	eqNo: 310 :	2207	Prep Date: 2/4/2013	DF: 1	
Analyte	Resul	t PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value %RPD	RPD Limit	Qual
Aluminum	13710	0.84	8.429	12570	13500	75-125	0		SEO
Arsenic	11.7	0.42	8.429	4.385	86.9	75-125	0		
Barium	138.7	7 0.42	8.429	129.6	107	75-125	0		0
Cadmium	8.00	0.42	8.429	0.4065	90.1	75-125	0		
Calcium	57470) 42	842.9	57640	-19.7	75-125	0		SEO
Chromium	22.67	7 0.42	8.429	14.02	103	75-125	0		
Cobalt	13.02	0.42	8.429	5.519	89	75-125	0		
Copper	18.8	0.42	8.429	11.12	91.1	75-125	0		
Iron	11500) 42	842.9	10120	164	75-125	0		SO
Lead	22.8	0.42	8.429	14.66	96.6	75-125	0		
Manganese	381.8	0.42	8.429	383.5	-20	75-125	0		SEO
Molybdenum	6.315	0.42	8.429	0.5853	68	75-125	0		S
Nickel	19.09	0.42	8.429	11.62	88.6	75-125	0		
Selenium	7.99	0.42	8.429	0.9501	83	75-125	0		
Silver	8.085	0.42	8.429	0.05106	95.3	75-125	0		
Uranium	8.095	0.42	8.429	0.408	91.2	75-125	0		
Zinc	46.09	0.42	8.429	37.34	103	75-125	0		0

MS	Sample ID: 13011005-01DMS	3				Units: mg/	/Kg	Analys	sis Date: 2	2/6/2013 12:	.50 PM
Client ID:		Run	ID: ICPMS	05_130206A		SeqNo: 310	3618	Prep Date: 2/4/2013		DF: 2	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron		39.78	4.2	42.14	60.1	18 -48.4	75-125	C)		S
Potassium		4808	84	842.9	355	3 149	75-125	()		SO
Sodium		914.3	84	842.9	168	.4 88.5	75-125	C)		

Client: Navajo Refining Company

Work Order: 1302026

Project: RO Discharge Sampling

Batch ID: 67523	Instrument ID ICPMS05	Method: SW6020
-----------------	-----------------------	----------------

MSD Sam	ple ID: 13011005-01DMSD			ı	Jnits: mg/	Kg	Analysi	is Date: 2/	5/2013 03	:25 PM
Client ID:	Run ID	: ICPMS	05_130205A	Se	eqNo: 310	2208	Prep Date: 2/4/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	12110	0.80	7.956	12570	-5790	75-125	13710	12.4	25	SEO
Arsenic	11.34	0.40	7.956	4.385	87.4	75-125	11.71	3.25	25	
Barium	134	0.40	7.956	129.6	54.7	75-125	138.7	3.43	25	SO
Cadmium	7.562	0.40	7.956	0.4065	89.9	75-125	8.001	5.64	25	
Calcium	52910	40	795.6	57640	-594	75-125	57470	8.27	25	SEO
Chromium	20.95	0.40	7.956	14.02	87.1	75-125	22.67	7.88	25	
Cobalt	12.38	0.40	7.956	5.519	86.3	75-125	13.02	5.05	25	
Copper	17.82	0.40	7.956	11.12	84.3	75-125	18.8	5.32	25	
Iron	10370	40	795.6	10120	31.2	75-125	11500	10.3	25	SO
Lead	22.24	0.40	7.956	14.66	95.2	75-125	22.81	2.51	25	
Manganese	389.4	0.40	7.956	383.5	74	75-125	381.8	1.96	25	SEO
Molybdenum	5.373	0.40	7.956	0.5853	60.2	75-125	6.315	16.1	25	S
Nickel	18.17	0.40	7.956	11.62	82.4	75-125	19.09	4.89	25	
Selenium	7.14	0.40	7.956	0.9501	77.8	75-125	7.95	10.7	25	
Silver	7.509	0.40	7.956	0.05106	93.7	75-125	8.085	7.4	25	
Uranium	7.518	0.40	7.956	0.408	89.4	75-125	8.095	7.39	25	
Zinc	44.04	0.40	7.956	37.34	84.2	75-125	46.05	4.46	25	0

MSD	Sample ID: 13011005-01DMS	D				Units: mg/	Kg	Analysi	s Date: 2/	/6/2013 12	:52 PM
Client ID:		Run I	D: ICPMS	5_130206A		SeqNo: 310	3621	Prep Date: 2/4/2	2013	DF: 2	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron		37.07	4.0	39.78	60.1	8 -58.1	75-125	39.78	7.06	25	S
Potassium		4552	80	795.6	355	3 126	75-125	4808	5.48	25	SO
Sodium		855.4	80	795.6	168	4 86.4	75-125	914.3	6.65	25	

Client: Navajo Refining Company

Work Order: 1302026

Project: RO Discharge Sampling

Batch ID: 675	Instrument ID ICPMS05	;	Method	d: SW602	20						
DUP	Sample ID: 13011005-01DDUP				L	Jnits: mg/	Kg	Analysi	s Date: 2/	5/2013 03	:20 PM
Client ID:	Ru	ın ID: ICPN	IS05_130205A		Se	qNo: 310 2	2206	Prep Date: 2/4/2	2013	DF: 1	
Analyte	Result	PQ	L SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Arsenic	4.109	0.4	2 0		0	0	0-0	4.385	6.5	25	
Barium	122.9	0.4			0	0	0-0	129.6	5.34	25	
Cadmium	0.3587	0.4	2 0		0	0	0-0	0.4065	0	25	J
Chromium	13.06	0.4	2 0		0	0	0-0	14.02	7.09	25	
Cobalt	5.04	0.4	2 0		0	0	0-0	5.519	9.08	25	
Copper	10.23	0.4	2 0		0	0	0-0	11.12	8.3	25	
Iron	9434	4	2 0		0	0	0-0	10120	7.01	25	
Lead	14.13	0.4	2 0		0	0	0-0	14.66	3.72	25	
Molybdenum	0.5423	0.4	2 0		0	0	0-0	0.5853	7.63	25	
Nickel	10.65	0.4	2 0		0	0	0-0	11.62	8.76	25	
Selenium	0.8324	0.4	2 0		0	0	0-0	0.9501	13.2	25	
Silver	U	0.4	2 0		0	0	0-0	0.05106	0	25	
Uranium	U	0.4	2 0		0	0		0.408	0	25	
Zinc	34.3	0.4	2 0		0	0	0-0	37.34	8.48	25	
DUP	Sample ID: 13011005-01DDUP				L	Jnits: mg/	Kg	Analysi	s Date: 2/	6/2013 12	:47 PN
Client ID:	Ru	ın ID: ICPN	1S05_130206A	Ī	Se	qNo: 310 3	3614	Prep Date: 2/4/2	2013	DF: 2	
Analyte	Result	PQ	L SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Boron	6.159	4.	2 0		0	0	0-0	60.18	163	25	R
Potassium	3479	8			0	0	0-0	3553	2.09	25	
Sodium	122.9	8			0	0	0-0	168.4	31.2	25	R
DUP	Sample ID: 13011005-01DDUP				L	Jnits: mg/	Kg	Analysi	s Date: 2/	6/2013 03	:01 PN
Client ID:	Ru	ın ID: ICPN	1S05_130206A		Se	qNo: 310 :	3960	Prep Date: 2/4/2	2013	DF: 10	0
				SPK Ref			Control	RPD Ref		RPD	
Analyte	Result	PQ	L SPK Val	Value		%REC	Limit	Value	%RPD	Limit	Qua
Aluminum	13720	8	3 0		0	0	0-0	14570	6.05	25	
Calcium	56380	4,20	0 0		0	0	0-0	60800	7.55	25	
Manganese	355.2	4			0	0	0-0	374.9	5.4	25	
The following	g samples were analyzed in this batc	ch:	1302026-01D 1302026-09D			26-03D 26-12D	13	02026-06D			

Note:

Client: Navajo Refining Company

Work Order: 1302026

Project: RO Discharge Sampling

Batch ID: 67	565 Instrun	nent ID ICP7500		Method	: SW602	20					
MBLK	Sample ID: MBLKS2	2-020413-67565				Units: mg/	Kg	Analy	sis Date: 2	/6/2013 03	3:58 AM
Client ID:		Run II	D: ICP750	0_130205A		SeqNo: 310 2	2916	Prep Date: 2/4	/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic		U	0.50								
Barium		U	0.50								
Cadmium		U	0.50								
Calcium		U	50								
Chromium		U	0.50								
Cobalt		U	0.50								
Copper		U	0.50								
Iron		U	50								
Lead		U	0.50								
Manganese		U	0.50								
Nickel		U	0.50								
Potassium		U	50								
Selenium		U	0.50								
Silver		U	0.50								
Zinc		U	0.50								
MBLK	Sample ID: MBLKS2	2-020413-67565				Units: mg/	Kg	Analy	sis Date: 2	/6/2013 09	9:47 PM
Client ID:		Run II	D: ICP750	0_130206A		SeqNo: 310	4742	Prep Date: 2/4	/2013	DF: 1	
					SPK Ref		Control	RPD Ref		RPD	
Analyte		Result	PQL	SPK Val	Value	%REC	Limit	Value	%RPD	Limit	Qual
Molybdenum		0.1634	0.50								J
Sodium		U	50								
Uranium		U	0.50								
MBLK	Sample ID: MBLKS2	2-020413-67565				Units: mg/	Kg	Analy	sis Date: 2	/7/2013 03	3:25 PM
		Run II	D: ICP750	0_130207A		SeqNo: 310	5518	Prep Date: 2/4	/2013	DF: 1	
Client ID:					SPK Ref		Control	RPD Ref		RPD	
		Result	PQL	SPK Val	Value	%REC	Limit	Value	%RPD	Limit	Qual
Client ID: Analyte Aluminum		Result 0.3613	PQL 1.0	SPK Val				Value	%RPD		Qual J

Client: Navajo Refining Company

Work Order: 1302026

Project: RO Discharge Sampling

Batch ID: 67	Instrument ID I	CP7500		Method	: SW602	20						
LCS	Sample ID: MLCSS2-020413	3-67565				ι	Jnits: mg/	Kg	Analys	sis Date: 2	/6/2013 04	:03 AM
Client ID:		Run	ID: ICP750	0_130205A		Se	qNo: 310 2	2917	Prep Date: 2/4	/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic		9.24	0.50	10		0	92.4	80-120	C	1		
Barium		8.495	0.50	10		0	85	80-120	C			
Cadmium		9.81	0.50	10		0	98.1	80-120	C			
Calcium		875.2	50	1000		0	87.5	80-120	C			
Chromium		9.483	0.50	10		0	94.8	80-120	C			
Cobalt		9.283	0.50	10		0	92.8	80-120	C			
Copper		9.733	0.50	10		0	97.3	80-120	C			
Iron		927.1	50	1000		0	92.7	80-120	C			
Lead		9.443	0.50	10		0	94.4	80-120	C			
Manganese		9.191	0.50	10		0	91.9	80-120	C			
Nickel		9.636	0.50	10		0	96.4	80-120	C			
Potassium		940.6	50	1000		0	94.1	80-120	C			
Selenium		8.974	0.50	10		0	89.7	80-120	C			
Silver		9.882	0.50	10		0	98.8	80-120	C			
Zinc		9.286	0.50	10		0	92.9	80-120	C			
LCS	Sample ID: MLCSS2-020413	3-67565				Ĺ	Jnits: mg/	Kg	Analys	sis Date: 2	/6/2013 09):52 PM
Client ID:		Run	ID: ICP750	0_130206A		Se	qNo: 310	4743	Prep Date: 2/4	/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Molybdenum		9.772	0.50	10		0	97.7	80-120	C	1		
Sodium		995	50	1000		0	99.5	80-120	C			
Uranium		9.859	0.50	10		0	98.6	80-120	C			
LCS	Sample ID: MLCSS2-020413	3-67565				ι	Jnits: mg/	Kg	Analys	sis Date: 2	/7/2013 03	3:30 PM
Client ID:		Run	ID: ICP750	0_130207A		Se	qNo: 310	5519	Prep Date: 2/4	/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
												Quai
Aluminum		11.13	1.0	10		0	111	80-120	C			
Boron		49.37	2.5	50		0	98.7	80-120	С			

Client: Navajo Refining Company

Work Order: 1302026

Project: RO Discharge Sampling

Batch ID: 67565 Instrument ID ICP7500 Method: SW6020

MS	Sample ID: 1302050-13CMS					Units: mg/	Kg	Analys	sis Date: 2	2/6/2013 06	3:33 AN
Client ID:		Run I	D: ICP750	0_130205A	S	eqNo: 310 :	3165	Prep Date: 2/4	/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum		9801	0.91	9.142	8799	11000	75-125	0	ı		SEC
Arsenic		9.095	0.46	9.142	2.719	69.7	75-125	0	ı		S
Barium		205.3	0.46	9.142	248.5	-472	75-125	0	1		SEC
Boron		74.89	2.3	45.71	43.78	68	75-125	0	1		S
Cadmium		6.168	0.46	9.142	0.1425	65.9	75-125	0	1		S
Calcium		57630	46	914.2	64440	-745	75-125	0	ı		SEC
Chromium		11.99	0.46	9.142	4.839	78.3	75-125	0	ı		
Cobalt		8.613	0.46	9.142	2.496	66.9	75-125	0	1		S
Copper		9.6	0.46	9.142	3.624	65.4	75-125	0	ı		S
Iron		5014	46	914.2	3874	125	75-125	0	1		0
Lead		10.49	0.46	9.142	4.582	64.6	75-125	0	ı		S
Manganese		111.9	0.46	9.142	112	-1.15	75-125	0	ı		SO
Molybdenum		5.08	0.46	9.142	0.01985	55.3	75-125	0	ı		S
Nickel		10.48	0.46	9.142	4.305	67.5	75-125	0	ı		S
Potassium		2655	46	914.2	2072	63.7	75-125	0	ı		S
Selenium		6.529	0.46	9.142	0.3095	68	75-125	0	ı		S
Silver		6.245	0.46	9.142	-0.01784	68.5	75-125	0	ı		S
Sodium		3053	46	914.2	2827	24.7	75-125	0	ı		S
Uranium		6.374	0.46	9.142	0.1944	67.6	75-125	0	1		S
Zinc		17.28	0.46	9.142	10.13	78.2	75-125	0	ı		

Client: Navajo Refining Company

Work Order: 1302026

Project: RO Discharge Sampling

Batch ID: 67565 Instrument ID ICP7500 Method: SW6020

MSD Sample II	D: 1302050-13CMSD				Units: mg/	Kg	Analysi	s Date: 2/	6/2013 06	6:38 AM
Client ID:	Run II	D: ICP750	0_130205A	Se	eqNo: 310 :	3166	Prep Date: 2/4/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	11950	0.90	9.049	8799	34900	75-125	9801	19.8	25	SEO
Arsenic	10.27	0.45	9.049	2.719	83.4	75-125	9.095	12.1	25	
Barium	274.2	0.45	9.049	248.5	283	75-125	205.3	28.7	25	SREO
Boron	90.29	2.3	45.24	43.78	103	75-125	74.89	18.7	25	
Cadmium	7.232	0.45	9.049	0.1425	78.3	75-125	6.168	15.9	25	
Calcium	66650	45	904.9	64440	245	75-125	57630	14.5	25	SEO
Chromium	14.5	0.45	9.049	4.839	107	75-125	11.99	18.9	25	
Cobalt	9.945	0.45	9.049	2.496	82.3	75-125	8.613	14.4	25	
Copper	11.46	0.45	9.049	3.624	86.6	75-125	9.6	17.6	25	
Iron	5992	45	904.9	3874	234	75-125	5014	17.8	25	SO
Lead	12.16	0.45	9.049	4.582	83.8	75-125	10.49	14.8	25	
Manganese	147.3	0.45	9.049	112	390	75-125	111.9	27.3	25	SRO
Molybdenum	6.265	0.45	9.049	0.01985	69	75-125	5.08	20.9	25	S
Nickel	12.57	0.45	9.049	4.305	91.3	75-125	10.48	18.2	25	
Potassium	3262	45	904.9	2072	132	75-125	2655	20.5	25	S
Selenium	7.642	0.45	9.049	0.3095	81	75-125	6.529	15.7	25	
Silver	7.141	0.45	9.049	-0.01784	79.1	75-125	6.245	13.4	25	
Sodium	3817	45	904.9	2827	109	75-125	3053	22.2	25	
Uranium	7.645	0.45	9.049	0.1944	82.3	75-125	6.374	18.1	25	
Zinc	20.65	0.45	9.049	10.13	116	75-125	17.28	17.8	25	

Client: Navajo Refining Company

Work Order: 1302026

Project: RO Discharge Sampling

	565	Instrument ID ICP7500		Wictifot	d: SW602	.0						
DUP	Sample ID: 13	02050-13CDUP				L	Jnits: mg/	Kg	Analysi	s Date: 2/	6/2013 06	:23 AN
Client ID:		Run I	D: ICP750	0_130205A		Se	qNo: 310 :	3163	Prep Date: 2/4/2	2013	DF: 1	
A b - d		Daault	DOI	CDK V-I	SPK Ref Value		0/ DEC	Control Limit	RPD Ref Value	0/ DDD	RPD Limit	Qua
Analyte		Result	PQL	SPK Val			%REC			%RPD		
Arsenic		1.903	0.46	0		0	0	0-0	2.719	35.3	25	R
Boron		42.2	2.3	0		0	0	0-0	43.78	3.69	25	
Cadmium		0.1187	0.46	0		0	0	0-0	0.1425	0	25	J
Chromium		4.426	0.46	0		0	0	0-0	4.839	8.92	25	
Cobalt		1.8	0.46	0		0	0	0-0	2.496	32.4	25	R
Copper		3.169	0.46	0		0	0	0-0	3.624	13.4	25	
Iron		3705	46	0		0	0	0-0	3874	4.47	25	
Lead		3.826	0.46	0		0	0	0-0	4.582	18	25	
Manganese		98.83	0.46	0		0	0	0-0	112	12.5	25	
Molybdenum		U	0.46	0		0	0	0-0	0.01985	0	25	
Nickel		3.629	0.46	0		0	0	0-0	4.305	17	25	
Potassium		1900	46	0		0	0	0-0	2072	8.67	25	
Selenium		0.2105	0.46	0		0	0	0-0	0.3095	0	25	J
Silver		U	0.46	0		0	0	0-0	-0.01784	0	25	
Uranium		U	0.46	0		0	0		0.1944	0	25	
Zinc		9.735	0.46	0		0	0	0-0	10.13	3.94	25	
DUP	Sample ID: 13	02050-13CDUP				L	Jnits: mg/	Kg	Analysi	s Date: 2/	6/2013 10	:52 PN
Client ID:		Run I	D: ICP750	0_130206A		Se	qNo: 310 4	1755	Prep Date: 2/4/2	2013	DF: 10	0
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Calcium		46320	4,600	0		0	0	0-0	55960	18.9	25	
DUP	Sample ID: 13	02050-13CDUP				l	Jnits: mg/	Kq	Analysi	s Date: 2/	7/2013 12	:48 AN
Client ID:	•		D: ICP750	0_130206A			qNo: 310 4	•	Prep Date: 2/4/2	2013	DF: 10	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Barium		213.4	4.6	0		0	0	0-0	222	3.94	25	
Sodium		2404	460	0		0	0	0-0	2630	8.98	25 25	
Socium		2404	400	0		U	0	0-0	2030	0.90	25	
DUP	Sample ID: 13	02050-13CDUP				L	Jnits: mg/	Kg	Analysi	s Date: 2/	7/2013 03	:55 PN
Client ID:		Run I	D: ICP750	0_130207A		Se	qNo: 310	5524	Prep Date: 2/4/2	2013	DF: 10	0
Analyto		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Aluminum						_						Que
Aluminum		6715	92	0		0	0	0-0	6978	3.83	25	

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

Note:

Client: Navajo Refining Company

Work Order: 1302026

Project: RO Discharge Sampling

Batch ID: 67	7585	Instrument ID HG02		Method	: SW747	71A						
MBLK	Sample ID: G	BLKS1-020513-67585				Un	nits: µg/l	≺g	Analy	sis Date: 2	2/5/2013 04	:01 PM
Client ID:		Run ID	: HG02_	130205A		Seq	No: 310	2354	Prep Date: 2/5	5/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury		U	3.3									
LCS	Sample ID: G	LCSS1-020513-67585				Un	nits: µg/l	K g	Analy	sis Date: 2	2/5/2013 04	:03 PM
Client ID:		Run ID	: HG02_	130205A		Seq	No: 310	2355	Prep Date: 2/5	5/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury		332.7	3.3	333.3		0	99.8	85-115	(0		
MS	Sample ID: 13	301997-01DMS				Un	nits: µg/l	K g	Analy	sis Date: 2	2/5/2013 04	:09 PN
Client ID:		Run ID	: HG02_	130205A		Seq	No: 310 :	2358	Prep Date: 2/5	5/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Mercury		376.9	3.5	354.9	14.7	76	102	85-115	(0		
MSD	Sample ID: 13	301997-01DMSD				Un	nits: µg/l	K q	Analy	sis Date: 2	2/5/2013 04	:11 PN
Client ID:		Run ID	: HG02_	130205A		Seq	No: 310 :	2359	Prep Date: 2/5	5/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury		375.1	3.5	354.5	14.7	76	102	85-115	376.9	9 0.484	1 20	
DUP	Sample ID: 13	301997-01DDUP				Un	nits: µg/l	K g	Analy	sis Date: 2	2/5/2013 04	:07 PM
Client ID:		Run ID	: HG02 _	130205A		Seq	No: 310	2357	Prep Date: 2/5	5/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Mercury		15.21	3.6	0		0	0		14.76	3.04	1 20	
The following	ng samples we	re analyzed in this batch:	1:	302026-01D 302026-09D 302026-18D	13	30202	6-03D 6-12D 6-21D		02026-06D 02026-15D			

Client: Navajo Refining Company

Work Order: 1302026

Surr: Nitrobenzene-d5

Surr: Phenol-d6

Project: RO Discharge Sampling

134.1

130.7

6.6

6.6

166.7

166.7

0

0

80.4

78.4

37-125

40-125

0 0

Batch ID: 67656	Instrument ID SV-6		Metho	d: SW82 7	70						
MBLK Sample ID: S	BLKS2-130207-67656				Units	: μg/l	Kg	Anal	ysis Date: 2	/7/2013 04	:24 PM
Client ID:	Run II	D: SV-6_1	30207A		SeqNo	: 310	6635	Prep Date: 2	7/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	U	6.6									
2-Methylnaphthalene	U	6.6									
Benzo(a)pyrene	U	6.6									
Naphthalene	U	6.6									
Surr: 2,4,6-Tribromophen	ol 104.3	6.6	166.7		0 6	52.6	36-126		0		
Surr: 2-Fluorobiphenyl	132.1	6.6	166.7		0 7	79.2	43-125		0		
Surr: 2-Fluorophenol	126.1	6.6	166.7		0 7	75.7	37-125		0		
Surr: 4-Terphenyl-d14	166.2	6.6	166.7		0 9	99.7	32-125		0		

LCS Sample ID: SLCSS2	2-130207-67656				Units: µg/I	< g	Analysi	s Date: 2	2/7/2013 04	:45 PM
Client ID:	Run ID	: SV-6_1	30207A	Se	eqNo: 310	6636	Prep Date: 2/7/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	131.8	6.6	166.7	0	79.1	50-120	0			
2-Methylnaphthalene	133.3	6.6	166.7	0	80	50-120	0			
Benzo(a)pyrene	148.1	6.6	166.7	0	88.8	50-130	0			
Naphthalene	128.1	6.6	166.7	0	76.9	50-125	0			
Surr: 2,4,6-Tribromophenol	125.4	6.6	166.7	0	75.2	36-126	0			
Surr: 2-Fluorobiphenyl	128.4	6.6	166.7	0	77	43-125	0			
Surr: 2-Fluorophenol	122.2	6.6	166.7	0	73.3	37-125	0			
Surr: 4-Terphenyl-d14	159.7	6.6	166.7	0	95.8	32-125	0			
Surr: Nitrobenzene-d5	126.5	6.6	166.7	0	75.9	37-125	0			
Surr: Phenol-d6	122.6	6.6	166.7	0	73.5	40-125	0			

Client: Navajo Refining Company

Work Order: 1302026

Project: RO Discharge Sampling

Batch ID: 67656 Instrument ID SV-6	Method: SW8270
------------------------------------	----------------

MS Sample ID: 13021	40-04DMS			l	Jnits: µg/l	{ g	Analys	sis Date: 2	2/7/2013 07	:35 PM
Client ID:	Run II	D: SV-6_1	30207A	Se	eqNo: 310	6643	Prep Date: 2/7/	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	129.4	6.6	166.5	6.178	74	50-120	0)		
2-Methylnaphthalene	107.7	6.6	166.5	6.039	61	50-120	0)		
Benzo(a)pyrene	224.3	6.6	166.5	160.5	38.3	50-130	0)		S
Naphthalene	102.2	6.6	166.5	5.73	57.9	50-125	0)		
Surr: 2,4,6-Tribromophenol	91.94	6.6	166.5	0	55.2	36-126	0)		
Surr: 2-Fluorobiphenyl	106.7	6.6	166.5	0	64.1	43-125	0)		
Surr: 2-Fluorophenol	91.1	6.6	166.5	0	54.7	37-125	0)		
Surr: 4-Terphenyl-d14	124.5	6.6	166.5	0	74.8	32-125	0)		
Surr: Nitrobenzene-d5	105.2	6.6	166.5	0	63.2	37-125	0)		
Surr: Phenol-d6	85.27	6.6	166.5	0	51.2	40-125	0)		

MSD Sample ID: 13021	140-04DMSD			1	Units: µg/l	{ g	Analysi	s Date: 2/	7/2013 07	:56 PM
Client ID:	Run ID	: SV-6_1	30207A	Se	eqNo: 310	6644	Prep Date: 2/7/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	183.4	6.6	166.4	6.178	106	50-120	129.4	34.5	30	R
2-Methylnaphthalene	143.5	6.6	166.4	6.039	82.6	50-120	107.7	28.5	30	
Benzo(a)pyrene	307.6	6.6	166.4	160.5	88.4	50-130	224.3	31.3	30	R
Naphthalene	132.9	6.6	166.4	5.73	76.4	50-125	102.2	26.1	30	
Surr: 2,4,6-Tribromophenol	101.8	6.6	166.4	0	61.2	36-126	91.94	10.2	30	
Surr: 2-Fluorobiphenyl	123.6	6.6	166.4	0	74.2	43-125	106.7	14.6	30	
Surr: 2-Fluorophenol	108.3	6.6	166.4	0	65.1	37-125	91.1	17.3	30	
Surr: 4-Terphenyl-d14	150.5	6.6	166.4	0	90.4	32-125	124.5	18.9	30	
Surr: Nitrobenzene-d5	124.3	6.6	166.4	0	74.7	37-125	105.2	16.7	30	
Surr: Phenol-d6	101.4	6.6	166.4	0	60.9	40-125	85.27	17.3	30	

The following samples were analyzed in this batch:

1302026-01D 1302026-21D

Client: Navajo Refining Company

Work Order: 1302026

Project: RO Discharge Sampling

MBLK Sample ID: VBLKS1-02	20113-R141995				Units: µg/l	Кg	Analy	/sis Date: 2	/1/2013 0	9:52 AM
Client ID:	Run II	D: VOA5 _	130201A		SeqNo: 309	8471	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	U	5.0								
1,1,2,2-Tetrachloroethane	U	5.0								
1,1,2-Trichloroethane	U	5.0								
1,1-Dichloroethane	U	5.0								
1,1-Dichloroethene	U	5.0								
1,2-Dibromoethane	U	5.0								
1,2-Dichloroethane	U	5.0								
Benzene	U	5.0								
Carbon tetrachloride	U	5.0								
Chloroform	U	5.0								
Ethylbenzene	U	5.0								
Methylene chloride	U	10								
Tetrachloroethene	U	5.0								
Toluene	U	5.0								
Trichloroethene	U	5.0								
Vinyl chloride	U	2.0								
Xylenes, Total	U	15								
Surr: 1,2-Dichloroethane-d4	42.8	0	50		0 85.6	70-128		0		
Surr: 4-Bromofluorobenzene	46.86	0	50		0 93.7	73-126		0		
Surr: Dibromofluoromethane	48.11	0	50		0 96.2	71-128		0		
Surr: Toluene-d8	44.78	0	50		0 89.6	73-127		0		

Client: Navajo Refining Company

Work Order: 1302026

Project: RO Discharge Sampling

LCS Sample ID: VLCSS1-02	20113-R141995				Units: µg/l	K g	Analys	sis Date: 2	/1/2013 08	3:43 AM
Client ID:	Run II	D: VOA5 _	130201A	S	eqNo: 309	8470	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	53.98	5.0	50	0	108	79-124	()		
1,1,2,2-Tetrachloroethane	53.32	5.0	50	0	107	75-123	()		
1,1,2-Trichloroethane	55.87	5.0	50	0	112	79-120	()		
1,1-Dichloroethane	52.6	5.0	50	0	105	75-124	()		
1,1-Dichloroethene	55.13	5.0	50	0	110	80-122	()		
1,2-Dibromoethane	57.09	5.0	50	0	114	79-120	()		
1,2-Dichloroethane	52.14	5.0	50	0	104	73-121	()		
Benzene	50.57	5.0	50	0	101	79-120	()		
Carbon tetrachloride	45.29	5.0	50	0	90.6	74-126	()		
Chloroform	55.04	5.0	50	0	110	78-120	()		
Ethylbenzene	54.99	5.0	50	0	110	80-122	()		
Methylene chloride	51.62	10	50	0	103	70-123	()		
Tetrachloroethene	47.09	5.0	50	0	94.2	80-121	()		
Toluene	49.54	5.0	50	0	99.1	79-120	()		
Trichloroethene	52.16	5.0	50	0	104	80-121	()		
Vinyl chloride	61.5	2.0	50	0	123	76-126	()		
Xylenes, Total	150.9	15	150	0	101	80-120	()		
Surr: 1,2-Dichloroethane-d4	51.49	0	50	0	103	70-128	()		
Surr: 4-Bromofluorobenzene	47.86	0	50	0	95.7	73-126	()		
Surr: Dibromofluoromethane	51.61	0	50	0	103	71-128	()		
Surr: Toluene-d8	43.85	0	50	0	87.7	73-127	()		

Client: Navajo Refining Company

Work Order: 1302026

Project: RO Discharge Sampling

MS Sample ID: 1301997-0	IAMS				Units: µg/l	≺g	Analys	sis Date: 2	/1/2013 1	1:46 AM
Client ID:	Run II	D: VOA5 _	130201A	S	eqNo: 309	8546	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	51.53	5.0	50	0	103	79-124	()		
1,1,2,2-Tetrachloroethane	45.86	5.0	50	0	91.7	75-123	()		
1,1,2-Trichloroethane	56	5.0	50	0	112	79-120	()		
1,1-Dichloroethane	49.56	5.0	50	0	99.1	75-124	()		
1,1-Dichloroethene	54.01	5.0	50	0	108	80-122	()		
1,2-Dibromoethane	49.35	5.0	50	0	98.7	79-120	()		
1,2-Dichloroethane	51.25	5.0	50	0	103	73-121	()		
Benzene	52.11	5.0	50	0	104	79-120	()		
Carbon tetrachloride	46.06	5.0	50	0	92.1	74-126	()		
Chloroform	48.72	5.0	50	0	97.4	78-120	()		
Ethylbenzene	50.85	5.0	50	0	102	80-122	()		
Methylene chloride	48.37	10	50	0	96.7	70-123	()		
Tetrachloroethene	43.7	5.0	50	0	87.4	80-121	()		
Toluene	53.36	5.0	50	0	107	79-120	()		
Trichloroethene	51.31	5.0	50	0	103	80-121	()		
Vinyl chloride	55.22	2.0	50	0	110	76-126	()		
Xylenes, Total	146.8	15	150	0	97.9	80-120	()		
Surr: 1,2-Dichloroethane-d4	49.29	0	50	0	98.6	70-128	()		
Surr: 4-Bromofluorobenzene	49	0	50	0	98	73-126	()		
Surr: Dibromofluoromethane	49.78	0	50	0	99.6	71-128	()		
Surr: Toluene-d8	51.55	0	50	0	103	73-127	()		

Client: Navajo Refining Company

Work Order: 1302026

Project: RO Discharge Sampling

Batch ID: R141995 Instrument ID VOA5 Method: SW8260

MSD Sample ID: 1301997-0	1AMSD				Units: µg/l	Kg	Analysi	s Date: 2/	1/2013 12	:09 PM
Client ID:	Run I	D: VOA5 _	130201A	S	eqNo: 309	8547	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	54.79	5.0	50	0	110	79-124	51.53	6.13	30	
1,1,2,2-Tetrachloroethane	44.09	5.0	50	0	88.2	75-123	45.86	3.93	30	
1,1,2-Trichloroethane	54.9	5.0	50	0	110	79-120	56	1.98	30	
1,1-Dichloroethane	51.87	5.0	50	0	104	75-124	49.56	4.56	30	
1,1-Dichloroethene	52.81	5.0	50	0	106	80-122	54.01	2.24	30	
1,2-Dibromoethane	48.8	5.0	50	0	97.6	79-120	49.35	1.12	30	
1,2-Dichloroethane	46.29	5.0	50	0	92.6	73-121	51.25	10.2	30	
Benzene	51.81	5.0	50	0	104	79-120	52.11	0.568	30	
Carbon tetrachloride	47.75	5.0	50	0	95.5	74-126	46.06	3.61	30	
Chloroform	53.56	5.0	50	0	107	78-120	48.72	9.45	30	
Ethylbenzene	55.58	5.0	50	0	111	80-122	50.85	8.9	30	
Methylene chloride	53.37	10	50	0	107	70-123	48.37	9.82	30	
Tetrachloroethene	45.21	5.0	50	0	90.4	80-121	43.7	3.39	30	
Toluene	61.14	5.0	50	0	122	79-120	53.36	13.6	30	S
Trichloroethene	51.76	5.0	50	0	104	80-121	51.31	0.863	30	
Vinyl chloride	58.35	2.0	50	0	117	76-126	55.22	5.51	30	
Xylenes, Total	157.7	15	150	0	105	80-120	146.8	7.13	30	
Surr: 1,2-Dichloroethane-d4	48.55	0	50	0	97.1	70-128	49.29	1.51	30	
Surr: 4-Bromofluorobenzene	46.51	0	50	0	93	73-126	49	5.21	30	
Surr: Dibromofluoromethane	48.96	0	50	0	97.9	71-128	49.78	1.67	30	
Surr: Toluene-d8	55.55	0	50	0	111	73-127	51.55	7.47	30	

The following samples were analyzed in this batch:

1302026-01A 1302026-17A 1302026-21A

Client: Navajo Refining Company

Work Order: 1302026

Project: RO Discharge Sampling

MBLK Sample ID: VBLKW-13	0204-R142113				Units: µg/l	L	Analy	sis Date: 2	/4/2013 1	1:16 AM
Client ID:	Run II	D: VOA4 _	130204A		SeqNo: 310	0918	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	U	1.0								
1,1,2,2-Tetrachloroethane	U	1.0								
1,1,2-Trichloroethane	U	1.0								
1,1-Dichloroethane	U	1.0								
1,1-Dichloroethene	U	1.0								
1,2-Dibromoethane	U	1.0								
1,2-Dichloroethane	U	1.0								
Benzene	U	1.0								
Carbon tetrachloride	U	1.0								
Chloroform	U	1.0								
Ethylbenzene	U	1.0								
Methylene chloride	U	2.0								
Tetrachloroethene	U	1.0								
Toluene	U	1.0								
Trichloroethene	U	1.0								
Vinyl chloride	U	1.0								
Xylenes, Total	U	1.0								
Surr: 1,2-Dichloroethane-d4	43.85	1.0	50		0 87.7	71-125		0		
Surr: 4-Bromofluorobenzene	49.08	1.0	50		0 98.2	70-125		0		
Surr: Dibromofluoromethane	48.08	1.0	50		0 96.2	74-125		0		
Surr: Toluene-d8	48.41	1.0	50		0 96.8	78-123		0		

Client: Navajo Refining Company

Work Order: 1302026

Project: RO Discharge Sampling

LCS Sample ID: VLCSW-13	0204-R142113				Units: µg/l	_	Analys	sis Date: 2	/4/2013 10	D:03 AM
Client ID:	Run II	D: VOA4 _	130204A	S	eqNo: 310	0916	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	54.47	1.0	50	0	109	80-120	()		
1,1,2,2-Tetrachloroethane	46.02	1.0	50	0	92	74-123	()		
1,1,2-Trichloroethane	48.93	1.0	50	0	97.9	80-120	()		
1,1-Dichloroethane	46.62	1.0	50	0	93.2	80-120	()		
1,1-Dichloroethene	53.04	1.0	50	0	106	80-120	()		
1,2-Dibromoethane	53.39	1.0	50	0	107	80-120	()		
1,2-Dichloroethane	49.07	1.0	50	0	98.1	79-120	()		
Benzene	48.6	1.0	50	0	97.2	80-120	()		
Carbon tetrachloride	58.54	1.0	50	0	117	79-120	()		
Chloroform	46.57	1.0	50	0	93.1	80-120	()		
Ethylbenzene	48.8	1.0	50	0	97.6	80-120	()		
Methylene chloride	47.71	2.0	50	0	95.4	75-125	()		
Tetrachloroethene	53.4	1.0	50	0	107	80-120	()		
Toluene	48.37	1.0	50	0	96.7	80-121	()		
Trichloroethene	53.7	1.0	50	0	107	80-120	()		
Vinyl chloride	48.96	1.0	50	0	97.9	75-125	()		
Xylenes, Total	142.5	1.0	150	0	95	80-124	()		
Surr: 1,2-Dichloroethane-d4	44.17	1.0	50	0	88.3	71-125	()		
Surr: 4-Bromofluorobenzene	52.31	1.0	50	0	105	70-125	()		
Surr: Dibromofluoromethane	49.72	1.0	50	0	99.4	74-125	()		
Surr: Toluene-d8	48.59	1.0	50	0	97.2	78-123	()		

Client: Navajo Refining Company

Work Order: 1302026

Project: RO Discharge Sampling

LCSD Sample ID: VLCSDW-1	30204-R142113				Units: µg/L	-	Analysi	is Date: 2/	4/2013 10	:27 AN
Client ID:	Run II	D: VOA4 _	130204A	S	eqNo: 310	0917	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	51.78	1.0	50	0	104	80-120	54.47	5.06	20	
1,1,2,2-Tetrachloroethane	46.55	1.0	50	0	93.1	74-123	46.02	1.14	20	
1,1,2-Trichloroethane	48.97	1.0	50	0	97.9	80-120	48.93	0.0875	20	
1,1-Dichloroethane	44.74	1.0	50	0	89.5	80-120	46.62	4.11	20	
1,1-Dichloroethene	51.9	1.0	50	0	104	80-120	53.04	2.16	20	
1,2-Dibromoethane	53.91	1.0	50	0	108	80-120	53.39	0.979	20	
1,2-Dichloroethane	48.06	1.0	50	0	96.1	79-120	49.07	2.09	20	
Benzene	47	1.0	50	0	94	80-120	48.6	3.35	20	
Carbon tetrachloride	56.1	1.0	50	0	112	79-120	58.54	4.26	20	
Chloroform	45.18	1.0	50	0	90.4	80-120	46.57	3.02	20	
Ethylbenzene	46.79	1.0	50	0	93.6	80-120	48.8	4.2	20	
Methylene chloride	46.38	2.0	50	0	92.8	75-125	47.71	2.83	20	
Tetrachloroethene	50.41	1.0	50	0	101	80-120	53.4	5.75	20	
Toluene	46.08	1.0	50	0	92.2	80-121	48.37	4.84	20	
Trichloroethene	52.04	1.0	50	0	104	80-120	53.7	3.14	20	
Vinyl chloride	46.66	1.0	50	0	93.3	75-125	48.96	4.81	20	
Xylenes, Total	138	1.0	150	0	92	80-124	142.5	3.19	20	
Surr: 1,2-Dichloroethane-d4	43.85	1.0	50	0	87.7	71-125	44.17	0.739	20	
Surr: 4-Bromofluorobenzene	51.57	1.0	50	0	103	70-125	52.31	1.41	20	
Surr: Dibromofluoromethane	48.7	1.0	50	0	97.4	74-125	49.72	2.09	20	
Surr: Toluene-d8	48.27	1.0	50	0	96.5	78-123	48.59	0.661	20	

Client: Navajo Refining Company

Work Order: 1302026

Project: RO Discharge Sampling

MS Sample ID: 1302069-0	1AMS				Units: µg/L	_	Analys	sis Date: 2	/4/2013 0	1:41 PM
Client ID:	Run II	D: VOA4 _	130204A	S	eqNo: 310	0924	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	56.87	1.0	50	0	114	80-120	C)		
1,1,2,2-Tetrachloroethane	45.23	1.0	50	0	90.5	74-123	C)		
1,1,2-Trichloroethane	50.26	1.0	50	0	101	80-120	C)		
1,1-Dichloroethane	48.56	1.0	50	0	97.1	80-120	C)		
1,1-Dichloroethene	57.49	1.0	50	0	115	80-120	C)		
1,2-Dibromoethane	53.79	1.0	50	0	108	80-120	C)		
1,2-Dichloroethane	50.8	1.0	50	0	102	79-120	C)		
Benzene	51.17	1.0	50	0	102	80-120	C)		
Carbon tetrachloride	61.34	1.0	50	0	123	79-120	C)		S
Chloroform	49.2	1.0	50	0	98.4	80-120	C)		
Ethylbenzene	50.6	1.0	50	0	101	80-120	C)		
Methylene chloride	49.13	2.0	50	0	98.3	75-125	C)		
Tetrachloroethene	55.78	1.0	50	0	112	80-120	C)		
Toluene	49.91	1.0	50	0	99.8	80-121	C)		
Trichloroethene	57.43	1.0	50	0	115	80-120	C)		
Vinyl chloride	53.66	1.0	50	0	107	75-125	C)		
Xylenes, Total	148.5	1.0	150	0	99	80-124	C)		
Surr: 1,2-Dichloroethane-d4	44.59	1.0	50	0	89.2	71-125	C)		
Surr: 4-Bromofluorobenzene	50.99	1.0	50	0	102	70-125	C)		
Surr: Dibromofluoromethane	49.65	1.0	50	0	99.3	74-125	C)		
Surr: Toluene-d8	48.21	1.0	50	0	96.4	78-123	C)		

Client: Navajo Refining Company

Work Order: 1302026

Project: RO Discharge Sampling

Batch ID: R142113 Instrument ID VOA4 Method: SW8260

MSD Sample ID: 1302069-0	IAMSD				Units: μg/l	-	Analysi	s Date: 2/	4/2013 02	2:06 PN
Client ID:	Run I	D: VOA4 _	130204A	S	eqNo: 310	0925	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	59.48	1.0	50	0	119	80-120	56.87	4.49	20	
1,1,2,2-Tetrachloroethane	47.09	1.0	50	0	94.2	74-123	45.23	4.04	20	
1,1,2-Trichloroethane	51.43	1.0	50	0	103	80-120	50.26	2.29	20	
1,1-Dichloroethane	50.19	1.0	50	0	100	80-120	48.56	3.31	20	
1,1-Dichloroethene	60.32	1.0	50	0	121	80-120	57.49	4.82	20	S
1,2-Dibromoethane	56.01	1.0	50	0	112	80-120	53.79	4.04	20	
1,2-Dichloroethane	52.53	1.0	50	0	105	79-120	50.8	3.34	20	
Benzene	52.17	1.0	50	0	104	80-120	51.17	1.94	20	
Carbon tetrachloride	63.38	1.0	50	0	127	79-120	61.34	3.27	20	S
Chloroform	50.81	1.0	50	0	102	80-120	49.2	3.21	20	
Ethylbenzene	51.95	1.0	50	0	104	80-120	50.6	2.63	20	
Methylene chloride	51.27	2.0	50	0	103	75-125	49.13	4.28	20	
Tetrachloroethene	57.11	1.0	50	0	114	80-120	55.78	2.36	20	
Toluene	50.87	1.0	50	0	102	80-121	49.91	1.91	20	
Trichloroethene	58.72	1.0	50	0	117	80-120	57.43	2.21	20	
Vinyl chloride	54.84	1.0	50	0	110	75-125	53.66	2.17	20	
Xylenes, Total	151	1.0	150	0	101	80-124	148.5	1.7	20	
Surr: 1,2-Dichloroethane-d4	44.99	1.0	50	0	90	71-125	44.59	0.903	20	
Surr: 4-Bromofluorobenzene	50.73	1.0	50	0	101	70-125	50.99	0.509	20	
Surr: Dibromofluoromethane	50.29	1.0	50	0	101	74-125	49.65	1.28	20	
Surr: Toluene-d8	48.15	1.0	50	0	96.3	78-123	48.21	0.13	20	

The following samples were analyzed in this batch:

1302026-22A

Client: Navajo Refining Company

Work Order: 1302026

Project: RO Discharge Sampling

Batch ID: 6	Instrument ID UV-245	0	Method	l: SW901	4	(Dissolve	e)			
MBLK	Sample ID: WBLKS1-020513-6758	3			Units: mg/	'Kg	Analy	sis Date: 2/	5/2013 04	:30 PM
Client ID:	į	Run ID: UV-2	450_130205C		SeqNo: 310	3414	Prep Date: 2/5	/2013	DF: 1	
Analyte	Resul	lt PQI	L SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	l	J 2.0	0							
LCS	Sample ID: WLCSS1-020513-67583	3			Units: mg/	'Kg	Analy	sis Date: 2/	/5/2013 04	:30 PN
Client ID:	ŧ	Run ID: UV-2	450_130205C		SeqNo: 310	3415	Prep Date: 2/5	/2013	DF: 1	
Analyte	Resul	lt PQI	L SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Cyanide	9.08	5 2.0	0 10		0 90.5	80-120	()		
LCSD	Sample ID: WLCSDS1-020513-675	83			Units: mg/	'Kg	Analy	sis Date: 2/	/5/2013 04	:30 PN
Client ID:	ī	Run ID: UV-2	450_130205C		SeqNo: 310	3437	Prep Date: 2/5	/2013	DF: 1	
Analyte	Resu	lt PQI	L SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Cyanide	8.9	9 2.0	0 10		0 89	80-120	9.05	5 1.67	30	
MS	Sample ID: 1301997-09DMS				Units: mg/	'Kg	Analy	sis Date: 2/	5/2013 04	:30 PN
Client ID:	f	Run ID: UV-2	450_130205C		SeqNo: 310	3436	Prep Date: 2/5	/2013	DF: 1	
Analyte	Resul	lt PQI	L SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Cyanide	9.49	5 1.9	9 9.308	0.0961	11 101	75-125	()		
The following	ing samples were analyzed in this ba		1302026-01D 1302026-09D 1302026-18D	13	302026-03D 302026-12D 302026-21D		02026-06D 02026-15D			

Client: Navajo Refining Company

Work Order: 1302026

Project: RO Discharge Sampling

Batch ID: 67633	Instrument ID ICS2100		Method	: E300			(Dissolve)			
MBLK Sample ID:	WBLKS1-67633				U	nits: mg/	Kg	Analysis	Date: 2	/5/2013 07	:11 PM
Client ID:	Run II	D: ICS210	0_130205C		SeqNo: 310385 8		3858	Prep Date: 2/5/20	13	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	5.0									
Fluoride	0.64	1.0									J
Nitrogen, Nitrate (As N)	U	1.0									
Nitrogen, Nitrite (As N)	U	1.0									
Sulfate	U	5.0									
Surr: Selenate (surr)	45.24	1.0	50		0	90.5	85-115	0			
LCS Sample ID:	WLCSS1-67633				U	nits: mg/	Kg	Analysis	Date: 2	/5/2013 07	:25 PM
Client ID:	Run II	D: ICS210	0_130205C		Sec	qNo: 310 :	3859	Prep Date: 2/5/20	13	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	219.8	5.0	200		0	110	90-110	0			
Fluoride	37.72	1.0	40		0	94.3	90-110	0			
Nitrogen, Nitrate (As N)	43.14	1.0	40		0	108	90-110	0			
Nitrogen, Nitrite (As N)	43.82	1.0	40		0	110	90-110	0			
Sulfate	208.7	5.0	200		0	104	90-110	0			
Surr: Selenate (surr)	47.79	1.0	50		0	95.6	85-115	0			
MS Sample ID:	1302026-21DMS				U	nits: mg/	Kg	Analysis	Date: 2	/6/2013 01	:29 AM
Client ID: MW-114 (35)	Run II	D: ICS210	0_130205C		Sec	qNo: 310	3884	Prep Date: 2/5/20	13	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	126.4	5.0	98.97	16	5.2	111	75-125	0			
Fluoride	20.19	0.99	19.79	2.63		88.7	75-125	0			
Nitrogen, Nitrate (As N)	20.76	0.99	19.79		0	105	75-125	0			
Nitrogen, Nitrite (As N)	21.36	0.99	19.79		0	108	75-125	0			
Sulfate	319.3	5.0	98.97	213	3.5	107	75-125	0			

Client: Navajo Refining Company

Work Order: 1302026

Project: RO Discharge Sampling

ajo Refining Company
QC BATCH REPORT

						•	•			
MSD Sample ID	: 1302026-21DMSD				Units: mg/	Kg	Analysi	is Date: 2/	6/2013 01	:43 AM
Client ID: MW-114 (35)	Run I	D: ICS210	0_130205C	S	eqNo: 310 :	3885	Prep Date: 2/5/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	124.6	4.9	98.65	16.2	110	75-125	126.4	1.49	20	
Fluoride	19.9	0.99	19.73	2.638	87.5	75-125	20.19	1.45	20	
Nitrogen, Nitrate (As N)	20.57	0.99	19.73	0	104	75-125	20.76	0.942	20	
Nitrogen, Nitrite (As N)	20.98	0.99	19.73	0	106	75-125	21.36	1.77	20	
Sulfate	315.2	4.9	98.65	213.5	103	75-125	319.3	1.29	20	
Surr: Selenate (surr)	42	0.99	49.33	0	85.1	80-120	42.66	1.58	20	
The following samples	were analyzed in this batch:	13	802026-01D 802026-09D 802026-18D	1302	026-03D 026-12D 026-21D		02026-06D 02026-15D			

Navajo Refining Company **Client:**

Work Order:

RO Discharge Sampling **Project:**

QC BATCH REPORT 1302026

Batch ID: I	R142216	Instrument ID E	Balance1		Method	: SW355	0	(Dissolve))				
DUP Sample ID: 1302026-21DDUP							Units: wt%	, 0	Analysi	s Date: 2/	5/2013 01	:50 PM	
Client ID: MW-114 (35)			Run ID	: BALAN	NCE1_13020	5C	SeqNo: 310	3371	Prep Date:		DF: 1		
Analyte			Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Percent Mo	oisture		17.43	0.010	0		0 0	0-0	17.52	0.523	20		
The follow	ving samples v	vere analyzed in t	this batch:		302026-01D 302026-04A	_	02026-02A 02026-05A		2026-03D 2026-06D				
					302026-07A 302026-10A	_	02026-08A 02026-11A)2026-09D)2026-12D				
				1:	302026-13A	13	02026-14A	130	2026-15D				
				-	302026-16A 302026-20A		02026-18D 02026-21D	130	2026-19A				

ALS Environmental

Date: 13-Feb-13

Client: Navajo Refining Company
Project: RO Discharge Sampling

QUALIFIERS,
ACRONIZACIO

Project: RO Discharge Sampling
WorkOrder: 1302026

RO Discharge Sampling
ACRONYMS, UNITS

Workorder.	1302020
Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
В	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
Н	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
Acronym	Description
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
Units Reported	Description
μg/Kg	Micrograms per Kilogram
μg/Kg-d	ry Micrograms per Kilogram - Dry weight corrected
mg/Kg-d	ry Milligrams per Kilogram - Dry weight corrected
mg/L	Milligrams per Liter
wt%	

Sample Receipt Checklist

Client Name:	NAVAJO REFINING			Date/Time F	Received:	31-Jan-13	<u> 09:10</u>	
Work Order:	1302026			Received by	y:	<u>RDH</u>		
Checklist comp	pleted by <u>Robert D. Harris</u> eSignature	01-Feb-1	<u>3</u> R	Reviewed by:	Patricia eSignature	L. Lyni	ch	13-Feb-13 Date
Matrices: Carrier name:	soils FedEx							
Shipping contain	iner/cooler in good condition?	Yes	s 🗸	No 🗆	Not Prese	ent 🗌		
Custody seals i	intact on shipping container/coole	er? Yes	s 🗸	No 🗌	Not Prese	ent \square		
Custody seals i	intact on sample bottles?	Yes	s \square	No 🗌	Not Prese	ent 🗸		
Chain of custoo	dy present?	Yes	s V	No 🗌				
Chain of custoo	dy signed when relinquished and	received? Yes	s 🗸	No 🗌				
Chain of custoo	dy agrees with sample labels?	Yes	s 🗌	No 🗹				
Samples in pro	per container/bottle?	Yes	s 🗸	No 🗌				
Sample contain	ners intact?	Yes	s 🗸	No 🗌				
Sufficient samp	ole volume for indicated test?	Yes	s V	No 🗌				
	eived within holding time?	Yes	s V	No 🗌				
Container/Tem	p Blank temperature in compliand	ce? Yes	s V	No 🗆				
Temperature(s))/Thermometer(s):	1.8c	<u>c/u</u>		005			
Cooler(s)/Kit(s)	:	3725						
Date/Time sam	ple(s) sent to storage:	2/1/1	3 14:50					
Water - VOA vi	als have zero headspace?	Yes	S 🗸	No 🗆	No VOA vials	submitted		
Water - pH acc	eptable upon receipt?	Yes	s 🗌	No 🗌	N/A			
pH adjusted?		Yes	s 🗆	No 🗌	N/A 🔽		ı	
pH adjusted by	:	_						
Login Notes:	COC and sample count rece	eived didn't match up. PL s	poke wit	th client and go	ot everything co	orrected. L	ogged in by	=====
Client Contacte	ed:	Date Contacted:		Person	Contacted:			
Contacted By:		Regarding:						
ŕ		G G						
Comments:								
CorrectiveActio	n:						SRC	Page 1 of 1

57 of 61

58 of 61

Chain	of	Custody	/ Form
₩ # # # # # # # # # # # # # # # # # # #	\sim	- WOLVER	

Cincinnati, OH +1 513 733 5336

1302026

Page __

Everett, WA +1 425 356 2600

NAVAJO REFINING: Navajo Refining Company

Fort Collins, CO +1 970 490 1511

Project: RO Discharge Sampling



COCID: 41198 A Fort Collins, CO Fort Collins, Coll	
Customer Information Project Information Parameter/Method Request for Analysis	
Purchase Order Project Name RO Discharge Sampling A VOC (8260) NW GWList	
Work Order Project Number 128823 B GRO (8015 M)	
Company Name Navajo Refining Bill To Company Navajo Refining C DRO (80154)	
Send Report To Set Robert Combs Invoice Attn. Robert Combs D ORO (8015M)	\exists
Address 501 East Main Address 501 East Main ELLSVOC (BZ)0) NM GW List	
Total Metals (6020/7000) RCRA 8	
City/State/Zip Artesia, NM 88211 City/State/Zip Artesia, NM 88211 GD: scolved Metals (6020/7000) RCRA 8	
Phone 575-748-6733 Phone 575-748-6733 H TDS	
Fax 575-746-5421 1 Moisture	
e-Mail Address J Fingerprint (PIANO/Sparau, Sim Di	
No. Sample Description Date Time Matrix Pres. # Bottles A B C D E F G H I J H	bld
11 MW-114(1) 1128/13 1430 Soil - 5 XXXXXXXXXX	
2 MW-114(3) 1/28/13 1440 Soil 1 1	
3 MW-1H(5) 1/28/13 H45 Y 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
4 Mw-114 (7) 1/28/13 1530 1 X	
5 MW-114(9) 1/28/13 1545 X	
6 MW-114 (10) 1/28/15 1530 32 36 8 8 8 8 8 8 X X	
7 MW-114(11) 1/28/13 1530 1 X	
8 FIW - 114 (13) 1/28/13 1550 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	
9 MW-1H (15) 1/28/13 550 \$2 2 K & R X R X	
10 M () 1 () 1 ()	
Eric Desgersen STD 10 Wk Days 15 Wk Days 12 Wk Days 124 Hour	20 20
Relinquished by: Date: Time: Received by: Notes: Notes: Notes: 1/30/13 1300 Notes: 10 Day TAT. Dissolved Metals Fie	1 54
Relinquished by: Date: Time: Receive by (Lathylatory):	a prile
Level II: Standard QC	<u></u>
Logged by (Laboratory): Date: Time: Checked by (Laboratory): Level III: Std QC + Raw Data	
Level IV: SW846 CLP-Like	
Preservative Key: 1-HCL 2-HN03 3-H2S04 4-NaOH 5-Na2S203 6-NaHS04 7-Other 8-4 degrees C 9-5035 Other:	

41198

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

Copyright 2011 by ALS Group



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 2___of <u>3</u>

Middletown, PA +1 717 944 5541

Houston, TX

+1 281 530 5656

Spring City, PA +1 610 948 4903

South Charleston, WV +1 304 356 3168

Salt Lake City, UT +1 801 266 7700

York, PA +1 717 505 5280

COC ID: 72221

E raniër <i>e</i>	nmental			,	·····			<u> 2331</u>											
	ustomer Information			Ė	Draine			t Manager	* 1	/85.1244s	-		1 19. 57. 7	ta ing the second of the second	Order			200 (E)	
estatative extension of the community	ustomer information	on	Factories and the second	. 21 22.1	Project Information					Parameter/Method Request for Analysis									
Purchase Order			Project N	lame	RO Discharge/Sampling			Α	VOC (8260) NW GW List							and the second s			
Work Order			Project Nui	mber	1288	123			В	GRO (8015M)									
Company Name	Navajo Refining Cor	mpany	Bill To Com	pany	Nava	ijo Refining C	ompany	enterente de grande, en grande de projection de paga, "A britain	C	DRO (8015M)									
Send Report To	Robert Combs		Invoice	Attn	Rob	ert Combs			D	OR	O (801:	5M)							
	501 East Main	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			501	East Main			E	LL:	SVOC ((8270)	NIM GV	V List					The state of the s
Address	\$ \$		Ado	fress					F	Tot	al Meta	ls (602	0/7000) RCRA	8				
City/State/Zip	Artesia, NM 88211		City/State	e/Zip	Arte	sia, NM 8821	1		G	Dis	solved I	Metals	(6020/	7000) R	CRA 8				
Phone	(575) 748-6733	The state of the s	PI	hone	(575	748-6733	**************************************		н	TDS	3		***************************************						manny a spirit after the first the decimal
Fax	(675) 746-5421	**************************************		Fax	(575	746-5421			Į.	Moi	sture	and the second second	· ***						
e-Mail Address	-		e-Mail Ado	iress					J	Fing	gerprint	(PIANO	D/Sp G	Brav, Sir	n Dist)	~~~			AND THE RESERVE ASSESSMENT ASSESS
No.	Sample Description		Date	Tii	ne	Matrix	Pres.	# Bottles	Α	В	С	D	E	F	G	Н		J	Hold
# Mw 1	H (19)		1/28/13	160	> 5	Soil		1									X		2-1-2-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1
	14(20)		1/28/13	16.1		1	{	32	Z	Ri	78	-×1.	移	X	菱		χ		
3 Mwi			1/28/13	161				1			76						X		
7736774 · .		***************************************		161				1	-	+							×		
	14 (23)	PIRPLES PARTIE AND ADDRESS OF THE PARTIES OF THE PA	1/28/13	1				120	10	.0	V-7		رب						Married Section 2015
o sala 🕯 💮 😅	1H (25)		1/28/13		20			52	R	R	82	Z	Z	<u> </u>	R				
17.5	114 (27)		1/28/13	1	75			 									χ		
	114(29)		1/52/13	ال ا	27				-								人		market of program, Part of the World State of the State o
	114 (30)	· · · · · · · · · · · · · · · · · · ·	1/28/13	160	20			每2	2	8	-31	R	K	Χ	82		X		
9 Mu	J 114 (3i)	***************************************	1/28/13	164	10_			1									Χ		
10 M	0 114(33)		1/28/13	164	0			ı		100							X		
Sampler(s) Please Pr	int & Sign	R.	Shipme	nt Metho	d	4508678		round Time:			٦o					esults l	Due Da	te:	
Relinquished by:	f the	- Berger	Time:	Receive	d bv:		v] Std 10`	NK Days [5 W Notes		1	AK Day	701 117 117	24 Hou	ır als Field	Cibara	A.		
Eric Bergerse Relinquished by	×	Date: 1/30/13 Date:	1300 Time:	}	-	adratonii: 1 s	<u> </u>	100										el wildern in	
meninguisned by:)			THIE.	.1	· ~ \	poralory):	3113	0410	Co	oler ID	Goo	ler Temp). QC	W Lev	e: (Chec el il Sid (2C		TR	RP CheckLis
Logged by (Laboratory):		Date:	Time:	Checke	d by (Lat	oratory): ['l'		7				14.57 15.50	Lev	el III Std	QC/Rav		TR	RP Level IV
Preservative Key:	1-HCI 2-HNO ₃	3-H₂SO₄ 4-I	_ NaOH 5-Na₂S₂O	6-1	Jauco	7-Other	0 490	9-5035	e specialisticalis	vija vegytte. Arabana veta		<u>Marianta</u> Mariatakan	<u>(16)</u> enan		ei IV SW er/EDD		* *		

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

(ALS)
Environmental

Chain of Custody Form

☐ Everett, WA +1 425 356 2600

Cincinnati, OH +1 513 733 5336

☐ Houston, TX +1 281 530 5656

Holland, Mf +1 616 399 6070

Salt Lake City, UT + 1 801 266 7700

Spring City, PA +1 610 948 4903

COC ID: 41209

Fort Collins, CO +1 970 490 1511

Middletown, PA +1 717 944 5541

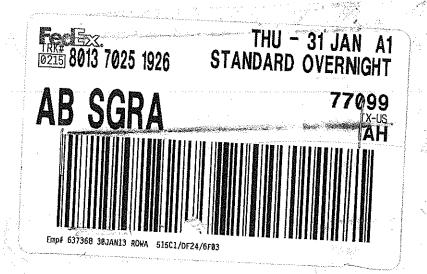
Tork, PA +1 717 505 5280

	ALS Project Manager:									Worl	c Order	#:					
Cust	tomer Information		Project In	formatio	n			Parameter/Method Request for Analysis									
Purchase Order		Project N	lame	***************************************			Α	NOC	<u>' (8</u>	260	16	1W 0	GW	Li5+			
Work Order		Project Nui	Project Number						B (TRO (8015M)								
Company Name	Hausio Refining	Bill To Com	pany Na	vajo Ri	etinia	7	С										
Send Report To		Invoice		34 ¹ Co.	Mpz >	7	D										
Address	501 East Main						E	LL 5				17/	1 G	(4) /		:	
Address	1 301 Bash 1 1814	Add	ress 50	1 Cass	t Mai	7		lp+al						(000)	_	RA	8
City/State/Zip	Artesia, NM 8821	City/State	Zip A	s.4. N	M 85	[[5]	GÌ		نصاب	المراس	Yatal	\ <u> </u>	.070	7000	5 Z	CRA	
Phone		And the second s	none				н -	TDS			VC (1.7 7.15	CCC	<u> </u>	<i>,</i> , • •	<u> </u>	
Fax	575-746-5421		Fax				1 3	Hoisi					***************************************				
e-Mail Address		e-Mail Add	ress		***************************************		J /	1015		*			·				
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	В	С	D	E	F	G	н	1	j	Hold
1 Mw.	ામ (35)	1/28/13	1650	Soil		5	×	X	X	Х	Х	Х	F.	鎏	X		te debe cons
2			1050	33, (1									
3											 						
4	1-70-77-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-7-																
5																	
6	-		-														
7																	
8																	
9	· · · · · · · · · · · · · · · · · · ·																
10 Sampler(s): Please Pr	X14/0-01-01-01-01-01-01-01-01-01-01-01-01-01	la.		<u></u>											:		
MU Please of		いろか Shipm	ent Method:		Jui red Tu i STD 10 Wk	naround [*] Days [Time:] 5 Wk I	Days	l □ 2 W	☐ Other k Days	24	Hour	Re	sults Du	e Date:		
Relinquished by:	Date:	1 {	Received by:				1	tes:									
Relinquished by:	sen 1/30/13 (Date:	1300 Time:	na 450 ka 50 / 16 / 1					<u> 2</u>		AT,	Dis	<u> 201-</u>	red.	Meta	l he	<u>ld F</u>	:Itce
remiquisites by.	Date.	i i mue:	Recêived by (Labo	Salory):	2111	19A1	$\bigcap c$	oler Ten) QC	31,121,111	ige: (Cl vel II: :	e and the other tile	<u> </u>	v)			
Logged by (Laboratory):	Date:	Time	Checked by (Labo	rakory):	44.	/ <u>/ "</u>	ᅩ		-		vei III: .			v Data	-		
											vel IV:						
Preservative Key: 1	-HCL 2-HN03 3-HZSO4 4-NaOH	5-Na2S2O3 6-	NaHSO4 7-0	ther 8-4	degrees	C 9-500	35			Ot	her:					:	

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

Copyright 2011 by ALS Group

1502026



Da

Na

Coi



ALS Environmental

10450 Stancliff Rd., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5887 CUSTODY SEAL

Seal Stroken By

St. 1-30-2017 Time: 1250

See: Sen Mc/Encu

Spany: ARCADIC US



13-Feb-2013

Robert Combs
Navajo Refining Company
PO Box 159
Artesia, NM 88211

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

Re: RO Discharge Sampling Work Order: **1302079**

Dear Robert,

ALS Environmental received 16 samples on 02-Feb-2013 09:30 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 50.

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

Sincerely,

Electronically approved by: Jumoke M. Lawal

Sonie West

Sonia West Project Manager



Certificate No: T104704231-12-10

ALS Environmental

Date: 13-Feb-13

Client: Navajo Refining Company
Project: RO Discharge Sampling

Work Order: 1302079

Work Order Sample Summary

Lab Samp ID	Client Sample ID	<u>Matrix</u>	Tag Number	Collection Date	Date Received	Hold
1302079-01	MW-117 (1)	Soil		1/31/2013 08:55	2/2/2013 09:30	
1302079-02	MW-117 (3)	Soil		1/31/2013 09:00	2/2/2013 09:30	
1302079-03	MW-117 (5)	Soil		1/31/2013 09:15	2/2/2013 09:30	
1302079-04	MW-117 (7)	Soil		1/31/2013 10:15	2/2/2013 09:30	
1302079-05	MW-117 (9)	Soil		1/31/2013 10:00	2/2/2013 09:30	
1302079-06	MW-117 (10)	Soil		1/31/2013 10:30	2/2/2013 09:30	
1302079-07	MW-117 (11)	Soil		1/31/2013 15:15	2/2/2013 09:30	
1302079-08	MW-117 (13)	Soil		1/31/2013 15:20	2/2/2013 09:30	
1302079-09	MW-117 (15)	Soil		1/31/2013 15:20	2/2/2013 09:30	
1302079-10	MW-117 (17)	Soil		1/31/2013 15:20	2/2/2013 09:30	
1302079-11	MW-117 (19)	Soil		1/31/2013 15:25	2/2/2013 09:30	
1302079-12	MW-117 (20)	Soil		1/31/2013 15:25	2/2/2013 09:30	
1302079-13	MW-117 (21)	Soil		1/31/2013 15:30	2/2/2013 09:30	
1302079-14	MW-117 (23)	Soil		1/31/2013 15:30	2/2/2013 09:30	
1302079-15	MW-117 (25)	Soil		1/31/2013 15:40	2/2/2013 09:30	
1302079-16	Trip Blank	Water		1/31/2013	2/2/2013 09:30	

ALS Environmental

Date: 13-Feb-13

Client: Navajo Refining Company
Project: RO Discharge Sampling

Project: RO Discharge Sampling Case Narrative

Work Order: 1302079

Your samples received for Radium 226 and Radium 228 are reported on ALS workorder 1302192.

A Trip Blank sample was received but was not listed on the chain of custody. The laboratory analyzed this sample for VOC 8260.

Batch 67579, TPH DRO/ORO, Sample 1302018-01: MS/MSD is for an unrelated sample.

Batch 67584, Metals, Sample MW-117 (1): MS/MSD recoveries were outside the control limits for several analytes due to high concentration to the background sample. Results are flagged with an O as applicable. The associated LCS recoveries were within the control limits.

Batch 67584, Metals, Sample MW-117 (1): MS/MSD RPD was outside the control limits for Lead.

Batch 67584, Metals, Sample MW-117 (1): Duplicate RPD was outside the control limits for Barium and Boron.

Batch 67581, Low-Level Semivolatile Organics, Sample 1302050-06: MS/MSD is for an unrelated sample.

Batch R142091, Volatile Organics: LCS recovery was outside the control limits for 1,1,2-Trichloroethane. The associated results are Non Detect.

Batch R142091, Volatile Organics, Sample MW-117 (25): MS/MSD recoveries were outside the control limits for several analytes. The associated LCS recoveries were within the control limits.

Batch R142091, Volatile Organics, Sample MW-117 (25): MS/MSD RPD was outside the control limits for several analytes.

Batch 67697, Anions, Sample MW-117 (25): MS/MSD recoveries were outside the control limits for Sulfate. The associated LCS recoveries and MS/MSD RPD were within the control limits.

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-117 (1)

Collection Date: 1/31/2013 08:55 AM

Date: 13-Feb-13

Work Order: 1302079

Lab ID: 1302079-01

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Met	hod: SW8015M		Prep: SW35	41 / 2/5/13	Analyst: KMB
TPH (Oil Range)	U		0.65	4.4	mg/Kg-dry	1	2/12/2013 12:08
TPH (Diesel Range)	U		0.65	2.2	mg/Kg-dry	1	2/12/2013 12:08
Surr: 2-Fluorobiphenyl	61.0			60-135	%REC	1	2/12/2013 12:08
GASOLINE RANGE ORGANICS - SW	8015C	Met	hod: SW8015				Analyst: KKP
Gasoline Range Organics	U		0.026	0.065	mg/Kg-dry	1	2/5/2013 19:01
Surr: 4-Bromofluorobenzene	88.8			70-130	%REC	1	2/5/2013 19:01
MERCURY - SW7471B		Met	hod: SW7471A		Prep: SW74	71A / 2/5/13	Analyst: OFO
Mercury	7.02		0.37	4.55	μg/Kg-dry	1	2/5/2013 17:32
METALS		Met	hod: SW6020		Prep: SW30	50A / 2/5/13	Analyst: SKS
Aluminum	15,200		25	127	mg/Kg-dry	100	2/6/2013 18:31
Arsenic	4.74		0.13	0.634	mg/Kg-dry	1	2/6/2013 17:17
Barium	182		0.10	0.634	mg/Kg-dry	1	2/6/2013 17:17
Boron	8.67		3.5	6.34	mg/Kg-dry	2	2/7/2013 15:33
Cadmium	0.374	J	0.063	0.634	mg/Kg-dry	1	2/6/2013 17:17
Calcium	83,700		1,300	6,340	mg/Kg-dry	100	2/6/2013 18:31
Chromium	15.4		0.11	0.634	mg/Kg-dry	1	2/6/2013 17:17
Cobalt	5.45		0.089	0.634	mg/Kg-dry	1	2/6/2013 17:17
Copper	9.70		0.13	0.634	mg/Kg-dry	1	2/6/2013 17:17
Iron	10,800		13	63.4	mg/Kg-dry	1	2/6/2013 17:17
Lead	11.9		0.063	0.634	mg/Kg-dry	1	2/6/2013 17:17
Manganese	410		13	63.4	mg/Kg-dry	100	2/6/2013 18:31
Molybdenum	1.01		0.19	0.634	mg/Kg-dry	1	2/6/2013 17:17
Nickel	11.4		0.11	0.634	mg/Kg-dry	1	2/6/2013 17:17
Potassium	3,310		16	63.4	mg/Kg-dry	1	2/6/2013 17:17
Selenium	0.980		0.23	0.634	mg/Kg-dry	1	2/6/2013 17:17
Silver	U		0.10	0.634	mg/Kg-dry	1	2/6/2013 17:17
Sodium	332		28	127	mg/Kg-dry	2	2/7/2013 15:33
Uranium	U		0.63	0.634	mg/Kg-dry	1	2/6/2013 17:17
Zinc	38.7		0.32	0.634	mg/Kg-dry	1	2/6/2013 17:17
LOW-LEVEL SEMIVOLATILES		Met	hod: SW8270		Prep: SW35	41 / 2/5/13	Analyst: LG
1-Methylnaphthalene	U		2.1	8.5	μg/Kg-dry	1	2/5/2013 20:21
2-Methylnaphthalene	U		2.1	8.5	μg/Kg-dry	1	2/5/2013 20:21
Benzo(a)pyrene	U		2.1	8.5	μg/Kg-dry	1	2/5/2013 20:21
Naphthalene	U		2.1	8.5	μg/Kg-dry	1	2/5/2013 20:21
Surr: 2,4,6-Tribromophenol	61.0			36-126	%REC	1	2/5/2013 20:21
Surr: 2-Fluorobiphenyl	76.3			43-125	%REC	1	2/5/2013 20:21

Client: Navajo Refining Company

Project: RO Discharge Sampling

MW-117 (1) **Sample ID:**

Collection Date: 1/31/2013 08:55 AM

Work Order: 1302079

Lab ID: 1302079-01

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 2-Fluorophenol	60.2			37-125	%REC	1	2/5/2013 20:21
Surr: 4-Terphenyl-d14	99.7			32-125	%REC	1	2/5/2013 20:21
Surr: Nitrobenzene-d5	71.9			37-125	%REC	1	2/5/2013 20:21
Surr: Phenol-d6	42.2			40-125	%REC	1	2/5/2013 20:21
VOLATILES - SW8260C		Metl	hod: SW8260				Analyst: WLR
1,1,1-Trichloroethane	U		2.2	6.5	μg/Kg-dry	1	2/4/2013 14:43
1,1,2,2-Tetrachloroethane	U		0.65	6.5	μg/Kg-dry	1	2/4/2013 14:43
1,1,2-Trichloroethane	U		2.6	6.5	μg/Kg-dry	1	2/4/2013 14:43
1,1-Dichloroethane	U		0.65	6.5	μg/Kg-dry	1	2/4/2013 14:43
1,1-Dichloroethene	U		1.9	6.5	μg/Kg-dry	1	2/4/2013 14:43
1,2-Dibromoethane	U		0.90	6.5	μg/Kg-dry	1	2/4/2013 14:43
1,2-Dichloroethane	U		0.77	6.5	μg/Kg-dry	1	2/4/2013 14:43
Benzene	U		0.77	6.5	μg/Kg-dry	1	2/4/2013 14:43
Carbon tetrachloride	U		1.5	6.5	μg/Kg-dry	1	2/4/2013 14:43
Chloroform	U		2.3	6.5	μg/Kg-dry	1	2/4/2013 14:43
Ethylbenzene	U		1.2	6.5	μg/Kg-dry	1	2/4/2013 14:43
Methylene chloride	8.6	J	3.2	13	μg/Kg-dry	1	2/4/2013 14:43
Tetrachloroethene	U		1.3	6.5	μg/Kg-dry	1	2/4/2013 14:43
Toluene	U		0.90	6.5	μg/Kg-dry	1	2/4/2013 14:43
Trichloroethene	U		2.1	6.5	μg/Kg-dry	1	2/4/2013 14:43
Vinyl chloride	U		1.3	2.6	μg/Kg-dry	1	2/4/2013 14:43
Xylenes, Total	U		3.4	19	μg/Kg-dry	1	2/4/2013 14:43
Surr: 1,2-Dichloroethane-d4	81.8			70-128	%REC	1	2/4/2013 14:43
Surr: 4-Bromofluorobenzene	93.4			73-126	%REC	1	2/4/2013 14:43
Surr: Dibromofluoromethane	97.7			71-128	%REC	1	2/4/2013 14:43
Surr: Toluene-d8	96.6			73-127	%REC	1	2/4/2013 14:43
ANIONS - EPA 300.0 (1993)		Metl	hod: E300		Prep: E300 /	2/7/13	Analyst: JKP
Chloride	81.1		2.6	6.38	mg/Kg-dry	1	2/7/2013 22:37
Fluoride	15.4		0.38	1.28	mg/Kg-dry	1	2/7/2013 22:37
Nitrogen, Nitrate (As N)	0.804	J	0.38	1.28	mg/Kg-dry	1	2/7/2013 22:37
Nitrogen, Nitrite (As N)	U		0.38	1.28	mg/Kg-dry	1	2/7/2013 22:37
Sulfate	777		2.6	6.38	mg/Kg-dry	1	2/7/2013 22:37
Surr: Selenate (surr)	93.6			85-115	%REC	1	2/7/2013 22:37
CYANIDE		Meth	hod: SW9014		Prep: SW90	10C / 2/8/13	Analyst: EDG
Cyanide	U		0.75	2.52	mg/Kg-dry	1	2/8/2013 17:30
MOISTURE		Meth	hod: SW3550				Analyst: KAH
Percent Moisture	22.5		0.010	0.0100	wt%	1	2/6/2013 15:40

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-117 (3)

Collection Date: 1/31/2013 09:00 AM

Date: 13-Feb-13

Work Order: 1302079

Lab ID: 1302079-02

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 23.7
 0.010
 0.0100
 wt%
 1
 2/6/2013 15:40

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-117 (5)

Collection Date: 1/31/2013 09:15 AM

Date: 13-Feb-13

Work Order: 1302079

Lab ID: 1302079-03

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Meth	od: SW7471A		Prep: SW74	71A / 2/5/13	Analyst: OFO
Mercury	U		0.34	4.17	μg/Kg-dry	1	2/5/2013 17:34
METALS		Meth	od: SW6020		Prep: SW30	50A / 2/5/13	Analyst: SKS
Aluminum	5,020		24	119	mg/Kg-dry	100	2/7/2013 16:20
Arsenic	1.40		0.12	0.593	mg/Kg-dry	1	2/6/2013 17:32
Barium	62.2		0.095	0.593	mg/Kg-dry	1	2/6/2013 17:32
Boron	7.89		3.3	5.93	mg/Kg-dry	2	2/7/2013 15:52
Cadmium	0.133	J	0.059	0.593	mg/Kg-dry	1	2/6/2013 17:32
Calcium	151,000		1,200	5,930	mg/Kg-dry	100	2/7/2013 16:20
Chromium	7.26		0.11	0.593	mg/Kg-dry	1	2/6/2013 17:32
Cobalt	1.54		0.083	0.593	mg/Kg-dry	1	2/6/2013 17:32
Copper	2.51		0.12	0.593	mg/Kg-dry	1	2/6/2013 17:32
Iron	3,570		12	59.3	mg/Kg-dry	1	2/6/2013 17:32
Lead	2.90		0.059	0.593	mg/Kg-dry	1	2/6/2013 17:32
Manganese	105		0.12	0.593	mg/Kg-dry	1	2/6/2013 17:32
Molybdenum	0.457	J	0.18	0.593	mg/Kg-dry	1	2/6/2013 17:32
Nickel	3.48		0.11	0.593	mg/Kg-dry	1	2/6/2013 17:32
Potassium	1,110		15	59.3	mg/Kg-dry	1	2/6/2013 17:32
Selenium	0.415	J	0.21	0.593	mg/Kg-dry	1	2/6/2013 17:32
Silver	U		0.095	0.593	mg/Kg-dry	1	2/6/2013 17:32
Sodium	164		26	119	mg/Kg-dry	2	2/7/2013 15:52
Uranium	U		0.59	0.593	mg/Kg-dry	1	2/6/2013 17:32
Zinc	11.6		0.30	0.593	mg/Kg-dry	1	2/6/2013 17:32
ANIONS - EPA 300.0 (1993)		Meth	od: E300		Prep: E300 /	2/7/13	Analyst: JKP
Chloride	37.5		2.4	6.07	mg/Kg-dry	1	2/7/2013 22:51
Fluoride	8.01		0.36	1.21	mg/Kg-dry	1	2/7/2013 22:51
Nitrogen, Nitrate (As N)	U		0.36	1.21	mg/Kg-dry	1	2/7/2013 22:51
Nitrogen, Nitrite (As N)	U		0.36	1.21	mg/Kg-dry	1	2/7/2013 22:51
Sulfate	3,960		24	60.7	mg/Kg-dry	10	2/8/2013 11:41
Surr: Selenate (surr)	87.8			85-115	%REC	1	2/7/2013 22:51
Surr: Selenate (surr)	89.4			85-115	%REC	10	2/8/2013 11:41
CYANIDE		Meth	od: SW9014		Prep: SW90	10C / 2/8/13	Analyst: EDG
Cyanide	U		0.66	2.20	mg/Kg-dry	1	2/8/2013 17:30
MOISTURE		Meth	od: SW3550				Analyst: KAH
Percent Moisture	19.0		0.010	0.0100	wt%	1	2/6/2013 15:40

Client: Navajo Refining Company

Work Order: 1302079 **Project: RO Discharge Sampling** MW-117 (7)

Sample ID: Collection Date: 1/31/2013 10:15 AM Matrix: SOIL

Report Dilution **Date Analyzed** Limit **Analyses** Result Qual **MDL Factor** Units

Date: 13-Feb-13

Lab ID: 1302079-04

Method: SW3550 **MOISTURE** Analyst: KAH 2/6/2013 15:40 **Percent Moisture** 22.7 0.010 0.0100 wt%

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-117 (9)

Collection Date: 1/31/2013 10:00 AM

Date: 13-Feb-13

Work Order: 1302079

Lab ID: 1302079-05

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 21.3
 0.010
 0.0100
 wt%
 1
 2/6/2013 15:40

Client: Navajo Refining Company

Project: RO Discharge Sampling **Sample ID:** MW-117 (10)

Collection Date: 1/31/2013 10:30 AM

Work Order: 1302079

Lab ID: 1302079-06

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Meth	od: SW7471A		Prep: SW74	71A / 2/5/13	Analyst: OFO
Mercury	2.01	J	0.39	4.76	μg/Kg-dry	1	2/5/2013 17:36
METALS		Meth	od: SW6020		Prep: SW30	50A / 2/5/13	Analyst: SKS
Aluminum	6,140		27	133	mg/Kg-dry	100	2/7/2013 16:23
Arsenic	2.48		0.13	0.665	mg/Kg-dry	1	2/6/2013 17:34
Barium	49.2		0.11	0.665	mg/Kg-dry	1	2/6/2013 17:34
Boron	5.92	J	3.7	6.65	mg/Kg-dry	2	2/7/2013 15:54
Cadmium	0.195	J	0.067	0.665	mg/Kg-dry	1	2/6/2013 17:34
Calcium	119,000		1,300	6,650	mg/Kg-dry	100	2/7/2013 16:23
Chromium	8.28		0.12	0.665	mg/Kg-dry	1	2/6/2013 17:34
Cobalt	2.23		0.093	0.665	mg/Kg-dry	1	2/6/2013 17:34
Copper	2.09		0.13	0.665	mg/Kg-dry	1	2/6/2013 17:34
Iron	5,340		13	66.5	mg/Kg-dry	1	2/6/2013 17:34
Lead	4.46		0.067	0.665	mg/Kg-dry	1	2/6/2013 17:34
Manganese	69.2		0.13	0.665	mg/Kg-dry	1	2/6/2013 17:34
Molybdenum	0.276	J	0.20	0.665	mg/Kg-dry	1	2/6/2013 17:34
Nickel	3.85		0.12	0.665	mg/Kg-dry	1	2/6/2013 17:34
Potassium	1,310		17	66.5	mg/Kg-dry	1	2/6/2013 17:34
Selenium	0.422	J	0.24	0.665	mg/Kg-dry	1	2/6/2013 17:34
Silver	U		0.11	0.665	mg/Kg-dry	1	2/6/2013 17:34
Sodium	119	J	29	133	mg/Kg-dry	2	2/7/2013 15:54
Uranium	U		0.67	0.665	mg/Kg-dry	1	2/6/2013 17:34
Zinc	12.2		0.33	0.665	mg/Kg-dry	1	2/6/2013 17:34
ANIONS - EPA 300.0 (1993)		Meth	od: E300		Prep: E300	/ 2/7/13	Analyst: JKP
Chloride	28.7		2.7	6.76	mg/Kg-dry	1	2/7/2013 23:06
Fluoride	6.49		0.41	1.35	mg/Kg-dry	1	2/7/2013 23:06
Nitrogen, Nitrate (As N)	U		0.41	1.35	mg/Kg-dry	1	2/7/2013 23:06
Nitrogen, Nitrite (As N)	U		0.41	1.35	mg/Kg-dry	1	2/7/2013 23:06
Sulfate	1,790		27	67.6	mg/Kg-dry	10	2/8/2013 11:56
Surr: Selenate (surr)	90.5			85-115	%REC	1	2/7/2013 23:06
Surr: Selenate (surr)	86.6			85-115	%REC	10	2/8/2013 11:56
CYANIDE		Meth	od: SW9014		Prep: SW90	10C / 2/8/13	Analyst: EDG
Cyanide	U		0.76	2.53	mg/Kg-dry	1	2/8/2013 17:30
MOISTURE		Meth	od: SW3550				Analyst: KAH
Percent Moisture	26.4		0.010	0.0100	wt%	1	2/6/2013 15:40

Client: Navajo Refining Company

Project: RO Discharge Sampling Work Order: 1302079

 Sample ID:
 MW-117 (11)
 Lab ID:
 1302079-07

 Collection Date:
 1/31/2013 03:15 PM
 Matrix:
 SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 36.2
 0.010
 0.0100
 wt%
 1
 2/6/2013 15:40

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302079

 Sample ID: MW-117 (13)
 Lab ID: 1302079-08

Collection Date: 1/31/2013 03:20 PM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 33.6
 0.010
 0.0100
 wt%
 1
 2/6/2013 15:40

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-117 (15) **Collection Date:** 1/31/2013 03:20 PM

Work Order: 1302079 **Lab ID:** 1302079-09

Matrix: SOIL

Date: 13-Feb-13

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B	Result Qual MDL Limit Units Factor Method: SW7471A Prep: SW7471A / 2/5/13 1.10 J 0.37 4.58 µg/Kg-dry 1 Method: SW6020 Prep: SW3050A / 2/5/13 Method: SW6020 Prep: SW30505A / 2/5/13 Me	Analyst: OFO					
Mercury	1.10	J	0.37	4.58	μg/Kg-dry	1	2/5/2013 17:38
METALS		Meth	od: SW6020		Prep: SW30	50A / 2/5/13	Analyst: SKS
Aluminum	5,400		24	121	mg/Kg-dry	100	2/7/2013 16:25
Arsenic	7.29		0.12	0.607	mg/Kg-dry	1	2/6/2013 17:41
Barium	8.33		0.097	0.607	mg/Kg-dry	1	2/6/2013 17:41
Boron	2.96	J	1.7	3.03	mg/Kg-dry	1	2/7/2013 15:57
Cadmium	U		0.061	0.607	mg/Kg-dry	1	2/6/2013 17:41
Calcium	26,700		1,200	6,070	mg/Kg-dry	100	2/7/2013 16:25
Chromium	6.81		0.11	0.607	mg/Kg-dry	1	2/6/2013 17:41
Cobalt	3.54		0.085	0.607	mg/Kg-dry	1	2/6/2013 17:41
Copper	2.20		0.12	0.607	mg/Kg-dry	1	2/6/2013 17:41
Iron	8,050		12	60.7		1	2/6/2013 17:41
Lead	3.04		0.061	0.607		1	2/6/2013 17:41
Manganese	91.0		0.12	0.607		1	2/6/2013 17:41
Molybdenum	0.606	J	0.18	0.607		1	2/6/2013 17:41
Nickel	5.09		0.11	0.607		1	2/6/2013 17:41
Potassium	1,230		16	60.7		1	2/6/2013 17:41
Selenium			0.22	0.607		1	2/6/2013 17:41
Silver	U		0.097	0.607	mg/Kg-dry	1	2/6/2013 17:41
Sodium	154		13	60.7	mg/Kg-dry	1	2/6/2013 17:41
Uranium	U		0.61	0.607		1	2/6/2013 17:41
Zinc	10.1		0.30	0.607	mg/Kg-dry	1	2/6/2013 17:41
ANIONS - EPA 300.0 (1993)		Meth	od: E300		Prep: E300	/ 2/7/13	Analyst: JKP
Chloride	33.5		2.6	6.54	mg/Kg-dry	1	2/7/2013 23:20
Fluoride	5.93		0.39	1.31	mg/Kg-dry	1	2/7/2013 23:20
Nitrogen, Nitrate (As N)	U		0.39	1.31	mg/Kg-dry	1	2/7/2013 23:20
Nitrogen, Nitrite (As N)	U		0.39	1.31	mg/Kg-dry	1	2/7/2013 23:20
Sulfate	2,100		26	65.4		10	2/8/2013 12:10
Surr: Selenate (surr)	88.1			85-115		1	2/7/2013 23:20
Surr: Selenate (surr)	91.0			85-115	%REC	10	2/8/2013 12:10
CYANIDE		Meth	od: SW9014		Prep: SW90	10C / 2/8/13	Analyst: EDG
Cyanide	U		0.76	2.53	mg/Kg-dry	1	2/8/2013 17:30
MOISTURE		Meth	od: SW3550				Analyst: KAH
Percent Moisture	23.9		0.010	0.0100	wt%	1	2/6/2013 15:40

Client: Navajo Refining Company

Project: RO Discharge Sampling

MW-117 (17) **Sample ID:**

Collection Date: 1/31/2013 03:20 PM

Date: 13-Feb-13

Work Order: 1302079

Lab ID: 1302079-10

Matrix: SOIL

Report Dilution **Date Analyzed** Limit **Analyses** Result Qual **MDL Factor** Units

Method: SW3550 **MOISTURE** Analyst: KAH 2/6/2013 15:40 **Percent Moisture** 18.9 0.010 0.0100 wt%

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302079

 Sample ID: MW-117 (19)
 Lab ID: 1302079-11

Collection Date: 1/31/2013 03:25 PM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 25.0
 0.010
 0.0100
 wt%
 1
 2/6/2013 15:40

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-117 (20) **Collection Date:** 1/31/2013 03:25 PM

Work Order: 1302079

Lab ID: 1302079-12

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Meth	nod: SW7471A	1	Prep: SW74	71A / 2/5/13	Analyst: OFO
Mercury	3.30	J	0.36	4.45	μg/Kg-dry	1	2/5/2013 17:40
METALS		Meth	nod: SW6020		Prep: SW30	50A / 2/5/13	Analyst: SKS
Aluminum	11,200		24	121	mg/Kg-dry	100	2/7/2013 16:28
Arsenic	1.12		0.12	0.603	mg/Kg-dry	1	2/6/2013 17:44
Barium	23.2		0.096	0.603	mg/Kg-dry	1	2/6/2013 17:44
Boron	2.45	J	1.7	3.01	mg/Kg-dry	1	2/7/2013 15:59
Cadmium	0.234	J	0.060	0.603	mg/Kg-dry	1	2/6/2013 17:44
Calcium	95,400		1,200	6,030	mg/Kg-dry	100	2/7/2013 16:28
Chromium	11.9		0.11	0.603	mg/Kg-dry	1	2/6/2013 17:44
Cobalt	3.43		0.084	0.603	mg/Kg-dry	1	2/6/2013 17:44
Copper	4.44		0.12	0.603	mg/Kg-dry	1	2/6/2013 17:44
Iron	6,600		12	60.3	mg/Kg-dry	1	2/6/2013 17:44
Lead	7.99		0.060	0.603	mg/Kg-dry	1	2/6/2013 17:44
Manganese	72.0		0.12	0.603	mg/Kg-dry	1	2/6/2013 17:44
Molybdenum	U		0.18	0.603	mg/Kg-dry	1	2/6/2013 17:44
Nickel	6.31		0.11	0.603	mg/Kg-dry	1	2/6/2013 17:44
Potassium	1,760		16	60.3	mg/Kg-dry	1	2/6/2013 17:44
Selenium	0.699		0.22	0.603	mg/Kg-dry	1	2/6/2013 17:44
Silver	U		0.096	0.603	mg/Kg-dry	1	2/6/2013 17:44
Sodium	208		13	60.3	mg/Kg-dry	1	2/6/2013 17:44
Uranium	U		0.60	0.603	mg/Kg-dry	1	2/6/2013 17:44
Zinc	22.0		0.30	0.603	mg/Kg-dry	1	2/6/2013 17:44
ANIONS - EPA 300.0 (1993)		Meth	nod: E300		Prep: E300	2/7/13	Analyst: JKP
Chloride	24.4		2.5	6.29	mg/Kg-dry	1	2/7/2013 23:35
Fluoride	5.11		0.38	1.26	mg/Kg-dry	1	2/7/2013 23:35
Nitrogen, Nitrate (As N)	0.415	J	0.38	1.26	mg/Kg-dry	1	2/7/2013 23:35
Nitrogen, Nitrite (As N)	U		0.38	1.26	mg/Kg-dry	1	2/7/2013 23:35
Sulfate	349		2.5	6.29	mg/Kg-dry	1	2/7/2013 23:35
Surr: Selenate (surr)	92.5			85-115	%REC	1	2/7/2013 23:35
CYANIDE		Meth	nod: SW9014		Prep: SW90	10C / 2/8/13	Analyst: EDG
Cyanide	U		0.73	2.45	mg/Kg-dry	1	2/8/2013 17:30
MOISTURE		Meth	nod: SW3550				Analyst: KAH
Percent Moisture	20.7		0.010	0.0100	wt%	1	2/6/2013 15:40

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302079

 Sample ID: MW-117 (21)
 Lab ID: 1302079-13

Collection Date: 1/31/2013 03:30 PM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 21.5
 0.010
 0.0100
 wt%
 1
 2/6/2013 15:40

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302079

 Sample ID: MW-117 (23)
 Lab ID: 1302079-14

Collection Date: 1/31/2013 03:30 PM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 23.4
 0.010
 0.0100
 wt%
 1
 2/6/2013 15:40

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-117 (25) **Collection Date:** 1/31/2013 03:40 PM

Work Order: 1302079

Lab ID: 1302079-15

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Method: SW8015	iM .	Prep: SW35	41 / 2/5/13	Analyst: KMB
TPH (Oil Range)	U	0.63	4.3	mg/Kg-dry	1	2/11/2013 18:56
TPH (Diesel Range)	U	0.63	2.1	mg/Kg-dry	1	2/11/2013 18:56
Surr: 2-Fluorobiphenyl	60.3		60-135	%REC	1	2/11/2013 18:56
GASOLINE RANGE ORGANICS - SW801	5C	Method: SW8015	i			Analyst: KKP
Gasoline Range Organics	U	0.025	0.063	mg/Kg-dry	1	2/5/2013 19:20
Surr: 4-Bromofluorobenzene	89.6		70-130	%REC	1	2/5/2013 19:20
MERCURY - SW7471B		Method: SW7471	A	Prep: SW74	71A / 2/5/13	Analyst: OFO
Mercury	U	0.36	4.40	μg/Kg-dry	1	2/5/2013 17:42
METALS		Method: SW6020		Prep: SW30	50A / 2/5/13	Analyst: SKS
Aluminum	8,180	25	126	mg/Kg-dry	100	2/7/2013 16:30
Arsenic	0.526	J 0.13	0.631	mg/Kg-dry	1	2/6/2013 17:46
Barium	6.58	0.10	0.631	mg/Kg-dry	1	2/6/2013 17:46
Boron	U	1.8	3.16	mg/Kg-dry	1	2/7/2013 16:02
Cadmium	U	0.063	0.631	mg/Kg-dry	1	2/6/2013 17:46
Calcium	2,810	13	63.1	mg/Kg-dry	1	2/6/2013 17:46
Chromium	7.67	0.11	0.631	mg/Kg-dry	1	2/6/2013 17:46
Cobalt	2.05	0.088	0.631	mg/Kg-dry	1	2/6/2013 17:46
Copper	3.35	0.13	0.631	mg/Kg-dry	1	2/6/2013 17:46
Iron	4,590	13	63.1	mg/Kg-dry	1	2/6/2013 17:46
Lead	4.74	0.063	0.631	mg/Kg-dry	1	2/6/2013 17:46
Manganese	37.5	0.13	0.631	mg/Kg-dry	1	2/6/2013 17:46
Molybdenum	U	0.19	0.631	mg/Kg-dry	1	2/6/2013 17:46
Nickel	4.40	0.11	0.631	mg/Kg-dry	1	2/6/2013 17:46
Potassium	1,490	16	63.1	mg/Kg-dry	1	2/6/2013 17:46
Selenium	U	0.23	0.631	mg/Kg-dry	1	2/6/2013 17:46
Silver	U	0.10	0.631	mg/Kg-dry	1	2/6/2013 17:46
Sodium	153	14	63.1	mg/Kg-dry	1	2/6/2013 17:46
Uranium	U	0.63	0.631	mg/Kg-dry	1	2/6/2013 17:46
Zinc	14.5	0.32	0.631	mg/Kg-dry	1	2/6/2013 17:46
LOW-LEVEL SEMIVOLATILES		Method: SW8270		Prep: SW35	41 / 2/5/13	Analyst: LG
1-Methylnaphthalene	U	2.0	8.3	μg/Kg-dry	1	2/5/2013 20:42
2-Methylnaphthalene	U	2.0	8.3	μg/Kg-dry	1	2/5/2013 20:42
Benzo(a)pyrene	U	2.0	8.3	μg/Kg-dry	1	2/5/2013 20:42
Naphthalene	U	2.0	8.3	μg/Kg-dry	1	2/5/2013 20:42
Surr: 2,4,6-Tribromophenol	65.6		36-126	%REC	1	2/5/2013 20:42
Surr: 2-Fluorobiphenyl	81.0		43-125	%REC	1	2/5/2013 20:42

Client: Navajo Refining Company

Project: RO Discharge Sampling **Sample ID:** MW-117 (25)

Collection Date: 1/31/2013 03:40 PM

Work Order: 1302079

Lab ID: 1302079-15

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 2-Fluorophenol	60.0			37-125	%REC	1	2/5/2013 20:42
Surr: 4-Terphenyl-d14	95.7			32-125	%REC	1	2/5/2013 20:42
Surr: Nitrobenzene-d5	71.1			37-125	%REC	1	2/5/2013 20:42
Surr: Phenol-d6	58.7			40-125	%REC	1	2/5/2013 20:42
VOLATILES - SW8260C		Met	hod: SW8260				Analyst: WLR
1,1,1-Trichloroethane	U		2.2	6.3	μg/Kg-dry	1	2/4/2013 15:05
1,1,2,2-Tetrachloroethane	U		0.63	6.3	μg/Kg-dry	1	2/4/2013 15:05
1,1,2-Trichloroethane	U		2.5	6.3	μg/Kg-dry	1	2/4/2013 15:05
1,1-Dichloroethane	U		0.63	6.3	μg/Kg-dry	1	2/4/2013 15:05
1,1-Dichloroethene	U		1.9	6.3	μg/Kg-dry	1	2/4/2013 15:05
1,2-Dibromoethane	U		0.89	6.3	μg/Kg-dry	1	2/4/2013 15:05
1,2-Dichloroethane	U		0.76	6.3	μg/Kg-dry	1	2/4/2013 15:05
Benzene	U		0.76	6.3	μg/Kg-dry	1	2/4/2013 15:05
Carbon tetrachloride	U		1.5	6.3	μg/Kg-dry	1	2/4/2013 15:05
Chloroform	U		2.3	6.3	μg/Kg-dry	1	2/4/2013 15:05
Ethylbenzene	U		1.1	6.3	μg/Kg-dry	1	2/4/2013 15:05
Methylene chloride	6.9	J	3.2	13	μg/Kg-dry	1	2/4/2013 15:05
Tetrachloroethene	U		1.3	6.3	μg/Kg-dry	1	2/4/2013 15:05
Toluene	U		0.89	6.3	μg/Kg-dry	1	2/4/2013 15:05
Trichloroethene	U		2.0	6.3	μg/Kg-dry	1	2/4/2013 15:05
Vinyl chloride	U		1.3	2.5	μg/Kg-dry	1	2/4/2013 15:05
Xylenes, Total	U		3.3	19	μg/Kg-dry	1	2/4/2013 15:05
Surr: 1,2-Dichloroethane-d4	103			70-128	%REC	1	2/4/2013 15:05
Surr: 4-Bromofluorobenzene	103			73-126	%REC	1	2/4/2013 15:05
Surr: Dibromofluoromethane	93.0			71-128	%REC	1	2/4/2013 15:05
Surr: Toluene-d8	104			73-127	%REC	1	2/4/2013 15:05
ANIONS - EPA 300.0 (1993)		Met	hod: E300		Prep: E300	/ 2/7/13	Analyst: JKP
Chloride	26.3		2.5	6.29	mg/Kg-dry	1	2/7/2013 23:50
Fluoride	5.18		0.38	1.26	mg/Kg-dry	1	2/7/2013 23:50
Nitrogen, Nitrate (As N)	0.566	J	0.38	1.26	mg/Kg-dry	1	2/7/2013 23:50
Nitrogen, Nitrite (As N)	U		0.38	1.26	mg/Kg-dry	1	2/7/2013 23:50
Sulfate	396		2.5	6.29	mg/Kg-dry	1	2/7/2013 23:50
Surr: Selenate (surr)	92.0			85-115	%REC	1	2/7/2013 23:50
CYANIDE		Met	hod: SW9014		Prep: SW90	10C / 2/8/13	Analyst: EDG
Cyanide	U		0.67	2.23	mg/Kg-dry	1	2/8/2013 17:30
MOISTURE		Met	hod: SW3550				Analyst: KAH
Percent Moisture	21.0		0.010	0.0100	wt%	1	2/7/2013 15:15

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: Trip Blank **Collection Date:** 1/31/2013

Work Order: 1302079

Lab ID: 1302079-16 **Matrix:** WATER

Date: 13-Feb-13

Analyses	Result	Qual MDL	Report Limit	Units	Dilution Factor	Date Analyzed
LOW LEVEL VOLATILES - SW8260C		Method: SW8260				Analyst: AKP
1,1,1-Trichloroethane	U	0.00030	0.0010	mg/L	1	2/5/2013 15:16
1,1,2,2-Tetrachloroethane	U	0.00050	0.0010	mg/L	1	2/5/2013 15:16
1,1,2-Trichloroethane	U	0.00030	0.0010	mg/L	1	2/5/2013 15:16
1,1-Dichloroethane	U	0.00030	0.0010	mg/L	1	2/5/2013 15:16
1,1-Dichloroethene	U	0.00050	0.0010	mg/L	1	2/5/2013 15:16
1,2-Dibromoethane	U	0.00030	0.0010	mg/L	1	2/5/2013 15:16
1,2-Dichloroethane	U	0.00030	0.0010	mg/L	1	2/5/2013 15:16
Benzene	U	0.00020	0.0010	mg/L	1	2/5/2013 15:16
Carbon tetrachloride	U	0.00030	0.0010	mg/L	1	2/5/2013 15:16
Chloroform	U	0.00030	0.0010	mg/L	1	2/5/2013 15:16
Ethylbenzene	U	0.00030	0.0010	mg/L	1	2/5/2013 15:16
Methylene chloride	U	0.00040	0.0020	mg/L	1	2/5/2013 15:16
Tetrachloroethene	U	0.00040	0.0010	mg/L	1	2/5/2013 15:16
Toluene	U	0.00030	0.0010	mg/L	1	2/5/2013 15:16
Trichloroethene	U	0.00020	0.0010	mg/L	1	2/5/2013 15:16
Vinyl chloride	U	0.00040	0.0010	mg/L	1	2/5/2013 15:16
Xylenes, Total	U	0.00030	0.0010	mg/L	1	2/5/2013 15:16
Surr: 1,2-Dichloroethane-d4	92.8		71-125	%REC	1	2/5/2013 15:16
Surr: 4-Bromofluorobenzene	94.3		70-125	%REC	1	2/5/2013 15:16
Surr: Dibromofluoromethane	101		74-125	%REC	1	2/5/2013 15:16
Surr: Toluene-d8	97.0		78-123	%REC	1	2/5/2013 15:16

Client: Navajo Refining Company

Work Order: 1302079

Project: RO Discharge Sampling

Date: 13-Feb-13

QC BATCH REPORT

	Instrument ID FID-7		Metho	d: SW8015 I	М				
MBLK Sample ID:	FBLKS1-130205-67579				Units: mg/	Kg	Analysis Date	e: 2/6/2013 11	1:56 AM
Client ID:	Run I	D: FID-7 _1	130206A	5	SeqNo: 310 4	1153	Prep Date: 2/5/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value %RF	RPD D Limit	Qual
TPH (Oil Range)	U	3.4							
TPH (Diesel Range)	U	1.7							
Surr: 2-Fluorobiphenyl	2.092	0.10	3.33	0	62.8	60-135	0		
LCS Sample ID:	FLCSS1-130205-67579				Units: mg/	Kg	Analysis Date	e: 2/6/2013 12	2:19 PM
Client ID:	Run I	D: FID-7 _1	130206A	9	SeqNo: 310 4	1154	Prep Date: 2/5/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value %RF	RPD D Limit	Qual
TPH (Oil Range)	27.05	3.4	33.33	0	81.2	70-130	0		
TPH (Diesel Range)	35.72	1.7	33.33	0	107	70-130	0		
Surr: 2-Fluorobiphenyl	2.536	0.10	3.33	0	76.2	60-135	0		
MS Sample ID:	1302018-01BMS				Units: mg/	Kg	Analysis Date	e: 2/6/2013 01	1:06 PM
Client ID:	Run I	D: FID-7 _1	130206A	9	SeqNo: 310 4	1156	Prep Date: 2/5/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value %RF	RPD D Limit	Qual
TPH (Oil Range)	229.1	3.4	33.23	219.8	28.1	70-130	0		SEO
TPH (Diesel Range)	80.52	1.7	33.23	75.45	15.3	70-130	0		SE
\									
Surr: 2-Fluorobiphenyl	2.284	0.10	3.32	0	68.8	60-135	0		
Surr: 2-Fluorobiphenyl	2.284 1302018-01BMSD	0.10	3.32	0	68.8 Units: mg/		0 Analysis Date	e: 2/6/2013 0°	1:29 PM
Surr: 2-Fluorobiphenyl MSD Sample ID:	1302018-01BMSD	0.10 D: FID-7 _1				Kg		e: 2/6/2013 0 °	1:29 PM
Surr: 2-Fluorobiphenyl MSD Sample ID:	1302018-01BMSD				Units: mg/	Kg	Analysis Date		1:29 PM
Surr: 2-Fluorobiphenyl MSD Sample ID: Client ID:	1302018-01BMSD			S	Units: mg/	Kg 1157	Analysis Date Prep Date: 2/5/2013	DF: 1	1:29 PM Qual
Surr: 2-Fluorobiphenyl MSD Sample ID: Client ID: Analyte	1302018-01BMSD Run I	D: FID-7 _1	130206A	SPK Ref	Units: mg/ l SeqNo: 310 4 %REC	Kg 1157 Control	Analysis Date Prep Date: 2/5/2013 RPD Ref	DF: 1	
Surr: 2-Fluorobiphenyl MSD Sample ID: Client ID: Analyte TPH (Oil Range)	1302018-01BMSD Run I Result	D: FID-7_ 1	1 30206A SPK Val	SPK Ref Value	Units: mg/ l SeqNo: 310 4 %REC -37.7	Kg 4157 Control Limit	Analysis Date Prep Date: 2/5/2013 RPD Ref Value %RF	DF: 1 RPD Limit	Qual
Surr: 2-Fluorobiphenyl	1302018-01BMSD Run I Result 207.2	D: FID-7_ ^ PQL 3.4	33.24	SPK Ref Value 219.8	Units: mg/l SeqNo: 3104 %REC 3 -37.7 3 3.32	Kg 4157 Control Limit 70-130	Analysis Date Prep Date: 2/5/2013 RPD Ref Value %RF 229.1 80.52	DF: 1 RPD Limit 10 30	Qual SEO

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

Note:

QC Page: 1 of 24

Client: Navajo Refining Company

Work Order: 1302079

Project: RO Discharge Sampling

Batch ID: R142225 Instrume	nt ID FID-9		Metho	d: SW80 1	15						
MBLK Sample ID: GBLKS-13	0205-R142225				U	Jnits: mg/	Kg	Analys	s Date: 2/	5/2013 01	:02 PN
Client ID:	Run	ID: FID-9 _1	130205A		Se	qNo: 310 :	3619	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Gasoline Range Organics Surr: 4-Bromofluorobenzene	U 0.08374	0.050 0.0050	0.1		0	83.7	70-130	0			
LCS Sample ID: GLCSS-13	0205-D1/2225					Jnits: mg/	Ka		s Date: 2/	5/2012 12	-25 DN
Client ID:		ID: FID-9 _1	130205A			qNo: 310 ;	_	Prep Date:	5 Date. 2	DF: 1	23 FIV
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Gasoline Range Organics	0.942	0.050	1		0	94.2	70-130	0	701 11 12		
Surr: 4-Bromofluorobenzene	0.09701	0.0050	0.1		0	97	70-130				
LCCD Commis ID: CLCCDC 4	20205 D4 42225					lus idea :	V	A = a	a Data: 0/	E/0040 40	-44 DI
LCSD Sample ID: GLCSDS-1 Client ID:		ID: FID-9 _1	130205A			Jnits: mg/ qNo: 310 :	•	Prep Date:	s Date: 2/	5/2013 12 DF: 1	::44 PN
OHOTH 15.	T Carr		.0020071	SPK Ref		q. 10. 0 10 1	Control	RPD Ref		RPD	
Analyte	Result	PQL	SPK Val	Value		%REC	Limit	Value	%RPD	Limit	Qua
Gasoline Range Organics	0.9525	0.050	1		0	95.2	70-130	0.942	1.11	30	
Surr: 4-Bromofluorobenzene	0.09686	0.0050	0.1		0	96.9	70-130	0.09701	0.146	30	
MS Sample ID: 1302018-0	4ZMS				U	Jnits: mg/	Kg	Analys	s Date: 2/	5/2013 04	:11 PN
Client ID:	Run	ID: FID-9 _1	130205A		Se	qNo: 310 :	3628	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Gasoline Range Organics	0.8005	0.050	1		0	80	70-130	0			
Surr: 4-Bromofluorobenzene	0.08728	0.0050	0.1		0	87.3	70-130	0			
MSD Sample ID: 1302018-0	4ZMSD				U	Jnits: mg/	Kg	Analys	s Date: 2/	5/2013 04	:30 PN
Client ID:	Run	ID: FID-9 _1	130205A		Se	qNo: 310 :	3632	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Gasoline Range Organics	0.8125	0.050	1		0	81.2	70-130	0.8005	1.49	30	
Surr: 4-Bromofluorobenzene	0.08872	0.0050	0.1		0	88.7	70-130	0.08728	1.64	30	

Note:

Client: Navajo Refining Company

Work Order: 1302079

Project: RO Discharge Sampling

Batch ID: 675	84 Instrument ID ICPMS05		Method:	SW602	20					
MBLK	Sample ID: MBLKS1-020513-67584				Units: mg/	Kg	Analy	sis Date: 2	/8/2013 12	2:22 PM
Client ID:	Ru	n ID: ICPMS	05_130208A		SeqNo: 310	6572	Prep Date: 2/5	5/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	U	1.0								
Arsenic	U	0.50								
Barium	U	0.50								
Boron	U	2.5								
Cadmium	U	0.50								
Calcium	U	50								
Chromium	U	0.50								
Cobalt	U	0.50								
Copper	U	0.50								
Iron	U	50								
Lead	U	0.50								
Manganese	U	0.50								
Molybdenum	U	0.50								
Nickel	U	0.50								
Potassium	U	50								
Selenium	U	0.50								
Silver	U	0.50								
Sodium	U	50								
Uranium	U	0.50								
Zinc	U	0.50								

Note:

Client: Navajo Refining Company

Work Order: 1302079

Project: RO Discharge Sampling

Batch ID: 67584	Instrument ID ICPMS05		Method	SW602	20						
LCS Samp	ole ID: MLCSS1-020513-67584				L	Jnits: mg/	Kg	Analysis	Date: 2	/6/2013 0	5:15 PM
Client ID:	Rui	n ID: ICPMS	05_130206A		SeqNo: 3104261			Prep Date: 2/5/2013		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	11.63	1.0	10		0	116	80-120	0			
Arsenic	10.09	0.50	10		0	101	80-120	0			
Barium	10.49	0.50	10		0	105	80-120	0			
Boron	55.62	2.5	50		0	111	80-120	0			
Cadmium	10.17	0.50	10		0	102	80-120	0			
Calcium	1031	50	1000		0	103	80-120	0			
Chromium	10.57	0.50	10		0	106	80-120	0			
Cobalt	10.08	0.50	10		0	101	80-120	0			
Copper	10.5	0.50	10		0	105	80-120	0			
Iron	1021	50	1000		0	102	80-120	0			
Lead	10.22	0.50	10		0	102	80-120	0			
Manganese	10.18	0.50	10		0	102	80-120	0			
Molybdenum	10.14	0.50	10		0	101	80-120	0			
Nickel	10.22	0.50	10		0	102	80-120	0			
Potassium	1020	50	1000		0	102	80-120	0			
Selenium	10.63	0.50	10		0	106	80-120	0			
Silver	10.11	0.50	10		0	101	80-120	0			
Sodium	1065	50	1000		0	106	80-120	0			
Uranium	9.751	0.50	10		0	97.5	80-120	0			
Zinc	10.48	0.50	10		0	105	80-120	0			

Client: Navajo Refining Company

Work Order: 1302079

Project: RO Discharge Sampling

MS Sample ID:	1302079-01CMS			1	Units: mg/	Kg	Analysis Date: 2/6/2013 05:22 PM				
Client ID: MW-117 (1)	Run I	D: ICPMS	05_130206A	Se	eqNo: 310	Prep Date: 2/5/20	DF: 1				
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Aluminum	10850	0.95	9.479	10650	2130	75-125	0			SEO	
Arsenic	11.05	0.47	9.479	3.675	77.8	75-125	0				
Barium	119.3	0.47	9.479	140.7	-226	75-125	0			SO	
Cadmium	8.126	0.47	9.479	0.2899	82.7	75-125	0				
Calcium	58010	47	947.9	63280	-555	75-125	0			SEO	
Chromium	19.97	0.47	9.479	11.93	84.9	75-125	0				
Cobalt	12.3	0.47	9.479	4.223	85.2	75-125	0				
Copper	16.19	0.47	9.479	7.518	91.5	75-125	0				
Iron	8984	47	947.9	8371	64.7	75-125	0			SO	
Lead	22.47	0.47	9.479	9.213	140	75-125	0			S	
Manganese	313.3	0.47	9.479	323.3	-106	75-125	0			SEO	
Molybdenum	7.01	0.47	9.479	0.782	65.7	75-125	0			S	
Nickel	16.57	0.47	9.479	8.837	81.6	75-125	0				
Potassium	3413	47	947.9	2567	89.3	75-125	0				
Selenium	8.236	0.47	9.479	0.7589	78.9	75-125	0				
Silver	7.989	0.47	9.479	0.04949	83.8	75-125	0				
Uranium	8.144	0.47	9.479	0.4497	81.2	75-125	0				
Zinc	39.14	0.47	9.479	30	96.4	75-125	0				
MS Sample ID:	1302079-01CMS			Units: mg/Kg			Analysis Date: 2/7/2013 03:38 PN				
Client ID: MW-117 (1)		D. IODMO	05 130207A	5 5			Prep Date: 2/5/20		DF: 2		

M3 Sample ID. 1302079-01CM3	10				Office. Hig/	Ny	Alialysis Date. 21112013 03.30 Fil				
Client ID: MW-117 (1)	Run ID: ICPMS05_130207A				SeqNo: 310	5768	Prep Date: 2/5/2013		DF: 2		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Boron	44.25	4.7	47.39	6.71	8 79.2	75-125	()			
Sodium	1077	95	947.9	257.	.4 86.4	75-125	()			

Client: Navajo Refining Company

Work Order: 1302079

Project: RO Discharge Sampling

Batch ID: 67584	Instrument ID ICPMS05		Method	SW6020						
MSD Sample	ID: 1302079-01CMSD				Units: mg/	'Kg	Analysi	s Date: 2/	6/2013 05	:25 PM
Client ID: MW-117 (1)	Run ID	: ICPMS	05_130206A	Se	eqNo: 310	4265	Prep Date: 2/5/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	12260	0.94	9.414	10650	17200	75-125	10850	12.2	25	SEO
Arsenic	11.58	0.47	9.414	3.675	84	75-125	11.05	4.7	25	
Barium	137.2	0.47	9.414	140.7	-36.9	75-125	119.3	14	25	so
Cadmium	8.231	0.47	9.414	0.2899	84.4	75-125	8.126	1.29	25	
Calcium	69590	47	941.4	63280	670	75-125	58010	18.1	25	SEO
Chromium	21.3	0.47	9.414	11.93	99.5	75-125	19.97	6.43	25	
Cobalt	12.66	0.47	9.414	4.223	89.6	75-125	12.3	2.86	25	
Copper	15.66	0.47	9.414	7.518	86.5	75-125	16.19	3.36	25	
Iron	9940	47	941.4	8371	167	75-125	8984	10.1	25	so
Lead	15.81	0.47	9.414	9.213	70.1	75-125	22.47	34.8	25	SR
Manganese	389.5	0.47	9.414	323.3	703	75-125	313.3	21.7	25	SEO
Molybdenum	7.48	0.47	9.414	0.782	71.2	75-125	7.01	6.49	25	S
Nickel	17.56	0.47	9.414	8.837	92.6	75-125	16.57	5.76	25	
Potassium	3553	47	941.4	2567	105	75-125	3413	4	25	
Selenium	8.862	0.47	9.414	0.7589	86.1	75-125	8.236	7.33	25	
Silver	8.142	0.47	9.414	0.04949	86	75-125	7.989	1.89	25	
Uranium	8.356	0.47	9.414	0.4497	84	75-125	8.144	2.57	25	
Zinc	39.15	0.47	9.414	30	97.2	75-125	39.14	0.0385	25	

MSD	Sample ID: 1302079-01CMS	D				Units: mg/	Kg	Analys	is Date: 2/	7/2013 03	:40 PM
Client ID: MW-117 (1)		Run II	Run ID: ICPMS05_130207A			SeqNo: 310	5769	Prep Date: 2/5/2013		DF: 2	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron		42.5	4.7	47.07	6.71	8 76	75-125	44.25	4.05	25	
Sodium		1054	94	941.4	257.	4 84.7	75-125	1077	2.08	25	

Note:

Client: Navajo Refining Company

Work Order: 1302079

Project: RO Discharge Sampling

Batch ID: 67	7584	Instrument ID ICPMS05		Method	: SW602	20						
DUP	Sample ID:	1302079-01CDUP				ι	Jnits: mg/	Kg	Analysi	s Date: 2	/6/2013 05	:20 PN
Client ID: M	W-117 (1)	Run I	D: ICPMS	05_130206A		Se	qNo: 310	4263	Prep Date: 2/5/2	2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Arsenic		3.417	0.48	0		0	0	0-0	3.675	7.25	25	
Barium		104.4	0.48	0		0	0	0-0	140.7	29.6		R
Cadmium		0.2602	0.48	0		0	0	0-0	0.2899	0		J
Chromium		11.21	0.48	0		0	0	0-0	11.93	6.26		
Cobalt		4.016	0.48	0		0	0	0-0	4.223	5.03	25	
Copper		7.396	0.48	0		0	0	0-0	7.518	1.64	25	
Iron		7861	48	0		0	0	0-0	8371	6.29	25	
Lead		8.881	0.48	0		0	0	0-0	9.213	3.66	25	
Molybdenun	n	0.6964	0.48	0		0	0	0-0	0.782	11.6	25	
Nickel		8.596	0.48	0		0	0	0-0	8.837	2.76	25	
Potassium		2446	48	0		0	0	0-0	2567	4.83	25	
Selenium		0.8408	0.48	0		0	0	0-0	0.7589	10.2	25	
Silver		U	0.48	0		0	0	0-0	0.04949	0	25	
Uranium		U	0.48	0		0	0		0.4497	0	25	
Zinc		27.76	0.48	0		0	0	0-0	30	7.75	25	
DUP	Sample ID:	1302079-01CDUP				L	Jnits: mg/	Kg	Analysi	s Date: 2	/6/2013 06	:38 PI
Client ID: M	W-117 (1)	Run I	D: ICPMS	05_130206A		Se	qNo: 310	4419	Prep Date: 2/5/2	2013	DF: 10	0
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Aluminum		9534	96	0		0	0	0-0	11780	21.1	25	
Calcium		58170	4,800	0		0	0	0-0	64880	10.9		
Manganese		291.2	48	0		0	0	0-0	317.5	8.63		
DUP	Sample ID:	1302079-01CDUP				l	Jnits: mg/	Kg	Analysi	s Date: 2	7/2013 03	:35 P
Client ID: M	W-117 (1)	Run I	D: ICPMS	05_130207A		Se	qNo: 310	5767	Prep Date: 2/5/2	2013	DF: 2	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Boron		5.198	4.8	0		0	0	0-0	6.718	25.5	25	R
Sodium		236.7	96	0		0	0	0-0	257.4	8.37		11
The followi	ng samples	were analyzed in this batch:		302079-01C 302079-09A			79-03A 79-12A		02079-06A 02079-15C			

Client: Navajo Refining Company

Work Order: 1302079

Project: RO Discharge Sampling

Batch ID: 67	7586 Ins	trument ID HG02		Method	: SW747	1A					
MBLK	Sample ID: GBLI	KS2-020513-67586				Units: µg	/Kg	Analysis D	ate: 2 /	/5/2013 05	:08 PN
Client ID:		Run I	D: HG02 _	130205A		SeqNo: 31	02385	Prep Date: 2/5/201	3	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value %	RPD	RPD Limit	Qua
Mercury		U	3.3								
LCS	Sample ID: GLCS	SS2-020513-67586				Units: µg	/Kg	Analysis D	ate: 2 /	/5/2013 05	:10 PN
Client ID:		Run I	D: HG02 _	130205A		SeqNo: 31	02386	Prep Date: 2/5/201	3	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value %	RPD	RPD Limit	Qua
Mercury		342.7	3.3	333.3		0 103	85-115	0			
MS	Sample ID: 1302	097-02AMS				Units: µg	/Kg	Analysis D	ate: 2/	/5/2013 05	:16 PI
Client ID:		Run II	D: HG02 _	130205A		SeqNo: 31	02389	Prep Date: 2/5/201	3	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value %	RPD	RPD Limit	Qua
Mercury		318.7	3.4	344.1	2.74	13 91.8	85-115	0			
MSD	Sample ID: 1302	097-02AMSD				Units: µg	/Kg	Analysis D	ate: 2 /	/5/2013 05	:18 PN
Client ID:		Run I	D: HG02 _	130205A		SeqNo: 31	02390	Prep Date: 2/5/201	3	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value %	RPD	RPD Limit	Qua
Mercury		311.1	3.4	336.7	2.74	13 91.6	85-115	318.7	2.39	20	
DUP	Sample ID: 1302	097-02ADUP				Units: µg	/Kg	Analysis D	ate: 2/	/5/2013 05	:14 PN
Client ID:		Run I	D: HG02 _	130205A		SeqNo: 31	02388	Prep Date: 2/5/201	3	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value %	RPD	RPD Limit	Qua
Mercury		3.425	3.5	0		0 0		2.743	0	20	J
The followi	ng samples were a	nnalyzed in this batch:		302079-01C 302079-09A		02079-03A 02079-12A		802079-06A 802079-15C			

Client: Navajo Refining Company

Work Order: 1302079

Project: RO Discharge Sampling

Batch ID: 67581 In	nstrument ID SV-4		Metho	d: SW827	0						
MBLK Sample ID: SB	LKS1-130205-67581				l	Jnits: µg/l	(g	Analys	sis Date: 2	2/5/2013 01	:55 PM
Client ID:	Run	ID: SV-4_1	30205B		Se	qNo: 310 :	2442	Prep Date: 2/5	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	U	6.6									
2-Methylnaphthalene	U	6.6									
Benzo(a)pyrene	U	6.6									
Naphthalene	U	6.6									
Surr: 2,4,6-Tribromopheno	115.2	6.6	166.7		0	69.1	36-126	()		
Surr: 2-Fluorobiphenyl	135.8	6.6	166.7		0	81.5	43-125	()		
Surr: 2-Fluorophenol	116.8	6.6	166.7		0	70.1	37-125	()		
Surr: 4-Terphenyl-d14	161.5	6.6	166.7		0	96.9	32-125	()		
Surr: Nitrobenzene-d5	129.6	6.6	166.7		0	77.7	37-125	()		
Surr: Phenol-d6	120.6	6.6	166.7		0	72.4	40-125	()		
LCS Sample ID: SL	CSS1-130205-67581				ι	Jnits: µg/l	(g	Analys	sis Date: 2	2/5/2013 02	2:15 PM
Client ID:	Run	ID: SV-4_1	30205B		Se	qNo: 310	2443	Prep Date: 2/5	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	152.5	6.6	166.7		0	91.5	50-120	()		
2-Methylnaphthalene	153.8	6.6	166.7		0	92.3	50-120	()		
Benzo(a)pyrene	136.8	6.6	166.7		0	82.1	50-130	()		
Naphthalene	149.2	6.6	166.7		0	89.5	50-125	()		
Surr: 2,4,6-Tribromophenoi	142.1	6.6	166.7		0	85.3	36-126	()		
Surr: 2-Fluorobiphenyl	150.5	6.6	166.7		0	90.3	43-125	()		
Surr: 2-Fluorophenol	117.9	6.6	166.7		0	70.8	37-125	()		
Surr: 4-Terphenyl-d14	170.9	6.6	166.7		0	103	32-125	()		
Surr: Nitrobenzene-d5	136.3	6.6	166.7		0	81.8	37-125	()		
Surr: Phenol-d6	120.3	6.6	166.7		0	72.2	40-125	C			

Client: Navajo Refining Company

Work Order: 1302079

Project: RO Discharge Sampling

Batch ID: 67581 Instrumen	nt ID SV-4		Metho	d: SW8270						
MS Sample ID: 1302050-00	6CMS			l	Jnits: µg/k	(g	Analysi	s Date: 2/	5/2013 05	:39 PN
Client ID:	Run II): SV-4_1	30205B	Se	eqNo: 310 2	2445	Prep Date: 2/5/2	2013	DF: 10	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	4344	66	166.3	1316	1820	50-120	0			SEO
2-Methylnaphthalene	5004	66	166.3	1528	2090	50-120	0			SEO
Benzo(a)pyrene	123.5	66	166.3	2.558	72.8	50-130	0			
Naphthalene	147.1	66	166.3	0	88.5	50-125	0			
Surr: 2,4,6-Tribromophenol	102.1	66	166.3	0	61.4	36-126	0			
Surr: 2-Fluorobiphenyl	176.2	66	166.3	0	106	43-125	0			
Surr: 2-Fluorophenol	89.44	66	166.3	0	53.8	37-125	0			
Surr: 4-Terphenyl-d14	126.1	66	166.3	0	75.9	32-125	0			
Surr: Nitrobenzene-d5	131.6	66	166.3	0	79.1	37-125	0			
Surr: Phenol-d6	101.7	66	166.3	0	61.2	40-125	0			
				Ū	01.2		-			
MSD Sample ID: 1302050-06	6CMSD				Jnits: µg/k		Analysi	s Date: 2/	5/2013 05	:59 PN
): SV-4 _1		l		ζg	Analysi Prep Date: 2/5/2		5/2013 05 DF: 10	
MSD Sample ID: 1302050-00				l	Jnits: µg/k	ζg	•			
MSD Sample ID: 1302050-06 Client ID:				l Se	Jnits: µg/k	(g 2446	Prep Date: 2/5/2		DF: 10	
MSD Sample ID: 1302050-00	Run II): SV-4 _1	30205B	SPK Ref	Jnits: µg/k eqNo: 3102	(g 2446 Control	Prep Date: 2/5/2	2013	DF: 10 RPD	
MSD Sample ID: 1302050-06 Client ID: Analyte	Run II Result): SV-4_1 : PQL	30205B SPK Val	SPK Ref Value	Jnits: µg/k eqNo: 310 2 %REC	Kg 2446 Control Limit	Prep Date: 2/5/ 2 RPD Ref Value	%RPD	DF: 10 RPD Limit	Qual
MSD Sample ID: 1302050-06 Client ID: Analyte 1-Methylnaphthalene	Run IE Result 4603	PQL 66	30205B SPK Val 166.2	SPK Ref Value	Jnits: μg/keqNo: 3102 %REC 1980	Control Limit	Prep Date: 2/5/ 2 RPD Ref Value	2013 %RPD 5.78	DF: 10 RPD Limit	Qual
MSD Sample ID: 1302050-06 Client ID: Analyte 1-Methylnaphthalene 2-Methylnaphthalene	Run II Result 4603 5426	PQL 66 66	30205B SPK Val 166.2 166.2	SPK Ref Value	Jnits: μg/F eqNo: 3102 %REC 1980 2350	Control Limit 50-120 50-120	Prep Date: 2/5/2 RPD Ref Value 4344 5004	%RPD 5.78 8.09	DF: 10 RPD Limit 30 30	Qua SEC
MSD Sample ID: 1302050-06 Client ID: Analyte 1-Methylnaphthalene 2-Methylnaphthalene Benzo(a)pyrene	Run IE Result 4603 5426 104.2	PQL 66 66 66	30205B SPK Val 166.2 166.2 166.2	SPK Ref Value 1316 1528 2.558	Jnits: μg/keqNo: 3102 %REC 1980 2350 61.2	Control Limit 50-120 50-120 50-130	Prep Date: 2/5/ 2 RPD Ref Value 4344 5004 123.5	%RPD 5.78 8.09 17	DF: 10 RPD Limit 30 30 30	Qua SEC
MSD Sample ID: 1302050-06 Client ID: Analyte 1-Methylnaphthalene 2-Methylnaphthalene Benzo(a)pyrene Naphthalene	Result 4603 5426 104.2 181.7	PQL 66 66 66 66	30205B SPK Val 166.2 166.2 166.2 166.2	SPK Ref Value 1316 1528 2.558	Units: μg/keqNo: 3102 %REC 1980 2350 61.2 109	Control Limit 50-120 50-120 50-130 50-125	Prep Date: 2/5/2 RPD Ref Value 4344 5004 123.5 147.1	%RPD 5.78 8.09 17 21.1	DF: 10 RPD Limit 30 30 30 30	Qua SEC
MSD Sample ID: 1302050-06 Client ID: Analyte 1-Methylnaphthalene 2-Methylnaphthalene Benzo(a)pyrene Naphthalene Surr: 2,4,6-Tribromophenol	Result 4603 5426 104.2 181.7 113	PQL 66 66 66 66 66	30205B SPK Val 166.2 166.2 166.2 166.2 166.2	SPK Ref Value 1316 1528 2.558 0 0	Jnits: μg/keqNo: 3102 %REC 1980 2350 61.2 109 68	Control Limit 50-120 50-120 50-130 50-125 36-126	Prep Date: 2/5/2 RPD Ref Value 4344 5004 123.5 147.1 102.1	%RPD 5.78 8.09 17 21.1 10.1	DF: 10 RPD Limit 30 30 30 30 30 30	Qua SEC
MSD Sample ID: 1302050-06 Client ID: Analyte 1-Methylnaphthalene 2-Methylnaphthalene Benzo(a)pyrene Naphthalene Surr: 2,4,6-Tribromophenol Surr: 2-Fluorobiphenyl	Result 4603 5426 104.2 181.7 113 171.2	PQL 66 66 66 66 66	30205B SPK Val 166.2 166.2 166.2 166.2 166.2 166.2	SPK Ref Value 1316 1528 2.558 0 0 0	Points: μg/k eqNo: 3102 %REC 1980 2350 61.2 109 68 103	Control Limit 50-120 50-120 50-130 50-125 36-126 43-125	Prep Date: 2/5/2 RPD Ref Value 4344 5004 123.5 147.1 102.1 176.2	%RPD 5.78 8.09 17 21.1 10.1 2.92	DF: 10 RPD Limit 30 30 30 30 30 30 30	Qua SEC
MSD Sample ID: 1302050-06 Client ID: Analyte 1-Methylnaphthalene 2-Methylnaphthalene Benzo(a)pyrene Naphthalene Surr: 2,4,6-Tribromophenol Surr: 2-Fluorobiphenyl Surr: 2-Fluorophenol	Result 4603 5426 104.2 181.7 113 171.2 87.26	PQL 66 66 66 66 66 66	30205B SPK Val 166.2 166.2 166.2 166.2 166.2 166.2 166.2	SPK Ref Value 1316 1528 2.558 0 0 0	Points: μg/keqNo: 3102 %REC 1980 2350 61.2 109 68 103 52.5	Control Limit 50-120 50-120 50-125 36-125 36-126 43-125 37-125	Prep Date: 2/5/2 RPD Ref Value 4344 5004 123.5 147.1 102.1 176.2 89.44	%RPD 5.78 8.09 17 21.1 10.1 2.92 2.47	DF: 10 RPD Limit 30 30 30 30 30 30 30 30 30 30 30	Qua SEC SEC

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

The following samples were analyzed in this batch:

Note:

1302079-01D

1302079-15D

Client: Navajo Refining Company

Work Order: 1302079

Project: RO Discharge Sampling

Batch ID: R142091	Instrument ID VOA5		Metho	d: SW82 6	60					
MBLK Sample ID: V	BLKS1-020413-R142091				Units: µg/l	K g	Analy	/sis Date: 2	/4/2013 0	2:20 PM
Client ID:	Run ID): VOA5_	130204A		SeqNo: 310	1239	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	U	5.0								
1,1,2,2-Tetrachloroethane	U	5.0								
1,1,2-Trichloroethane	U	5.0								
1,1-Dichloroethane	U	5.0								
1,1-Dichloroethene	U	5.0								
1,2-Dibromoethane	U	5.0								
1,2-Dichloroethane	U	5.0								
Benzene	U	5.0								
Carbon tetrachloride	U	5.0								
Chloroform	U	5.0								
Ethylbenzene	U	5.0								
Methylene chloride	U	10								
Tetrachloroethene	U	5.0								
Toluene	U	5.0								
Trichloroethene	U	5.0								
Vinyl chloride	U	2.0								
Xylenes, Total	U	15								
Surr: 1,2-Dichloroethane	-d4 43.64	0	50		0 87.3	70-128		0		
Surr: 4-Bromofluorobenz	ene 46.3	0	50		0 92.6	73-126		0		
Surr: Dibromofluorometh	ane 48.2	0	50		0 96.4	71-128		0		
Surr: Toluene-d8	51.1	0	50		0 102	73-127	•	0		

Client: Navajo Refining Company

Work Order: 1302079

Project: RO Discharge Sampling

Batch ID: R142091	Instrument ID VOA5		Metho	d: SW826 0	0						
LCS Sample ID: V	/LCSS1-020413-R142091				U	Inits: µg/k	(g	Analys	sis Date: 2	/4/2013 1	2:48 PM
Client ID:	Run II	D: VOA5_	130204A		Se	qNo: 310 ′	1238	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	56.36	5.0	50		0	113	79-124	(1		
1,1,2,2-Tetrachloroethane	55.2	5.0	50		0	110	75-123	(ı		
1,1,2-Trichloroethane	60.76	5.0	50		0	122	79-120	(1		S
1,1-Dichloroethane	57.8	5.0	50		0	116	75-124	(
1,1-Dichloroethene	58.39	5.0	50		0	117	80-122	(1		
1,2-Dibromoethane	55.86	5.0	50		0	112	79-120	(
1,2-Dichloroethane	53.68	5.0	50		0	107	73-121	(1		
Benzene	56.68	5.0	50		0	113	79-120	(
Carbon tetrachloride	54.78	5.0	50		0	110	74-126	(1		
Chloroform	51.07	5.0	50		0	102	78-120	(
Ethylbenzene	59.14	5.0	50		0	118	80-122	(1		
Methylene chloride	57.27	10	50		0	115	70-123	(
Tetrachloroethene	55.19	5.0	50		0	110	80-121	(1		
Toluene	59.27	5.0	50		0	119	79-120	(1		
Trichloroethene	59.99	5.0	50		0	120	80-121	(1		
Vinyl chloride	58.95	2.0	50		0	118	76-126	(1		
Xylenes, Total	169.3	15	150		0	113	80-120	(1		
Surr: 1,2-Dichloroethane	e-d4 45.09	0	50		0	90.2	70-128	(ı		
Surr: 4-Bromofluorobenz	zene 48.08	0	50		0	96.2	73-126	(1		
Surr: Dibromofluorometh	nane 49.73	0	50		0	99.5	71-128	(ı		
Surr: Toluene-d8	50.18	0	50		0	100	73-127	(1		

Client: Navajo Refining Company

Work Order: 1302079

Project: RO Discharge Sampling

Batch ID: R142091	Instrument ID VOA5		Method	: SW8260						
MS Sample ID: 1	302079-15AMS				Units: µg/l	K g	Analys	sis Date: 2	/4/2013 0	4:14 PM
Client ID: MW-117 (25)	Ru	ın ID: VOA5 _	130204A	;	SeqNo: 310	1244	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	45.09	5.0	50	C	90.2	79-124	0)		
1,1,2,2-Tetrachloroethane	40.5	5.0	50	(81	75-123	0)		
1,1,2-Trichloroethane	47.23	5.0	50	(94.5	79-120	0)		
1,1-Dichloroethane	43.45	5.0	50	(86.9	75-124	0)		
1,1-Dichloroethene	51.45	5.0	50	(103	80-122	0)		
1,2-Dibromoethane	42.06	5.0	50	(84.1	79-120	0)		
1,2-Dichloroethane	38.83	5.0	50	(77.7	73-121	0)		
Benzene	44.11	5.0	50	(88.2	79-120	0)		
Carbon tetrachloride	42.94	5.0	50	(85.9	74-126	0)		
Chloroform	42.73	5.0	50	(85.5	78-120	0)		
Ethylbenzene	47.73	5.0	50	(95.5	80-122	0)		
Methylene chloride	51.41	10	50	5.438	92	70-123	0)		
Tetrachloroethene	45.2	5.0	50	(90.4	80-121	0)		
Toluene	46.35	5.0	50	(92.7	79-120	C)		
Trichloroethene	49	5.0	50	C	98	80-121	0)		
Vinyl chloride	53.2	2.0	50	(106	76-126	C)		
Xylenes, Total	136.9	15	150	(91.3	80-120	O)		
Surr: 1,2-Dichloroethane	-d4 41.91	0	50	(83.8	70-128	0	1		
Surr: 4-Bromofluorobenz	ene 47.54	0	50	(95.1	73-126	O)		
Surr: Dibromofluorometh	ane 48.39	0	50	(96.8	71-128	0	1		
Surr: Toluene-d8	46.26	0	50	C	92.5	73-127	0)		

Client: Navajo Refining Company

Work Order: 1302079

Project: RO Discharge Sampling

Batch ID: R142091	Instrument ID VOA5	Method: SW8260
-------------------	--------------------	----------------

MSD Sample ID: 1302079-15	SAMSD			ı	Units: µg/l	(g	Analysi	is Date: 2/	4/2013 04	:37 PN
Client ID: MW-117 (25)	Run II	D: VOA5 _	130204A	Se	eqNo: 310	1245	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
1,1,1-Trichloroethane	58.61	5.0	50	0	117	79-124	45.09	26.1	30	
1,1,2,2-Tetrachloroethane	55.12	5.0	50	0	110	75-123	40.5	30.6	30	R
1,1,2-Trichloroethane	59.39	5.0	50	0	119	79-120	47.23	22.8	30	
1,1-Dichloroethane	60.52	5.0	50	0	121	75-124	43.45	32.8	30	R
1,1-Dichloroethene	59.58	5.0	50	0	119	80-122	51.45	14.6	30	
1,2-Dibromoethane	51.67	5.0	50	0	103	79-120	42.06	20.5	30	
1,2-Dichloroethane	50.73	5.0	50	0	101	73-121	38.83	26.6	30	
Benzene	56.02	5.0	50	0	112	79-120	44.11	23.8	30	
Carbon tetrachloride	47.91	5.0	50	0	95.8	74-126	42.94	10.9	30	
Chloroform	54.38	5.0	50	0	109	78-120	42.73	24	30	
Ethylbenzene	59.74	5.0	50	0	119	80-122	47.73	22.3	30	
Methylene chloride	67.26	10	50	5.438	124	70-123	51.41	26.7	30	S
Tetrachloroethene	71.23	5.0	50	0	142	80-121	45.2	44.7	30	SR
Toluene	60.02	5.0	50	0	120	79-120	46.35	25.7	30	S
Trichloroethene	61.37	5.0	50	0	123	80-121	49	22.4	30	S
Vinyl chloride	65.39	2.0	50	0	131	76-126	53.2	20.6	30	S
Xylenes, Total	171.4	15	150	0	114	80-120	136.9	22.4	30	
Surr: 1,2-Dichloroethane-d4	51.28	0	50	0	103	70-128	41.91	20.1	30	
Surr: 4-Bromofluorobenzene	49.44	0	50	0	98.9	73-126	47.54	3.91	30	
Surr: Dibromofluoromethane	51.14	0	50	0	102	71-128	48.39	5.54	30	
Surr: Toluene-d8	49.69	0	50	0	99.4	73-127	46.26	7.15	30	

The following samples were analyzed in this batch:

Note:

1302079-01A 1302079-15A

Client: Navajo Refining Company

Work Order: 1302079

Project: RO Discharge Sampling

Batch ID: R142161	Instrument ID VOA4		Metho	d: SW82 6	60					
MBLK Sample ID: V	BLKW-130205-R142161				Units: μ ί	ı/L	Anal	ysis Date: 2	/5/2013 1	0:49 AM
Client ID:	Run I	D: VOA4 _	130205A		SeqNo: 31	02121	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%RE	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	U	1.0								
1,1,2,2-Tetrachloroethane	U	1.0								
1,1,2-Trichloroethane	U	1.0								
1,1-Dichloroethane	U	1.0								
1,1-Dichloroethene	U	1.0								
1,2-Dibromoethane	U	1.0								
1,2-Dichloroethane	U	1.0								
Benzene	U	1.0								
Carbon tetrachloride	U	1.0								
Chloroform	U	1.0								
Ethylbenzene	U	1.0								
Methylene chloride	U	2.0								
Tetrachloroethene	U	1.0								
Toluene	U	1.0								
Trichloroethene	U	1.0								
Vinyl chloride	U	1.0								
Xylenes, Total	U	1.0								
Surr: 1,2-Dichloroethane-	-d4 47.14	1.0	50		0 94.3	3 71-125	5	0		
Surr: 4-Bromofluorobenze	ene 47.73	1.0	50		0 95.5	70-125	,)	0		
Surr: Dibromofluorometh	ane 50.94	1.0	50		0 102	? 74-125	5	0		
Surr: Toluene-d8	49.25	1.0	50		0 98.5	78-123	}	0		

Client: Navajo Refining Company

Work Order: 1302079

Project: RO Discharge Sampling

Batch ID: R142161	Instrument ID VOA4		Method	: SW8260)						
LCS Sample ID: Y	VLCSW-130205-R142161				Uı	nits: µg/L		Analy	sis Date: 2	2/5/2013 0	9:37 AM
Client ID:	Run	ID: VOA4_	130205A		Sec	No: 310 2	2119	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	55.03	1.0	50	(0	110	80-120		0		
1,1,2,2-Tetrachloroethane	45.4	1.0	50	(0	90.8	74-123		0		
1,1,2-Trichloroethane	48.9	1.0	50	(0	97.8	80-120		0		
1,1-Dichloroethane	46.19	1.0	50	(0	92.4	80-120		0		
1,1-Dichloroethene	53.85	1.0	50	(0	108	80-120		0		
1,2-Dibromoethane	52.93	1.0	50	(0	106	80-120		0		
1,2-Dichloroethane	48.97	1.0	50	(0	97.9	79-120		0		
Benzene	48.6	1.0	50	(0	97.2	80-120		0		
Carbon tetrachloride	59.17	1.0	50	(0	118	79-120		0		
Chloroform	47.16	1.0	50	(0	94.3	80-120		0		
Ethylbenzene	48.68	1.0	50	(0	97.4	80-120		0		
Methylene chloride	47.36	2.0	50	(0	94.7	75-125		0		
Tetrachloroethene	52.99	1.0	50	(0	106	80-120		0		
Toluene	47.82	1.0	50	(0	95.6	80-121		0		
Trichloroethene	54.22	1.0	50	(0	108	80-120		0		
Vinyl chloride	50.08	1.0	50	(0	100	75-125		0		
Xylenes, Total	142.4	1.0	150	(0	94.9	80-124		0		
Surr: 1,2-Dichloroethane	e-d4 44.33	1.0	50	(0	88.7	71-125		0		
Surr: 4-Bromofluorobenz	zene 50.11	1.0	50	(0	100	70-125		0		
Surr: Dibromofluorometh	hane 49.8	1.0	50	(0	99.6	74-125		0		
Surr: Toluene-d8	48.26	1.0	50	(0	96.5	78-123		0		

Client: Navajo Refining Company

Work Order: 1302079

Surr: 1,2-Dichloroethane-d4

Surr: 4-Bromofluorobenzene

Surr: Dibromofluoromethane

Surr: Toluene-d8

Note:

Project: RO Discharge Sampling

Batch ID: R142161	Instrument ID VOA4		Method	: SW826	0						
LCSD Sample ID: V	VLCSDW-130205-R142161				Į	Jnits: µg/L	-	Analysi	s Date: 2/	5/2013 10	:01 AM
Client ID:	Run ID:	VOA4_	130205A		Se	eqNo: 310	2120	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	52.78	1.0	50		0	106	80-120	55.03	4.17	20	
1,1,2,2-Tetrachloroethane	44.75	1.0	50		0	89.5	74-123	45.4	1.45	20	
1,1,2-Trichloroethane	48.98	1.0	50		0	98	80-120	48.9	0.168	20	
1,1-Dichloroethane	44.95	1.0	50		0	89.9	80-120	46.19	2.71	20	
1,1-Dichloroethene	51.05	1.0	50		0	102	80-120	53.85	5.34	20	
1,2-Dibromoethane	52.56	1.0	50		0	105	80-120	52.93	0.693	20	
1,2-Dichloroethane	48.06	1.0	50		0	96.1	79-120	48.97	1.89	20	
Benzene	46.95	1.0	50		0	93.9	80-120	48.6	3.45	20	
Carbon tetrachloride	57.13	1.0	50		0	114	79-120	59.17	3.51	20	
Chloroform	45.5	1.0	50		0	91	80-120	47.16	3.58	20	
Ethylbenzene	47.06	1.0	50		0	94.1	80-120	48.68	3.38	20	
Methylene chloride	46.64	2.0	50		0	93.3	75-125	47.36	1.54	20	
Tetrachloroethene	52.04	1.0	50		0	104	80-120	52.99	1.82	20	
Toluene	47	1.0	50		0	94	80-121	47.82	1.73	20	
Trichloroethene	52.61	1.0	50		0	105	80-120	54.22	3.01	20	
Vinyl chloride	46.94	1.0	50		0	93.9	75-125	50.08	6.46	20	
Xylenes, Total	140.3	1.0	150		0	93.5	80-124	142.4	1.5	20	

50

50

50

50

1.0

1.0

1.0

1.0

0

0

0

0

88.2

102

97.2

96.3

71-125

70-125

74-125

78-123

44.33

50.11

49.8

48.26

0.493

2.03

2.42

0.187

20

20

20

20

44.11

51.13

48.61

48.17

Client: Navajo Refining Company

Work Order: 1302079

Surr: Toluene-d8

Note:

Project: RO Discharge Sampling

Batch ID: R142161	Instrument ID VOA4		Method	: SW8260	0						
MS Sample ID: 1	302056-09AMS				Un	nits: µg/L		Analys	sis Date: 2	/5/2013 1	1:14 AM
Client ID:	Rur	n ID: VOA4 _	130205A		Seql	No: 310 2	2122	Prep Date:		DF: 1 (0
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	537.7	10	500		0	108	80-120	C)		
1,1,2,2-Tetrachloroethane	439.8	10	500		0	88	74-123	0)		
1,1,2-Trichloroethane	477.2	10	500		0	95.4	80-120	0)		
1,1-Dichloroethane	459.9	10	500		0	92	80-120	O)		
1,1-Dichloroethene	525.1	10	500	(0	105	80-120	C)		
1,2-Dibromoethane	510.6	10	500		0	102	80-120	0)		
1,2-Dichloroethane	487.4	10	500	(0	97.5	79-120	C)		
Benzene	485.1	10	500		0	97	80-120	0)		
Carbon tetrachloride	581.9	10	500		0	116	79-120	O	1		
Chloroform	469.7	10	500		0	93.9	80-120	0)		
Ethylbenzene	475	10	500	-	0	95	80-120	C)		
Methylene chloride	473.5	20	500		0	94.7	75-125	0)		
Tetrachloroethene	524.4	10	500	-	0	105	80-120	C)		
Toluene	476.7	10	500		0	95.3	80-121	0)		
Trichloroethene	544.7	10	500	-	0	109	80-120	0)		
Vinyl chloride	495.6	10	500		0	99.1	75-125	0)		
Xylenes, Total	1405	10	1500	-	0	93.7	80-124	0)		
Surr: 1,2-Dichloroethane	-d4 449.3	10	500		0	89.9	71-125	0)		
Surr: 4-Bromofluorobenz	ene 505	10	500	-	0	101	70-125	0)		
Surr: Dibromofluorometh	ane 495.3	10	500		0	99.1	74-125	0)		

482.7

10

500

0

96.5

78-123

0

Client: Navajo Refining Company

Work Order: 1302079

Project: RO Discharge Sampling

Batch ID: R142161	Instrument ID VOA4	Method: SW8260
--------------------------	--------------------	----------------

MSD Sample ID: 1302056-09	PAMSD				Units: µg/I	_	Analysis Date: 2/5/2013 11:38 AM					
Client ID:	Run II	D: VOA4 _	130205A	Se	eqNo: 310	2123	Prep Date:		DF: 10			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua		
1,1,1-Trichloroethane	520.1	10	500	0	104	80-120	537.7	3.31	20			
1,1,2,2-Tetrachloroethane	434.1	10	500	0	86.8	74-123	439.8	1.3	20			
1,1,2-Trichloroethane	469.5	10	500	0	93.9	80-120	477.2	1.62	20			
1,1-Dichloroethane	440.8	10	500	0	88.2	80-120	459.9	4.23	20			
1,1-Dichloroethene	509.2	10	500	0	102	80-120	525.1	3.07	20			
1,2-Dibromoethane	506.6	10	500	0	101	80-120	510.6	0.775	20			
1,2-Dichloroethane	478	10	500	0	95.6	79-120	487.4	1.96	20			
Benzene	470	10	500	0	94	80-120	485.1	3.17	20			
Carbon tetrachloride	560.3	10	500	0	112	79-120	581.9	3.77	20			
Chloroform	451.7	10	500	0	90.3	80-120	469.7	3.89	20			
Ethylbenzene	462.6	10	500	0	92.5	80-120	475	2.64	20			
Methylene chloride	460.8	20	500	0	92.2	75-125	473.5	2.72	20			
Tetrachloroethene	504.2	10	500	0	101	80-120	524.4	3.92	20			
Toluene	462.7	10	500	0	92.5	80-121	476.7	2.98	20			
Trichloroethene	516.9	10	500	0	103	80-120	544.7	5.23	20			
Vinyl chloride	471	10	500	0	94.2	75-125	495.6	5.1	20			
Xylenes, Total	1361	10	1500	0	90.7	80-124	1405	3.17	20			
Surr: 1,2-Dichloroethane-d4	442.1	10	500	0	88.4	71-125	449.3	1.62	20			
Surr: 4-Bromofluorobenzene	501	10	500	0	100	70-125	505	0.777	20			
Surr: Dibromofluoromethane	494.6	10	500	0	98.9	74-125	495.3	0.14	20			
Surr: Toluene-d8	477.4	10	500	0	95.5	78-123	482.7	1.1	20			

The following samples were analyzed in this batch:

Note:

1302079-16A

Client: Navajo Refining Company

Work Order: 1302079

Project: RO Discharge Sampling

Batch ID: 676	Instrument ID UV-2450		Method	d: SW901	4	(Dissolv	e)		
MBLK	Sample ID: WBLKS1-020813-67667				Units: mg	/Kg	Analysis Date	e: 2/8/2013 05	5:30 PM
Client ID:	Run II	D: UV-245	0_130208F		SeqNo: 310	7315	Prep Date: 2/8/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value %RF	RPD D Limit	Qual
Cyanide	U	2.0							
LCS	Sample ID: WLCSS1-020813-67667				Units: mg	/Kg	Analysis Date	e: 2/8/2013 05	5:30 PN
Client ID:	Run II	D: UV-245	0_130208F		SeqNo: 310	7316	Prep Date: 2/8/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value %RF	RPD D Limit	Qual
Cyanide	9.65	2.0	10		0 96.5	80-120	0		
LCSD	Sample ID: WLCSDS1-020813-67667				Units: mg	/Kg	Analysis Date	e: 2/8/2013 0 5	5:30 PM
Client ID:	Run II	D: UV-245	0_130208F		SeqNo: 310	7332	Prep Date: 2/8/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value %RF	RPD Limit	Qual
Cyanide	9.35	2.0	10		0 93.5	80-120	9.65	3.16 30	
MS	Sample ID: 1302079-15CMS				Units: mg	/Kg	Analysis Date	e: 2/8/2013 05	5:30 PM
Client ID: MV	V-117 (25) Run II	D: UV-245	0_130208F		SeqNo: 310	7331	Prep Date: 2/8/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value %RF	RPD D Limit	Qual
Cyanide	8.287	1.9	9.364	0.3	52 84.7	75-125	0		
The followin	g samples were analyzed in this batch:		802079-01C 802079-09B		02079-03B 02079-12B		802079-06B 802079-15C		

Client: Navajo Refining Company

Work Order: 1302079

Project: RO Discharge Sampling

Batch ID: 67697	Instrument ID ICS2100		Method	: E300		((Dissolve)			
MBLK Sample ID:	WBLKS2-67697				Units	s: mg/	Kg	Analys	sis Date: 2	/7/2013 10	:08 PN
Client ID:	Run	ID: ICS210	0_130207B		SeqNo	o: 310 6	6617	Prep Date: 2/7	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%	REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	5.0									
Fluoride	U	1.0									
Nitrogen, Nitrate (As N)	U	1.0									
Nitrogen, Nitrite (As N)	U	1.0									
Sulfate	U	5.0									
Surr: Selenate (surr)	45.54	1.0	50		0	91.1	85-115	C)		
LCS Sample ID:	WLCSS2-67697				Units	s: mg/	Kg	Analys	sis Date: 2	/7/2013 10	:22 PN
Client ID:	Run	ID: ICS210	0_130207B		SeqNo	o: 310 6	6618	Prep Date: 2/7	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%	REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Chloride	208.6	5.0	200		0	104	90-110	C)		
Fluoride	36.01	1.0	40		0	90	90-110	C)		
Nitrogen, Nitrate (As N)	40.36	1.0	40		0	101	90-110	C)		
Nitrogen, Nitrite (As N)	43.96	1.0	40		0	110	90-110	C)		
Sulfate	194.8	5.0	200		0	97.4	90-110	C)		
Surr: Selenate (surr)	44.44	1.0	50		0	88.9	85-115	C)		
MS Sample ID:	1302079-15CMS				Units	s: mg/	Kg	Analys	sis Date: 2	/8/2013 12	:04 AN
Client ID: MW-117 (25)	Run	ID: ICS210	0_130207B		SeqNo	o: 310 6	6625	Prep Date: 2/7	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%	REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Chloride	128.1	5.0	99.77	20	.8	108	75-125	C)		
Fluoride	25.76	1.0	19.95	4.09	95	109	75-125	C)		
Nitrogen, Nitrate (As N)	18.89	1.0	19.95	0.447	73	92.4	75-125	C)		
Nitrogen, Nitrite (As N)	21.5	1.0	19.95		0	108	75-125	C)		
Sulfate	496.6	5.0	99.77	31	13	184	75-125	C)		S
Surr: Selenate (surr)	43.75	1.0	49.89		0	87.7	80-120	C)		

Client: Navajo Refining Company

Work Order: 1302079

Project: RO Discharge Sampling

QC BATCH REPORT

Batch ID: 67	697		Method	i: E300		(Dissolve	e)				
MSD	Sample ID:	1302079-15CMSD				Units: mg/	'Kg	Analys	is Date: 2/	8/2013 12	:19 AM
Client ID: MN	W-117 (25)	Rur	n ID: ICS210	0_130207B	;	SeqNo: 310	6626	Prep Date: 2/7/2	2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride		125	5.0	99.59	20.8	3 105	75-125	128.1	2.4	20	
Fluoride		24.56	1.0	19.92	4.095	103	75-125	25.76	4.77	20	
Nitrogen, Nit	trate (As N)	18.41	1.0	19.92	0.4473	90.2	75-125	18.89	2.53	20	
Nitrogen, Nit	trite (As N)	20.9	1.0	19.92	(105	75-125	21.5	2.81	20	
Sulfate		484.8	5.0	99.59	313	172	75-125	496.6	2.41	20	S
Surr: Sele	enate (surr)	44.19	1.0	49.8	(88.7	80-120	43.75	1	20	
The following	ng samples v	vere analyzed in this batcl		302079-01C 302079-09B		2079-03B 2079-12B		02079-06B 02079-15C			

Client: Navajo Refining Company

Work Order: 1302079

Project: RO Discharge Sampling

QC BATCH REPORT

Batch ID: R142287 Instrument ID Balance1			alance1		Method	d: SW355	0		(Dissolve	e)			
DUP	Sample ID:	1302079-15ADUF	•				U	nits: wt %	,)	Analysi	is Date: 2/	6/2013 03	3:40 PM
Client ID: N	Client ID: MW-117 (25)			Run ID: BALANCE1_130206C			SeqNo: 3104936			Prep Date:	DF: 1		
Analyte			Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Percent Mo	isture		24.04	0.010	0		0	0	0-0	24.71	2.76	20	
The follow	ing samples v	vere analyzed in t	this batch:	13 13 13	802079-01C 802079-04A 802079-07A 802079-10A 802079-13A	13 13 13	0207 0207 0207	79-02A 79-05A 79-08A 79-11A 79-14A	13 13 13	02079-03A 02079-06A 02079-09A 02079-12A 02079-15A			

Client: Navajo Refining Company

Work Order: 1302079

Project: RO Discharge Sampling

QC BATCH REPORT

Batch ID: R1	42356 Instrur		Method	d: SW3550		(Dissolve	e)				
DUP	Sample ID: 1302082	2-16ADUP				Units: wt	%	Analysi	is Date: 2/	7/2013 03	:15 PM
Client ID:		Run I	D: Balan	CE1_13020	7C	SeqNo: 31 (06553	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Percent Mois	sture	18.28	0.010	0	(0	0-0	18.79	2.77	20	

ALS Environmental Date: 13-Feb-13

Client: Navajo Refining Company **QUALIFIERS,** RO Discharge Sampling **Project:** ACRONYMS, UNITS

1302079 WorkOrder:

wt%

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
В	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
Н	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
Acronym	Description
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
Units Reported	Description
μg/Kg-dr	ry Micrograms per Kilogram - Dry weight corrected
mg/Kg-dı	ry Milligrams per Kilogram - Dry weight corrected
mg/L	Milligrams per Liter

Sample Receipt Checklist

Client Name:	NAVAJO REFINING			Da	te/Time	Received	d: <u>02-</u>	Feb-13	09:30		
Work Order:	<u>1302079</u>			Re	ceived b	y:	<u>RD</u>	<u>H</u>			
Checklist comp	leted by <u>Rishel D. Maran</u> eSignature	04	I-Feb-13 Date	Review	ed by:	Sonia	West ture				05-Feb-13 Date
Matrices: Carrier name:	SOIL FedEx										
Shipping contain	ner/cooler in good condition?		Yes 🛚		No 🗌	Not	Present				
Custody seals i	ntact on shipping container/coole	er?	Yes 🕨		No 🗌	Not	Present				
Custody seals i	ntact on sample bottles?		Yes [No \square	Not	Present	✓			
Chain of custoo	ly present?		Yes		No \square						
Chain of custoo	ly signed when relinquished and	received?	Yes 🖢		No \square						
Chain of custoo	ly agrees with sample labels?		Yes 🛚		No \square						
Samples in pro	per container/bottle?		Yes 🛚		No 🗌						
Sample contain	ers intact?		Yes 🖢		No 🗆						
Sufficient samp	le volume for indicated test?		Yes 🕟		No 🗌						
All samples rec	eived within holding time?		Yes 🖪		No 🗆						
Container/Tem	p Blank temperature in complian	ce?	Yes 🛚		No 🗆						
Temperature(s)	/Thermometer(s):		2.7C U/C	<u>}</u>			005				
Cooler(s)/Kit(s)	:		7034								
Date/Time sam	ple(s) sent to storage:		2/4/13 09	9:32							
Water - VOA vi	als have zero headspace?		Yes		No 🗆	No VOA	A vials sub	mitted	✓		
Water - pH acc	eptable upon receipt?		Yes [No \square	N/A	✓				
pH adjusted?			Yes		No 🗌	N/A	✓				
pH adjusted by			_								
Login Notes:	A Trip Blank sample was re for VOC 8260.	ceived but was not l	isted on th	e chain of	custody	The lal	boratory a	nalyzed	d this sa	mple_	- — — — -
Client Contacte	d:	Date Contacted:			Person	Contact	ed:				
Contacted By:		Regarding:									
Comments:											
CorrectiveActio	n:								c	DC D	200 1 of 1

(ALS)			
ii comma		%	

Chain of Custody Form

COC ID: 41201

1302079

NAVAJO REFINING: Navajo Refining Company

Project: RO Discharge Sampling

Enuironmental Customer Information	C	ALS Project Manager: Project Information														
Purchase Order	Project		omiation			A.	1050	2-1-1	Linere						1	<u> </u>
Work Order	Project N						<u>Voc</u>			- 1	7W	لتك	2 ک	<u>-ist</u>	-	
			0	Λ.			<u>allo</u>		BO 15						-	
Send Report To Robert Combs	bin 10 Con	1 1000	y's Ke	tioig	<u>C</u> 0	10000	<u> ono</u>	-		,					1	
	Invoice	Attn. (Solor	ect (s	1.4bz		10001	2 RO				,		6-6	M L	5+	
Address 501 East Hain	Ad	dress		₩.		1 1	10ta			•	(60i		70cc) KC	<u>RA</u>	<u>-8</u>
Congressed of Section 1997			East		^	17. 1. 1	_L <	<u>5</u> γα	<u> </u>	BZ	70B)	M	ù Gu	<u>يا ل</u> ر	<u>; s+</u>	
City/State/Zip Artesis, NM	City/Sta	te/Zip / /	esa, 1	1W	····	G			~~~				~~~~~		The state of the s	
Phone		Phone 575-	748-	673	3	H C	<u>~~</u>	ide	~st~	<u>Ani</u>	کمو				-	
Fax		Fax 575 -	746 -	5421		i Y	<u> 106</u>	+01	<u>. </u>							
e-Mail Address	e-Mail Ad	dress				JR	رناله	ہر							and or the second	
No. Sample Description	Date	Time	Matrix	Pres.	# Bottles	Α	В	С	D	E	F	G	н		J	Hold
1 Mw-117 (1)	1/31/13	0855	Soil	_	5	Х	*	Х	*	×	×		X	X	人	
2 MW-117 (3)	, i	0900	,	1	١									X	D440411/10	
3 MW-117(5)		O915			- 3					χ	75		X	x	IX	. "; ,
4 MW-117 (7)		1015			. \									X	A CONTRACTOR OF THE PERSON OF	
5 MW417 (9)		1000			i									Х	or reference of the	
6 MW-117 (10)		1515 1031			3					X	Z		X	X	X	
7 MW-117 (11)		1515			1									X	-	·
8 MW-117 (13)		1515)		1.				····	:				አ	- STATE OF THE STA	
9 MW-117 (15)		1520		<u> </u>	3	<u> </u>				_X	K,		X	XX	مز	
10 MW-117 (17)		1520	<u> </u>							·····				X	- CONTINUE OF THE PROPERTY OF	
Sampler(s): Please Print & Sign	Shipi	nent Method:		uired Tui STD 10 Wk	naround Days [Time:] 5 Wk t	ays)] 2 Wi	Other k Days		4 Hour	Res	sults Du	e Date:		
Relinquished by: Date:	Time:	Received by:	***************************************	:	:	Not					······································					
Refinguished by: Date:	Tima	Received An Labor	<u> </u>			le	Den	TA	T, ∇);550	Jued	Met	12 S	field	1-14	<u>sed</u>
Eric Segerson 21113	Time: 1,200	Veceived by Lapoi	###	21111	2 19	12/150	oler Ter	np.		1211	neck Bo Standa	x Belov	ν)			
Logged by (Laboratory): Date:	Time:	Checked by (Labor	albry);	-4	<u>ں ر</u>	Ť		ΗÉ				tu QC L+ Rav	v Data	H	-	
							Service Co					5 CLP-1			-	
Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaO	DH 5-Na2S2O3 6-NaHSO4 7-Other 8-4 degrees C 9-50					35			Otl	ier:					GARAGAGE	

ALS
Environmenta

Chain of Custody Form

Page _ 2_ of _ 2_

COC ID:

41214

Cincinnati, OH +1 513 733 5336

Everett, WA +1 425 356 2600

Holland, MI

+1 616 399 6070

□ Houston, TX +1 281 530 5656

Sait Lake City, UT +1 801 266 7700

Spring City, PA +1 610 948 4903

Fort Collins, CO +1 970 490 1511 Middletown, PA +1 717 944 5541

Tork, PA +1 717 505 5280

ALS Project Manager:								S. HORBITATION OF STATE	k Order	SOCIETY SERVICE		ダイク		1000
Customer Information		Project Infor	mation		Parameter/Method Request for Analysis					3				
Purchase Order	Project	Name ROD;	schage	Szydin	A	CC	(826	1 (Co	Jul -	Gu	<u>ا ل ل</u>	ist		
Work Order	Project No	umber 125%	23	, ,	B (<u> </u>	(81	OISH)				Annual Control of the	
Company Name Navajo Refining	Bill To Con	npany Navai	o Retin	โกร		>/?<		301571	\				A CONTRACTOR OF THE CONTRACTOR	
Send Report To Robert Crubs	Invoice	e Attn. Rober	+ Conb	3)	D c	780		DISH						
								(B2		M	W 6	ال کی	354	
Address	Ac	Idress 501	East	lain	F			tels L	~				-	
City/State/Zip	City/Sta	ate/Zip A Che	sia, NM		G		-		U	1 44 7			- was	
Phone			748-67		H C	~anic	1e +	Aniens	~	****				
Fax		Fax 575					1017							
e-Mail Address	e-Mail Ad	to the profession of the contract of the contr	<u> </u>		J	كحلن	<u></u>				•			
No. Sample Description	Date	Time	Matrix Pres.	# Bottles	Α	В	С	D E	F	G	н	ı ı	J	Hold
1 MW-117 (19)	1/31/13	1525	Seil -	1	N 20 20 10 12			- 1 1 101 UNA 101010	4		冕	Х	*	
2 /10-117 (20)		1575	\ \ \	3	}				X		X		K	
3 MW-117 (21)		1530		\	***************************************							\propto	Transcent of the second	
4 Mw-117(23)		1530		ł								Х	-	
5 MW-117(25)		1540		5	×	X	×	X X	X		×	X	X	
6	*												-	
7													-	
8		at the state of th											ļ	
(19)		tures established											-	
10 Sampler(s): Please Print & Sign	Ighin	ment Method:	Required To	urnaround	Time:			Other		L Ba	sults Du	Date:		
/14/)x=			STD 10 W] 5 Wk C	Days	· ∟i □ 2 Wk D		4 Hour	1103	Janes Dil	o vaic.	and a second	
Relipquished by: Date:	Time:	Received by:	:	-	Note				**********		<u> </u>	<u> </u>	. 1	<u> </u>
Eric Bergersen 2/11/	3 1200			·	vo	Day	TA	$T_i \sqrt{2}i$	<u>530/0</u>	ed /	Tetal-	5 Fie	(2)	Fi He
Relinquished by: Date:	Time:	Received by (Laborato	2/1/2	2 /200	٥٥ (۲)	c.er Ten	QC P	ackage: (C			ν)			A state
Logged by (Laboratory); Date:	Time:	Checked by (Laborato	W: 1415	<u>) UN</u>	<u>~</u>		-	Level II: Level III:			v Dota	$\vdash\vdash$	-	
	St. 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1					8 (8 0)	-	Level IV					1	
Preservative Key: 1-HCL 2-HNO3 3-H2SO4 4-Na	OH 5-Na2S2O3	6-NaHSO4 7-Othe	r 8-4 degree:	s C 9-50	35			Other				1	***************************************	

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

Copyright 2011 by ALS Group

1302079.

Fec1323.

1RK# 8013 7025 1558

SATURDAY ### A1
PRIORITY OVERNIGHT

X0 SGRA

77099 TX-US IAH



Emp# 637368 01FEB13 ROWA 515C1/0F24/6F03



ALS Environmental

10450 Stancliff Rd., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5887

Date: Name Comp CUSTODY SEAL

2-1-2013 Time: 1/50

B. Mc Klisson

Dany: ARCADY U.S.



13-Feb-2013

Robert Combs Navajo Refining Company PO Box 159 Artesia, NM 88211

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

Re: RO Discharge Sampling Work Order: 1302082

Dear Robert,

ALS Environmental received 22 samples on 02-Feb-2013 09:30 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 62.

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

Sincerely,

Electronically approved by: Jumoke M. Lawal

Sonie West

Sonia West Project Manager TNI LABORATORY

Certificate No: T104704231-12-10

ALS Environmental

Date: 13-Feb-13

Client: Navajo Refining Company
Project: RO Discharge Sampling

Work Order: 1302082

Work Order Sample Summary

Lab Samp II	Client Sample ID	<u>Matrix</u>	Tag Number	Collection Date	Date Received	Hold
1302082-01	RO-SB-1 (1)	Soil		1/31/2013 11:45	2/2/2013 09:30	
1302082-02	RO-SB-1 (3)	Soil		1/31/2013 11:50	2/2/2013 09:30	
1302082-03	RO-SB-1 (5)	Soil		1/31/2013 12:00	2/2/2013 09:30	
1302082-04	RO-SB-1 (7)	Soil		1/31/2013 12:30	2/2/2013 09:30	
1302082-05	RO-SB-1 (9)	Soil		1/31/2013 12:45	2/2/2013 09:30	
1302082-06	RO-SB-1 (10)	Soil		1/31/2013 12:50	2/2/2013 09:30	
1302082-07	RO-SB-1 (11)	Soil		2/1/2013 09:53	2/2/2013 09:30	
1302082-08	RO-SB-1 (13)	Soil		2/1/2013 09:53	2/2/2013 09:30	
1302082-09	RO-SB-1 (15)	Soil		2/1/2013 09:57	2/2/2013 09:30	
1302082-10	RO-SB-1 (17)	Soil		2/1/2013 09:47	2/2/2013 09:30	
1302082-11	RO-SB-1 (19)	Soil		2/1/2013 09:47	2/2/2013 09:30	
1302082-12	RO-SB-1 (20)	Soil		2/1/2013 09:40	2/2/2013 09:30	
1302082-13	RO-SB-1 (21)	Soil		2/1/2013 10:18	2/2/2013 09:30	
1302082-14	RO-SB-1 (23)	Soil		2/1/2013 10:18	2/2/2013 09:30	
1302082-15	RO-SB-1 (25)	Soil		2/1/2013 10:18	2/2/2013 09:30	
1302082-16	RO-SB-1 (27)	Soil		2/1/2013 10:10	2/2/2013 09:30	
1302082-17	RO-SB-1 (29)	Soil		2/1/2013 10:10	2/2/2013 09:30	
1302082-18	RO-SB-1 (30)	Soil		2/1/2013 10:10	2/2/2013 09:30	
1302082-19	RO-SB-1 (31)	Soil		2/1/2013 10:05	2/2/2013 09:30	
1302082-20	RO-SB-1 (33)	Soil		2/1/2013 10:05	2/2/2013 09:30	
1302082-21	RO-SB-1 (35)	Soil		2/1/2013 10:05	2/2/2013 09:30	
1302082-22	Trip Blank	Water		2/1/2013	2/2/2013 09:30	

ALS Environmental

Date: 13-Feb-13

Client: Navajo Refining Company
Project: RO Discharge Sampling

Work Order: 1302082

Case Narrative

Your samples received for Radium 226 and Radium 228 are reported on ALS workorder 1302223.

Batch 67579, TPH DRO/ORO, Sample 1302018-01: MS/MSD is for an unrelated sample.

Batch 67584, Metals, Sample 1302079-01: MS/MSD is for an unrelated sample.

Batch 67584, Metals, Sample 1302079-01: MS/MSD RPD is for an unrelated sample.

Batch 67584, Metals, Sample 1302079-01: Duplicate RPD is for an unrelated sample.

Batch 67614, Metals, Sample 1302140-04: MS/MSD is for an unrelated sample.

Batch 67614, Metals, Sample 1302140-04: MS/MSD RPD is for an unrelated sample.

Batch 67614, Metals, Sample 13202140-04: Duplicate RPD is for an unrelated sample.

Batch 67581, Low-Level Semivolatile Organics, Sample 1302050-06: MS/MSD is for an unrelated sample.

Batch R142091, Volatile Organics: LCS recovery was outside the control limits for 1,1,2-Trichloroethane. The associated results are Non Detect.

Batch R142091, Volatile Organics, Sample 1302079-15: MS/MSD is for an unrelated sample.

Batch 67763, Anions, Sample RO-SB-1 (35): MS/MSD recoveries were outside the control limits for Sulfate. The associated LCS recoveries and MS/MSD RPD were within the control limits.

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: RO-SB-1 (1)

Collection Date: 1/31/2013 11:45 AM

Date: 13-Feb-13

Work Order: 1302082

Lab ID: 1302082-01

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Method: SW8015M				41 / 2/5/13	Analyst: KMB
TPH (Oil Range)	U		0.60	4.1	mg/Kg-dry	1	2/11/2013 19:20
TPH (Diesel Range)	U		0.60	2.1	mg/Kg-dry	1	2/11/2013 19:20
Surr: 2-Fluorobiphenyl	60.8			60-135	%REC	1	2/11/2013 19:20
GASOLINE RANGE ORGANICS - SW	8015C	Met	hod: SW8015				Analyst: KKP
Gasoline Range Organics	U		0.024	0.061	mg/Kg-dry	1	2/5/2013 19:39
Surr: 4-Bromofluorobenzene	89.1			70-130	%REC	1	2/5/2013 19:39
MERCURY - SW7471B		Met	hod: SW7471A		Prep: SW74	71A / 2/5/13	Analyst: OFO
Mercury	9.79		0.34	4.25	μg/Kg-dry	1	2/5/2013 17:44
METALS		Met	hod: SW6020		Prep: SW30	50A / 2/5/13	Analyst: SKS
Aluminum	10,800		23	117	mg/Kg-dry	100	2/7/2013 16:32
Arsenic	4.07		0.12	0.583	mg/Kg-dry	1	2/6/2013 17:49
Barium	149		0.093	0.583	mg/Kg-dry	1	2/6/2013 17:49
Boron	6.67		1.6	2.92	mg/Kg-dry	1	2/7/2013 16:04
Cadmium	0.266	J	0.058	0.583	mg/Kg-dry	1	2/6/2013 17:49
Calcium	105,000		1,200	5,830	mg/Kg-dry	100	2/7/2013 16:32
Chromium	10.6		0.11	0.583	mg/Kg-dry	1	2/6/2013 17:49
Cobalt	4.17		0.082	0.583	mg/Kg-dry	1	2/6/2013 17:49
Copper	8.25		0.12	0.583	mg/Kg-dry	1	2/6/2013 17:49
Iron	8,020		12	58.3	mg/Kg-dry	1	2/6/2013 17:49
Lead	10.6		0.058	0.583	mg/Kg-dry	1	2/6/2013 17:49
Manganese	236		12	58.3	mg/Kg-dry	100	2/7/2013 16:32
Molybdenum	0.495	J	0.18	0.583	mg/Kg-dry	1	2/6/2013 17:49
Nickel	8.27		0.11	0.583	mg/Kg-dry	1	2/6/2013 17:49
Potassium	2,690		15	58.3	mg/Kg-dry	1	2/6/2013 17:49
Selenium	0.655		0.21	0.583	mg/Kg-dry	1	2/6/2013 17:49
Silver	U		0.093	0.583	mg/Kg-dry	1	2/6/2013 17:49
Sodium	132		13	58.3	mg/Kg-dry	1	2/6/2013 17:49
Uranium	U		0.58	0.583	mg/Kg-dry	1	2/6/2013 17:49
Zinc	31.7		0.29	0.583	mg/Kg-dry	1	2/6/2013 17:49
LOW-LEVEL SEMIVOLATILES		Met	hod: SW8270		Prep: SW35	41 / 2/5/13	Analyst: LG
1-Methylnaphthalene	7.4	J	1.9	8.0	μg/Kg-dry	1	2/5/2013 21:02
2-Methylnaphthalene	8.0	J	1.9	8.0	μg/Kg-dry	1	2/5/2013 21:02
Benzo(a)pyrene	U		1.9	8.0	μg/Kg-dry	1	2/5/2013 21:02
Naphthalene	U		1.9	8.0	μg/Kg-dry	1	2/5/2013 21:02
Surr: 2,4,6-Tribromophenol	53.6			36-126	%REC	1	2/5/2013 21:02
Surr: 2-Fluorobiphenyl	75.5			43-125	%REC	1	2/5/2013 21:02

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: RO-SB-1 (1)

Collection Date: 1/31/2013 11:45 AM

Work Order: 1302082

Lab ID: 1302082-01

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 2-Fluorophenol	62.5			37-125	%REC	1	2/5/2013 21:02
Surr: 4-Terphenyl-d14	115			32-125	%REC	1	2/5/2013 21:02
Surr: Nitrobenzene-d5	75.0			37-125	%REC	1	2/5/2013 21:02
Surr: Phenol-d6	50.4			40-125	%REC	1	2/5/2013 21:02
VOLATILES - SW8260C		Met	hod: SW8260				Analyst: WLR
1,1,1-Trichloroethane	U		2.1	6.1	μg/Kg-dry	1	2/4/2013 15:28
1,1,2,2-Tetrachloroethane	U		0.61	6.1	μg/Kg-dry	1	2/4/2013 15:28
1,1,2-Trichloroethane	U		2.4	6.1	μg/Kg-dry	1	2/4/2013 15:28
1,1-Dichloroethane	U		0.61	6.1	μg/Kg-dry	1	2/4/2013 15:28
1,1-Dichloroethene	U		1.8	6.1	μg/Kg-dry	1	2/4/2013 15:28
1,2-Dibromoethane	U		0.85	6.1	μg/Kg-dry	1	2/4/2013 15:28
1,2-Dichloroethane	U		0.73	6.1	μg/Kg-dry	1	2/4/2013 15:28
Benzene	U		0.73	6.1	μg/Kg-dry	1	2/4/2013 15:28
Carbon tetrachloride	U		1.5	6.1	μg/Kg-dry	1	2/4/2013 15:28
Chloroform	U		2.2	6.1	μg/Kg-dry	1	2/4/2013 15:28
Ethylbenzene	U		1.1	6.1	μg/Kg-dry	1	2/4/2013 15:28
Methylene chloride	7.0	J	3.0	12	μg/Kg-dry	1	2/4/2013 15:28
Tetrachloroethene	U		1.2	6.1	μg/Kg-dry	1	2/4/2013 15:28
Toluene	U		0.85	6.1	μg/Kg-dry	1	2/4/2013 15:28
Trichloroethene	U		1.9	6.1	μg/Kg-dry	1	2/4/2013 15:28
Vinyl chloride	U		1.2	2.4	μg/Kg-dry	1	2/4/2013 15:28
Xylenes, Total	U		3.2	18	μg/Kg-dry	1	2/4/2013 15:28
Surr: 1,2-Dichloroethane-d4	105			70-128	%REC	1	2/4/2013 15:28
Surr: 4-Bromofluorobenzene	104			73-126	%REC	1	2/4/2013 15:28
Surr: Dibromofluoromethane	102			71-128	%REC	1	2/4/2013 15:28
Surr: Toluene-d8	106			73-127	%REC	1	2/4/2013 15:28
ANIONS - EPA 300.0 (1993)		Met	hod: E300		Prep: E300	/ 2/10/13	Analyst: JKP
Chloride	6.56		2.4	6.06	mg/Kg-dry	1	2/11/2013 16:34
Fluoride	16.4		0.36	1.21	mg/Kg-dry	1	2/11/2013 16:34
Nitrogen, Nitrate (As N)	U		0.36	1.21	mg/Kg-dry	1	2/11/2013 16:34
Nitrogen, Nitrite (As N)	U		0.36	1.21	mg/Kg-dry	1	2/11/2013 16:34
Sulfate	204		2.4	6.06	mg/Kg-dry	1	2/11/2013 16:34
Surr: Selenate (surr)	115			85-115	%REC	1	2/11/2013 16:34
CYANIDE		Met	hod: SW9014		Prep: SW90	10C / 2/8/13	Analyst: EDG
Cyanide	U		0.71	2.36	mg/Kg-dry	1	2/8/2013 17:30
MOISTURE	Method: SW3550		Analyst: KAH				
Percent Moisture	17.7		0.010	0.0100	wt%	1	2/7/2013 15:15

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: RO-SB-1 (3)

Collection Date: 1/31/2013 11:50 AM

Date: 13-Feb-13

Work Order: 1302082

Lab ID: 1302082-02

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 23.5
 0.010
 0.0100
 wt%
 1
 2/7/2013 15:15

Client: Navajo Refining Company

Project: RO Discharge Sampling **Sample ID:** RO-SB-1 (5)

Sample ID: RO-SB-1 (5) **Collection Date:** 1/31/2013 12:00 PM

Work Order: 1302082

Lab ID: 1302082-03

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Meth	od: SW7471 A	1	Prep: SW74	71A / 2/5/13	Analyst: OFO
Mercury	3.95	J	0.36	4.38	μg/Kg-dry	1	2/5/2013 17:46
METALS		Meth	od: SW6020		Prep: SW30	50A / 2/5/13	Analyst: SKS
Aluminum	7,110		24	122	mg/Kg-dry	100	2/7/2013 16:35
Arsenic	3.42		0.12	0.612	mg/Kg-dry	1	2/6/2013 17:51
Barium	180		0.098	0.612	mg/Kg-dry	1	2/6/2013 17:51
Boron	4.30		1.7	3.06	mg/Kg-dry	1	2/7/2013 16:06
Cadmium	0.0850	J	0.061	0.612	mg/Kg-dry	1	2/6/2013 17:51
Calcium	87,900		1,200	6,120	mg/Kg-dry	100	2/7/2013 16:35
Chromium	6.49		0.11	0.612	mg/Kg-dry	1	2/6/2013 17:51
Cobalt	2.59		0.086	0.612	mg/Kg-dry	1	2/6/2013 17:51
Copper	2.64		0.12	0.612	mg/Kg-dry	1	2/6/2013 17:51
Iron	4,780		12	61.2	mg/Kg-dry	1	2/6/2013 17:51
Lead	3.75		0.061	0.612	mg/Kg-dry	1	2/6/2013 17:51
Manganese	55.2		0.12	0.612	mg/Kg-dry	1	2/6/2013 17:51
Molybdenum	0.205	J	0.18	0.612	mg/Kg-dry	1	2/6/2013 17:51
Nickel	4.83		0.11	0.612	mg/Kg-dry	1	2/6/2013 17:51
Potassium	1,430		16	61.2	mg/Kg-dry	1	2/6/2013 17:51
Selenium	0.542	J	0.22	0.612	mg/Kg-dry	1	2/6/2013 17:51
Silver	U		0.098	0.612	mg/Kg-dry	1	2/6/2013 17:51
Sodium	183		13	61.2	mg/Kg-dry	1	2/6/2013 17:51
Uranium	U		0.61	0.612	mg/Kg-dry	1	2/6/2013 17:51
Zinc	14.4		0.31	0.612	mg/Kg-dry	1	2/6/2013 17:51
ANIONS - EPA 300.0 (1993)		Meth	od: E300		Prep: E300	/ 2/10/13	Analyst: JKP
Chloride	247		2.6	6.44	mg/Kg-dry	1	2/11/2013 16:56
Fluoride	12.5		0.39	1.29	mg/Kg-dry	1	2/11/2013 16:56
Nitrogen, Nitrate (As N)	0.515	J	0.39	1.29	mg/Kg-dry	1	2/11/2013 16:56
Nitrogen, Nitrite (As N)	U		0.39	1.29	mg/Kg-dry	1	2/11/2013 16:56
Sulfate	2,350		13	32.2	mg/Kg-dry	5	2/12/2013 10:30
Surr: Selenate (surr)	114			85-115	%REC	1	2/11/2013 16:56
Surr: Selenate (surr)	113			85-115	%REC	5	2/12/2013 10:30
CYANIDE		Meth	od: SW9014		Prep: SW90	10C / 2/8/13	Analyst: EDG
Cyanide	U		0.72	2.39	mg/Kg-dry	1	2/8/2013 17:30
MOISTURE	Method: SW3550					Analyst: KAH	
Percent Moisture	22.7		0.010	0.0100	wt%	1	2/7/2013 15:15

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: RO-SB-1 (7)

Collection Date: 1/31/2013 12:30 PM

Work Order: 1302082

Lab ID: 1302082-04

Date: 13-Feb-13

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 25.9
 0.010
 0.0100
 wt%
 1
 2/7/2013 15:15

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: RO-SB-1 (9)

Collection Date: 1/31/2013 12:45 PM

Work Order: 1302082

Lab ID: 1302082-05

Date: 13-Feb-13

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 32.7
 0.010
 0.0100
 wt%
 1
 2/7/2013 15:15

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: RO-SB-1 (10) **Collection Date:** 1/31/2013 12:50 PM

Work Order: 1302082

Lab ID: 1302082-06

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Meth	od: SW7471 A		Prep: SW74	71A / 2/5/13	Analyst: OFO
Mercury	1.67	J	0.40	4.89	μg/Kg-dry	1	2/5/2013 17:48
METALS		Meth	od: SW6020		Prep: SW30	50A / 2/5/13	Analyst: SKS
Aluminum	4,110		25	127	mg/Kg-dry	100	2/7/2013 16:37
Arsenic	2.03		0.13	0.635	mg/Kg-dry	1	2/6/2013 17:53
Barium	186		0.10	0.635	mg/Kg-dry	1	2/6/2013 17:53
Boron	4.47	J	3.6	6.35	mg/Kg-dry	2	2/7/2013 16:09
Cadmium	0.103	J	0.063	0.635	mg/Kg-dry	1	2/6/2013 17:53
Calcium	184,000		1,300	6,350	mg/Kg-dry	100	2/7/2013 16:37
Chromium	5.94		0.11	0.635	mg/Kg-dry	1	2/6/2013 17:53
Cobalt	1.28		0.089	0.635	mg/Kg-dry	1	2/6/2013 17:53
Copper	2.52		0.13	0.635	mg/Kg-dry	1	2/6/2013 17:53
Iron	2,390		13	63.5	mg/Kg-dry	1	2/6/2013 17:53
Lead	2.02		0.063	0.635	mg/Kg-dry	1	2/6/2013 17:53
Manganese	32.3		0.13	0.635	mg/Kg-dry	1	2/6/2013 17:53
Molybdenum	U		0.19	0.635	mg/Kg-dry	1	2/6/2013 17:53
Nickel	2.40		0.11	0.635	mg/Kg-dry	1	2/6/2013 17:53
Potassium	808		16	63.5	mg/Kg-dry	1	2/6/2013 17:53
Selenium	0.276	J	0.23	0.635	mg/Kg-dry	1	2/6/2013 17:53
Silver	U		0.10	0.635	mg/Kg-dry	1	2/6/2013 17:53
Sodium	125		14	63.5	mg/Kg-dry	1	2/6/2013 17:53
Uranium	U		0.63	0.635	mg/Kg-dry	1	2/6/2013 17:53
Zinc	9.11		0.32	0.635	mg/Kg-dry	1	2/6/2013 17:53
ANIONS - EPA 300.0 (1993)		Meth	od: E300		Prep: E300	/ 2/10/13	Analyst: JKP
Chloride	180		2.9	7.15	mg/Kg-dry	1	2/11/2013 17:17
Fluoride	21.5		0.43	1.43	mg/Kg-dry	1	2/11/2013 17:17
Nitrogen, Nitrate (As N)	U		0.43	1.43	mg/Kg-dry	1	2/11/2013 17:17
Nitrogen, Nitrite (As N)	U		0.43	1.43	mg/Kg-dry	1	2/11/2013 17:17
Sulfate	1,900		14	35.7	mg/Kg-dry	5	2/12/2013 11:05
Surr: Selenate (surr)	114			85-115	%REC	1	2/11/2013 17:17
Surr: Selenate (surr)	111			85-115	%REC	5	2/12/2013 11:05
CYANIDE		Meth	od: SW9014		Prep: SW90	10C / 2/8/13	Analyst: EDG
Cyanide	U		0.81	2.71	mg/Kg-dry	1	2/8/2013 17:30
MOISTURE		Meth	od: SW3550				Analyst: KAH
Percent Moisture	31.0		0.010	0.0100	wt%	1	2/7/2013 15:15

Date: 13-Feb-13

Client: Navajo Refining Company Work Order: 1302082 **Project: RO Discharge Sampling**

Lab ID: 1302082-07 **Sample ID:** RO-SB-1 (11) **Collection Date:** 2/1/2013 09:53 AM Matrix: SOIL

Report **Dilution Date Analyzed** Limit **Analyses** Result Qual **MDL Factor** Units

Method: SW3550 **MOISTURE** Analyst: KAH 2/7/2013 15:15 **Percent Moisture** 13.9 0.010 0.0100 wt%

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302082

 Sample ID: RO-SB-1 (13)
 Lab ID: 1302082-08

Collection Date: 2/1/2013 09:53 AM

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 19.2
 0.010
 0.0100
 wt%
 1
 2/7/2013 15:15

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: RO-SB-1 (15) **Collection Date:** 2/1/2013 09:57 AM

Work Order: 1302082

Lab ID: 1302082-09

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Meth	od: SW7471	1	Prep: SW74	71A / 2/5/13	Analyst: OFO
Mercury	3.35	J	0.37	4.51	μg/Kg-dry	1	2/5/2013 17:50
METALS		Meth	od: SW6020		Prep: SW30	50A / 2/5/13	Analyst: SKS
Aluminum	8,520		22	110	mg/Kg-dry	100	2/7/2013 16:44
Arsenic	1.68		0.11	0.549	mg/Kg-dry	1	2/6/2013 17:56
Barium	95.7		0.088	0.549	mg/Kg-dry	1	2/6/2013 17:56
Boron	5.80		3.1	5.49	mg/Kg-dry	2	2/7/2013 16:16
Cadmium	0.262	J	0.055	0.549	mg/Kg-dry	1	2/6/2013 17:56
Calcium	204,000		1,100	5,490	mg/Kg-dry	100	2/7/2013 16:44
Chromium	6.96		0.099	0.549	mg/Kg-dry	1	2/6/2013 17:56
Cobalt	3.65		0.077	0.549	mg/Kg-dry	1	2/6/2013 17:56
Copper	3.94		0.11	0.549	mg/Kg-dry	1	2/6/2013 17:56
Iron	5,050		11	54.9	mg/Kg-dry	1	2/6/2013 17:56
Lead	7.03		0.055	0.549	mg/Kg-dry	1	2/6/2013 17:56
Manganese	76.1		0.11	0.549	mg/Kg-dry	1	2/6/2013 17:56
Molybdenum	0.165	J	0.16	0.549	mg/Kg-dry	1	2/6/2013 17:56
Nickel	5.53		0.099	0.549	mg/Kg-dry	1	2/6/2013 17:56
Potassium	1,740		14	54.9	mg/Kg-dry	1	2/6/2013 17:56
Selenium	0.943		0.20	0.549	mg/Kg-dry	1	2/6/2013 17:56
Silver	U		0.088	0.549	mg/Kg-dry	1	2/6/2013 17:56
Sodium	123		12	54.9	mg/Kg-dry	1	2/6/2013 17:56
Uranium	U		0.55	0.549	mg/Kg-dry	1	2/6/2013 17:56
Zinc	20.0		0.27	0.549	mg/Kg-dry	1	2/6/2013 17:56
ANIONS - EPA 300.0 (1993)		Meth	od: E300		Prep: E300	/ 2/10/13	Analyst: JKP
Chloride	80.6		2.6	6.52	mg/Kg-dry	1	2/11/2013 17:39
Fluoride	15.3		0.39	1.30	mg/Kg-dry	1	2/11/2013 17:39
Nitrogen, Nitrate (As N)	0.940	J	0.39	1.30	mg/Kg-dry	1	2/11/2013 17:39
Nitrogen, Nitrite (As N)	U		0.39	1.30	mg/Kg-dry	1	2/11/2013 17:39
Sulfate	832		2.6	6.52	mg/Kg-dry	1	2/11/2013 17:39
Surr: Selenate (surr)	114			85-115	%REC	1	2/11/2013 17:39
CYANIDE		Meth	od: SW9014		Prep: SW90	10C / 2/8/13	Analyst: EDG
Cyanide	U		0.71	2.35	mg/Kg-dry	1	2/8/2013 17:30
MOISTURE	Method: SW3550						Analyst: KAH
Percent Moisture	23.5		0.010	0.0100	wt%	1	2/7/2013 15:15

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: RO-SB-1 (17) **Collection Date:** 2/1/2013 09:47 AM

Work Order: 1302082

Lab ID: 1302082-10

Date: 13-Feb-13

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 24.0
 0.010
 0.0100
 wt%
 1
 2/7/2013 15:15

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302082

 Sample ID:
 RO-SB-1 (19)
 Lab ID: 1302082-11

Collection Date: 2/1/2013 09:47 AM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 20.8
 0.010
 0.0100
 wt%
 1
 2/7/2013 15:15

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: RO-SB-1 (20) **Collection Date:** 2/1/2013 09:40 AM

Work Order: 1302082

Lab ID: 1302082-12

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Meth	nod: SW7471A		Prep: SW74	71A / 2/5/13	Analyst: OFO
Mercury	1.02	J	0.35	4.25	μg/Kg-dry	1	2/5/2013 17:56
METALS		Meth	nod: SW6020		Prep: SW30	50A / 2/6/13	Analyst: ALR
Aluminum	6,090		24	121	mg/Kg-dry	100	2/11/2013 21:29
Arsenic	2.91		0.12	0.606	mg/Kg-dry	1	2/9/2013 05:22
Barium	268		9.7	60.6	mg/Kg-dry	100	2/11/2013 21:29
Boron	3.56		1.7	3.03	mg/Kg-dry	1	2/9/2013 05:22
Cadmium	0.245	J	0.061	0.606	mg/Kg-dry	1	2/9/2013 05:22
Calcium	252,000		1,200	6,060	mg/Kg-dry	100	2/11/2013 21:29
Chromium	6.61		0.11	0.606	mg/Kg-dry	1	2/9/2013 05:22
Cobalt	1.20		0.085	0.606	mg/Kg-dry	1	2/9/2013 05:22
Copper	2.38		0.12	0.606	mg/Kg-dry	1	2/9/2013 05:22
Iron	3,230		12	60.6	mg/Kg-dry	1	2/9/2013 05:22
Lead	4.04		0.061	0.606	mg/Kg-dry	1	2/9/2013 05:22
Manganese	35.3		0.12	0.606	mg/Kg-dry	1	2/9/2013 05:22
Molybdenum	U		0.18	0.606	mg/Kg-dry	1	2/9/2013 05:22
Nickel	3.95		0.11	0.606	mg/Kg-dry	1	2/9/2013 05:22
Potassium	1,250		16	60.6	mg/Kg-dry	1	2/9/2013 05:22
Selenium	0.620		0.22	0.606	mg/Kg-dry	1	2/9/2013 05:22
Silver	U		0.097	0.606	mg/Kg-dry	1	2/9/2013 05:22
Sodium	101		13	60.6	mg/Kg-dry	1	2/9/2013 05:22
Uranium	U		0.61	0.606	mg/Kg-dry	1	2/9/2013 05:22
Zinc	9.84		0.30	0.606	mg/Kg-dry	1	2/9/2013 05:22
ANIONS - EPA 300.0 (1993)		Meth	nod: E300		Prep: E300	/ 2/10/13	Analyst: JKP
Chloride	71.5		2.5	6.18	mg/Kg-dry	1	2/11/2013 18:01
Fluoride	9.85		0.37	1.24	mg/Kg-dry	1	2/11/2013 18:01
Nitrogen, Nitrate (As N)	0.840	J	0.37	1.24	mg/Kg-dry	1	2/11/2013 18:01
Nitrogen, Nitrite (As N)	U		0.37	1.24	mg/Kg-dry	1	2/11/2013 18:01
Sulfate	703		2.5	6.18	mg/Kg-dry	1	2/11/2013 18:01
Surr: Selenate (surr)	113			85-115	%REC	1	2/11/2013 18:01
CYANIDE		Meth	nod: SW9014		Prep: SW90	10C / 2/8/13	Analyst: EDG
Cyanide	0.788	J	0.73	2.42	mg/Kg-dry	1	2/8/2013 17:30
MOISTURE		Meth	nod: SW3550				Analyst: KAH
Percent Moisture	20.3		0.010	0.0100	wt%	1	2/7/2013 15:15

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: RO-SB-1 (21) **Collection Date:** 2/1/2013 10:18 AM

Work Order: 1302082

Lab ID: 1302082-13

Date: 13-Feb-13

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 28.8
 0.010
 0.0100
 wt%
 1
 2/7/2013 15:15

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: RO-SB-1 (23) **Collection Date:** 2/1/2013 10:18 AM

Work Order: 1302082

Lab ID: 1302082-14

Date: 13-Feb-13

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 19.9
 0.010
 0.0100
 wt%
 1
 2/7/2013 15:15

Client: Navajo Refining Company

RO Discharge Sampling **Project:**

Sample ID: RO-SB-1 (25) **Collection Date:** 2/1/2013 10:18 AM

Matrix: SOIL

Work Order: 1302082

Lab ID: 1302082-15

Date: 13-Feb-13

Report **Dilution Date Analyzed** Limit **Factor** Qual Analyses Result MDL Units Prep: SW7471A / 2/5/13 MERCURY - SW7471B Method: SW7471A Analyst: OFO 2/5/2013 17:58 Mercury 27.4 0.35 4.26 μg/Kg-dry Prep: SW3050A / 2/6/13 **METALS** Method: SW6020 Analyst: ALR **Aluminum** 18,600 25 124 mg/Kg-dry 100 2/11/2013 21:34 **Arsenic** 3.12 0.12 0.621 mg/Kg-dry 1 2/9/2013 05:27 **Barium** 0.099 0.621 mg/Kg-dry 2/9/2013 05:27 16.5 1 **Boron** 3.76 1.7 3.10 mg/Kg-dry 1 2/9/2013 05:27 Cadmium U 0.062 0.621 mg/Kg-dry 1 2/9/2013 05:27 11,500 62.1 Calcium 12 mg/Kg-dry 1 2/9/2013 05:27 Chromium 9.20 0.11 0.621 mg/Kg-dry 1 2/9/2013 05:27 Cobalt 6.52 0.087 0.621 mg/Kg-dry 1 2/9/2013 05:27 mg/Kg-dry 6.56 0.12 0.621 2/9/2013 05:27 Copper 1 Iron 9.750 12 62.1 mg/Kg-dry 1 2/9/2013 05:27 0.062 Lead 12.0 0.621 mg/Kg-dry 1 2/9/2013 05:27 Manganese 193 0.12 0.621 mg/Kg-dry 2/9/2013 05:27 Molybdenum J 0.19 0.621 0.420 mg/Kg-dry 2/9/2013 05:27 1 Nickel 0.11 0.621 2/9/2013 05:27 10.4 mg/Kg-dry 1 **Potassium** 3,560 16 62.1 mg/Kg-dry 1 2/9/2013 05:27 Selenium 0.414 J 0.22 0.621 mg/Kg-dry 1 2/9/2013 05:27 0.099 mg/Kg-dry Silver U 0.621 1 2/9/2013 05:27 **Sodium** 105 14 62.1 mg/Kg-dry 1 2/9/2013 05:27 Uranium U 0.62 0.621 mg/Kg-dry 2/9/2013 05:27 0.31 Zinc 30.7 0.621 2/9/2013 05:27 mg/Kg-dry 1 Prep: E300 / 2/10/13 ANIONS - EPA 300.0 (1993) Method: E300 Analyst: JKP Chloride 108 2.5 6.27 mg/Kg-dry 2/11/2013 18:23 14.6 **Fluoride** 0.38 1.25 mg/Kg-dry 2/11/2013 18:23 1 Nitrogen, Nitrate (As N) U 0.38 1.25 mg/Kg-dry 2/11/2013 18:23 1 Nitrogen, Nitrite (As N) U 0.38 1.25 mg/Kg-dry 1 2/11/2013 18:23 Sulfate 851 mg/Kg-dry 2.5 6.27 1 2/11/2013 18:23 85-115 %REC 2/11/2013 18:23 Surr: Selenate (surr) 114 1 Method: SW9014 Prep: SW9010C / 2/8/13 CYANIDE Analyst: EDG Cyanide 0.747 0.75 2.49 mg/Kg-dry 1 2/8/2013 17:30 Method: SW3550 **MOISTURE** Analyst: KAH

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

Percent Moisture

2/7/2013 15:15

0.010

0.0100

wt%

20.9

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: RO-SB-1 (27) **Collection Date:** 2/1/2013 10:10 AM

Work Order: 1302082

Lab ID: 1302082-16

Date: 13-Feb-13

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 18.8
 0.010
 0.0100
 wt%
 1
 2/7/2013 15:15

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302082

 Sample ID: RO-SB-1 (29)
 Lab ID: 1302082-17

Collection Date: 2/1/2013 10:10 AM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 20.9
 0.010
 0.0100
 wt%
 1
 2/8/2013 14:55

Client: Navajo Refining Company

Project: RO Discharge Sampling

RO-SB-1 (30) **Sample ID: Collection Date:** 2/1/2013 10:10 AM

Work Order: 1302082

Lab ID: 1302082-18

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Meth	od: SW7471A		Prep: SW74	71A / 2/5/13	Analyst: OFO
Mercury	0.638	J	0.37	4.54	μg/Kg-dry	1	2/5/2013 18:00
METALS		Meth	od: SW6020		Prep: SW30	50A / 2/6/13	Analyst: ALR
Aluminum	7,810		27	134	mg/Kg-dry	100	2/11/2013 21:39
Arsenic	2.01		0.13	0.669	mg/Kg-dry	1	2/9/2013 05:32
Barium	40.7		0.11	0.669	mg/Kg-dry	1	2/9/2013 05:32
Boron	3.67		1.9	3.35	mg/Kg-dry	1	2/9/2013 05:32
Cadmium	0.151	J	0.067	0.669	mg/Kg-dry	1	2/9/2013 05:32
Calcium	95,500		1,300	6,690	mg/Kg-dry	100	2/11/2013 21:39
Chromium	6.41		0.12	0.669	mg/Kg-dry	1	2/9/2013 05:32
Cobalt	1.97		0.094	0.669	mg/Kg-dry	1	2/9/2013 05:32
Copper	2.72		0.13	0.669	mg/Kg-dry	1	2/9/2013 05:32
Iron	4,870		13	66.9	mg/Kg-dry	1	2/9/2013 05:32
Lead	4.05		0.067	0.669	mg/Kg-dry	1	2/9/2013 05:32
Manganese	78.8		0.13	0.669	mg/Kg-dry	1	2/9/2013 05:32
Molybdenum	0.220	J	0.20	0.669	mg/Kg-dry	1	2/9/2013 05:32
Nickel	4.51		0.12	0.669	mg/Kg-dry	1	2/9/2013 05:32
Potassium	1,450		17	66.9	mg/Kg-dry	1	2/9/2013 05:32
Selenium	0.539	J	0.24	0.669	mg/Kg-dry	1	2/9/2013 05:32
Silver	U		0.11	0.669	mg/Kg-dry	1	2/9/2013 05:32
Sodium	100		15	66.9	mg/Kg-dry	1	2/9/2013 05:32
Uranium	U		0.67	0.669	mg/Kg-dry	1	2/9/2013 05:32
Zinc	14.9		0.33	0.669	mg/Kg-dry	1	2/9/2013 05:32
ANIONS - EPA 300.0 (1993)		Meth	od: E300		Prep: E300 /	2/10/13	Analyst: JKP
Chloride	134		2.7	6.72	mg/Kg-dry	1	2/11/2013 18:44
Fluoride	5.24		0.40	1.34	mg/Kg-dry	1	2/11/2013 18:44
Nitrogen, Nitrate (As N)	U		0.40	1.34	mg/Kg-dry	1	2/11/2013 18:44
Nitrogen, Nitrite (As N)	U		0.40	1.34	mg/Kg-dry	1	2/11/2013 18:44
Sulfate	763		2.7	6.72	mg/Kg-dry	1	2/11/2013 18:44
Surr: Selenate (surr)	113			85-115	%REC	1	2/11/2013 18:44
CYANIDE		Meth	od: SW9014		Prep: SW90	10C / 2/8/13	Analyst: EDG
Cyanide	U		0.74	2.48	mg/Kg-dry	1	2/8/2013 17:30
MOISTURE		Meth	od: SW3550				Analyst: KAH
Percent Moisture	26.6		0.010	0.0100	wt%	1	2/8/2013 14:55

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302082

 Sample ID: RO-SB-1 (31)
 Lab ID: 1302082-19

Collection Date: 2/1/2013 10:05 AM

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 24.7
 0.010
 0.0100
 wt%
 1
 2/8/2013 14:55

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302082

 Sample ID: RO-SB-1 (33)
 Lab ID: 1302082-20

Collection Date: 2/1/2013 10:05 AM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 16.1
 0.010
 0.0100
 wt%
 1
 2/8/2013 14:55

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: RO-SB-1 (35) **Collection Date:** 2/1/2013 10:05 AM

Work Order: 1302082

Lab ID: 1302082-21

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Met	hod: SW8015M		Prep: SW35	41 / 2/5/13	Analyst: KMB
TPH (Oil Range)	U		0.59	4.0	mg/Kg-dry	1	2/11/2013 19:43
TPH (Diesel Range)	U		0.59	2.0	mg/Kg-dry	1	2/11/2013 19:43
Surr: 2-Fluorobiphenyl	60.5			60-135	%REC	1	2/11/2013 19:43
GASOLINE RANGE ORGANICS - SW8015	5C	Met	hod: SW8015				Analyst: KKP
Gasoline Range Organics	U		0.024	0.059	mg/Kg-dry	1	2/5/2013 19:58
Surr: 4-Bromofluorobenzene	92.6			70-130	%REC	1	2/5/2013 19:58
MERCURY - SW7471B		Met	hod: SW7471A		Prep: SW74	71A / 2/5/13	Analyst: OFO
Mercury	U		0.33	4.09	μg/Kg-dry	1	2/5/2013 18:02
METALS		Met	hod: SW6020		Prep: SW30	50A / 2/6/13	Analyst: ALR
Aluminum	4,280		23	113	mg/Kg-dry	100	2/11/2013 21:44
Arsenic	1.82		0.11	0.564	mg/Kg-dry	1	2/9/2013 05:37
Barium	72.7		0.090	0.564	mg/Kg-dry	1	2/9/2013 05:37
Boron	2.01	J	1.6	2.82	mg/Kg-dry	1	2/9/2013 05:37
Cadmium	0.0817	J	0.056	0.564	mg/Kg-dry	1	2/9/2013 05:37
Calcium	73,200		1,100	5,640	mg/Kg-dry	100	2/11/2013 21:44
Chromium	4.22		0.10	0.564	mg/Kg-dry	1	2/9/2013 05:37
Cobalt	1.87		0.079	0.564	mg/Kg-dry	1	2/9/2013 05:37
Copper	1.70		0.11	0.564	mg/Kg-dry	1	2/9/2013 05:37
Iron	3,220		11	56.4	mg/Kg-dry	1	2/9/2013 05:37
Lead	2.92		0.056	0.564	mg/Kg-dry	1	2/9/2013 05:37
Manganese	58.1		0.11	0.564	mg/Kg-dry	1	2/9/2013 05:37
Molybdenum	0.198	J	0.17	0.564	mg/Kg-dry	1	2/9/2013 05:37
Nickel	3.34		0.10	0.564	mg/Kg-dry	1	2/9/2013 05:37
Potassium	932		15	56.4	mg/Kg-dry	1	2/9/2013 05:37
Selenium	0.332	J	0.20	0.564	mg/Kg-dry	1	2/9/2013 05:37
Silver	U		0.090	0.564	mg/Kg-dry	1	2/9/2013 05:37
Sodium	53.7	J	12	56.4	mg/Kg-dry	1	2/9/2013 05:37
Uranium	U		0.56	0.564	mg/Kg-dry	1	2/9/2013 05:37
Zinc	8.89		0.28	0.564	mg/Kg-dry	1	2/9/2013 05:37
LOW-LEVEL SEMIVOLATILES		Met	hod: SW8270		Prep: SW35	41 / 2/5/13	Analyst: LG
1-Methylnaphthalene	U		1.9	7.8	μg/Kg-dry	1	2/5/2013 21:22
2-Methylnaphthalene	U		1.9	7.8	μg/Kg-dry	1	2/5/2013 21:22
Benzo(a)pyrene	U		1.9	7.8	μg/Kg-dry	1	2/5/2013 21:22
Naphthalene	U		1.9	7.8	μg/Kg-dry	1	2/5/2013 21:22
Surr: 2,4,6-Tribromophenol	60.2			36-126	%REC	1	2/5/2013 21:22
Surr: 2-Fluorobiphenyl	79.2			43-125	%REC	1	2/5/2013 21:22

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: RO-SB-1 (35) **Collection Date:** 2/1/2013 10:05 AM

Work Order: 1302082

Lab ID: 1302082-21

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 2-Fluorophenol	63.8			37-125	%REC	1	2/5/2013 21:22
Surr: 4-Terphenyl-d14	119			32-125	%REC	1	2/5/2013 21:22
Surr: Nitrobenzene-d5	72.4			37-125	%REC	1	2/5/2013 21:22
Surr: Phenol-d6	64.0			40-125	%REC	1	2/5/2013 21:22
VOLATILES - SW8260C		Meth	nod: SW8260				Analyst: WLR
1,1,1-Trichloroethane	U		2.0	5.9	μg/Kg-dry	1	2/4/2013 15:51
1,1,2,2-Tetrachloroethane	U		0.59	5.9	μg/Kg-dry	1	2/4/2013 15:51
1,1,2-Trichloroethane	U		2.4	5.9	μg/Kg-dry	1	2/4/2013 15:51
1,1-Dichloroethane	U		0.59	5.9	μg/Kg-dry	1	2/4/2013 15:51
1,1-Dichloroethene	U		1.8	5.9	μg/Kg-dry	1	2/4/2013 15:51
1,2-Dibromoethane	U		0.83	5.9	μg/Kg-dry	1	2/4/2013 15:51
1,2-Dichloroethane	U		0.71	5.9	μg/Kg-dry	1	2/4/2013 15:51
Benzene	U		0.71	5.9	μg/Kg-dry	1	2/4/2013 15:51
Carbon tetrachloride	U		1.4	5.9	μg/Kg-dry	1	2/4/2013 15:51
Chloroform	U		2.1	5.9	μg/Kg-dry	1	2/4/2013 15:51
Ethylbenzene	U		1.1	5.9	μg/Kg-dry	1	2/4/2013 15:51
Methylene chloride	5.6	J	3.0	12	μg/Kg-dry	1	2/4/2013 15:51
Tetrachloroethene	U		1.2	5.9	μg/Kg-dry	1	2/4/2013 15:51
Toluene	U		0.83	5.9	μg/Kg-dry	1	2/4/2013 15:51
Trichloroethene	U		1.9	5.9	μg/Kg-dry	1	2/4/2013 15:51
Vinyl chloride	U		1.2	2.4	μg/Kg-dry	1	2/4/2013 15:51
Xylenes, Total	U		3.1	18	μg/Kg-dry	1	2/4/2013 15:51
Surr: 1,2-Dichloroethane-d4	87.4			70-128	%REC	1	2/4/2013 15:51
Surr: 4-Bromofluorobenzene	94.6			73-126	%REC	1	2/4/2013 15:51
Surr: Dibromofluoromethane	97.1			71-128	%REC	1	2/4/2013 15:51
Surr: Toluene-d8	94.4			73-127	%REC	1	2/4/2013 15:51
ANIONS - EPA 300.0 (1993)		Meth	nod: E300		Prep: E300 /	2/10/13	Analyst: JKP
Chloride	46.7		2.3	5.87	mg/Kg-dry	1	2/11/2013 19:06
Fluoride	5.80		0.35	1.17	mg/Kg-dry	1	2/11/2013 19:06
Nitrogen, Nitrate (As N)	U		0.35	1.17	mg/Kg-dry	1	2/11/2013 19:06
Nitrogen, Nitrite (As N)	U		0.35	1.17	mg/Kg-dry	1	2/11/2013 19:06
Sulfate	614		2.3	5.87	mg/Kg-dry	1	2/11/2013 19:06
Surr: Selenate (surr)	115			85-115	%REC	1	2/11/2013 19:06
CYANIDE		Meth	nod: SW9014		Prep: SW90	10C / 2/8/13	Analyst: EDG
Cyanide	0.672	J	0.67	2.24	mg/Kg-dry	1	2/8/2013 17:30
MOISTURE		Meth	nod: SW3550				Analyst: KAH
Percent Moisture	16.0		0.010	0.0100	wt%	1	2/8/2013 14:55

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: Trip Blank **Collection Date:** 2/1/2013

Work Order: 1302082

Lab ID: 1302082-22

Date: 13-Feb-13

Matrix: WATER

Analyses	Result	Qual MDL	Report Limit	Units	Dilution Factor	Date Analyzed
LOW LEVEL VOLATILES - SW8260C		Method: SW8260				Analyst: AKP
1,1,1-Trichloroethane	U	0.00030	0.0010	mg/L	1	2/5/2013 15:40
1,1,2,2-Tetrachloroethane	U	0.00050	0.0010	mg/L	1	2/5/2013 15:40
1,1,2-Trichloroethane	U	0.00030	0.0010	mg/L	1	2/5/2013 15:40
1,1-Dichloroethane	U	0.00030	0.0010	mg/L	1	2/5/2013 15:40
1,1-Dichloroethene	U	0.00050	0.0010	mg/L	1	2/5/2013 15:40
1,2-Dibromoethane	U	0.00030	0.0010	mg/L	1	2/5/2013 15:40
1,2-Dichloroethane	U	0.00030	0.0010	mg/L	1	2/5/2013 15:40
Benzene	U	0.00020	0.0010	mg/L	1	2/5/2013 15:40
Carbon tetrachloride	U	0.00030	0.0010	mg/L	1	2/5/2013 15:40
Chloroform	U	0.00030	0.0010	mg/L	1	2/5/2013 15:40
Ethylbenzene	U	0.00030	0.0010	mg/L	1	2/5/2013 15:40
Methylene chloride	U	0.00040	0.0020	mg/L	1	2/5/2013 15:40
Tetrachloroethene	U	0.00040	0.0010	mg/L	1	2/5/2013 15:40
Toluene	U	0.00030	0.0010	mg/L	1	2/5/2013 15:40
Trichloroethene	U	0.00020	0.0010	mg/L	1	2/5/2013 15:40
Vinyl chloride	U	0.00040	0.0010	mg/L	1	2/5/2013 15:40
Xylenes, Total	U	0.00030	0.0010	mg/L	1	2/5/2013 15:40
Surr: 1,2-Dichloroethane-d4	95.2		71-125	%REC	1	2/5/2013 15:40
Surr: 4-Bromofluorobenzene	95.3		70-125	%REC	1	2/5/2013 15:40
Surr: Dibromofluoromethane	103		74-125	%REC	1	2/5/2013 15:40
Surr: Toluene-d8	98.5		78-123	%REC	1	2/5/2013 15:40

Client: Navajo Refining Company

Work Order: 1302082

Project: RO Discharge Sampling

Date: 13-Feb-13

QC BATCH REPORT

Batch ID: 67579	Instrument ID FID-7		Metho	d: SW8015	М					
MBLK Sample ID:	FBLKS1-130205-67579				Units: mg	/Kg	Analys	is Date: 2/	6/2013 11	:56 AN
Client ID:	Run I	D: FID-7 _1	130206A	;	SeqNo: 310	4153	Prep Date: 2/5/	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
TPH (Oil Range)	U	3.4								
TPH (Diesel Range)	U	1.7								
Surr: 2-Fluorobiphenyl	2.092	0.10	3.33	(62.8	60-135	0			
LCS Sample ID:	FLCSS1-130205-67579				Units: mg	/Kg	Analys	is Date: 2/	/6/2013 12:19 PI	
Client ID:	Run I	D: FID-7 _1	130206A	;	SeqNo: 310	4154	Prep Date: 2/5/	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
TPH (Oil Range)	27.05	3.4	33.33	(81.2	70-130	0			
ΓPH (Diesel Range)	35.72	1.7	33.33	() 107	70-130	0			
Surr: 2-Fluorobiphenyl	2.536	0.10	3.33	(76.2	60-135	0			
MS Sample ID:	1302018-01BMS				Units: mg/	/Kg	Analys	is Date: 2/	6/2013 01	:06 PI
Client ID:	Run I	D: FID-7 _1	130206A	;	SeqNo: 310	4156	Prep Date: 2/5/	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
ГРН (Oil Range)	229.1	3.4	33.23	219.8	3 28.1	70-130	0			SE
ΓPH (Diesel Range)	80.52	1.7	33.23	75.45	5 15.3	70-130	0			SE
Surr: 2-Fluorobiphenyl	2.284	0.10	3.32	(68.8	60-135	0			
MSD Sample ID:	1302018-01BMSD				Units: mg	/Kg	Analys	is Date: 2/	6/2013 01	:29 PI
Client ID:	Run I	D: FID-7 _1	130206A	;	SeqNo: 310	4157	Prep Date: 2/5/	2013	DF: 1	
	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Analyte		0.4	33.24	219.8	3 -37.7	70-130	229.1	10	30	SEC
	207.2	3.4	33.24							
Analyte TPH (Oil Range) TPH (Diesel Range)	207.2 76.56	1.7	33.24	75.45	5 3.32	70-130	80.52	5.05	30	SE
ГРН (Oil Range)						70-130 <i>60-135</i>	80.52 2.284	5.05 1.17		SE

Client: Navajo Refining Company

Work Order: 1302082

Project: RO Discharge Sampling

Batch ID: R142225 Instrume	ent ID FID-9		Metho	d: SW80 1	15						
MBLK Sample ID: GBLKS-13	0205-R142225				L	Jnits: mg/	Kg	Analys	sis Date: 2/	5/2013 01	:02 PN
Client ID:	Run	ID: FID-9 _1	130205A		Se	qNo: 310 :	3619	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Gasoline Range Organics Surr: 4-Bromofluorobenzene	U 0.08374	0.050 0.0050	0.1		0	83.7	70-130	0)		
LCS Sample ID: GLCSS-13	0205-R142225				L	Jnits: mg/	Kg	Analys	sis Date: 2/	5/2013 12	2:25 PN
Client ID:	Run	ID: FID-9 _1	130205A		Se	qNo: 310 :	3613	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Gasoline Range Organics	0.942	0.050	1		0	94.2	70-130	0			
Surr: 4-Bromofluorobenzene	0.09701	0.0050	0.1		0	97	70-130	0)		
LCSD Sample ID: GLCSDS-130205-R142225 Units: mg/Kg Analysis Date: 2/5/201											2:44 PN
Client ID:	Run	ID: FID-9 _1	130205A		Se	qNo: 310 :	3616	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.9525	0.050	1		0	95.2	70-130	0.942	1.11	30	
Surr: 4-Bromofluorobenzene	0.09686	0.0050	0.1		0	96.9	70-130	0.09701	0.146	30	
MS Sample ID: 1302018-0	4ZMS				L	Jnits: mg/	Kg	Analys	sis Date: 2/	5/2013 04	:11 PN
Client ID:	Run	ID: FID-9 _1	130205A		Se	qNo: 310 :	3628	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.8005	0.050	1		0	80	70-130	0)		
Surr: 4-Bromofluorobenzene	0.08728	0.0050	0.1		0	87.3	70-130	0)		
MSD Sample ID: 1302018-0	4ZMSD				L	Jnits: mg/	Kg	Analys	sis Date: 2/	5/2013 04	:30 PN
- F - F		ID: FID-9	130205A		Se	qNo: 310 :	3632	Prep Date:		DF: 1	
· ·	Run	1B. 11B 0_									
Client ID:	Run Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Client ID: Analyte Gasoline Range Organics			SPK Val		0	%REC 81.2					Qual

Client: Navajo Refining Company

Work Order: 1302082

Project: RO Discharge Sampling

Batch ID: 6758	Instrument ID ICPMS05		Method	: SW602	20					
MBLK S	Sample ID: MBLKS1-020513-67584				Units: mg/	Kg	Analy	sis Date: 2	/8/2013 12	2:22 PM
Client ID:	Ru	n ID: ICPMS	05_130208A		SeqNo: 310	6572	Prep Date: 2/5	5/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	U	1.0								
Arsenic	U	0.50								
Barium	U	0.50								
Boron	U	2.5								
Cadmium	U	0.50								
Calcium	U	50								
Chromium	U	0.50								
Cobalt	U	0.50								
Copper	U	0.50								
Iron	U	50								
Lead	U	0.50								
Manganese	U	0.50								
Molybdenum	U	0.50								
Nickel	U	0.50								
Potassium	U	50								
Selenium	U	0.50								
Silver	U	0.50								
Sodium	U	50								
Uranium	U	0.50								
Zinc	U	0.50								

Client: Navajo Refining Company

Work Order: 1302082

Project: RO Discharge Sampling

Batch ID: 675	84 Instrument ID ICPMS05		Method:	SW602	20						
LCS	Sample ID: MLCSS1-020513-67584				L	Jnits: mg/	Kg	Analysis I	Date: 2	/6/2013 0	5:15 PM
Client ID:	Rur	n ID: ICPMS	05_130206A		SeqNo: 3104261			Prep Date: 2/5/20	13	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	11.63	1.0	10		0	116	80-120	0			
Arsenic	10.09	0.50	10		0	101	80-120	0			
Barium	10.49	0.50	10		0	105	80-120	0			
Boron	55.62	2.5	50		0	111	80-120	0			
Cadmium	10.17	0.50	10		0	102	80-120	0			
Calcium	1031	50	1000		0	103	80-120	0			
Chromium	10.57	0.50	10		0	106	80-120	0			
Cobalt	10.08	0.50	10		0	101	80-120	0			
Copper	10.5	0.50	10		0	105	80-120	0			
Iron	1021	50	1000		0	102	80-120	0			
Lead	10.22	0.50	10		0	102	80-120	0			
Manganese	10.18	0.50	10		0	102	80-120	0			
Molybdenum	10.14	0.50	10		0	101	80-120	0			
Nickel	10.22	0.50	10		0	102	80-120	0			
Potassium	1020	50	1000		0	102	80-120	0			
Selenium	10.63	0.50	10		0	106	80-120	0			
Silver	10.11	0.50	10		0	101	80-120	0			
Sodium	1065	50	1000		0	106	80-120	0			
Uranium	9.751	0.50	10		0	97.5	80-120	0			
Zinc	10.48	0.50	10		0	105	80-120	0			

Client: Navajo Refining Company

Work Order: 1302082

Project: RO Discharge Sampling

Batch ID: 67584	Instrument ID IC	PMS05		Method:	SW6020						
MS Sa	ample ID: 1302079-01CMS				l	Jnits: mg/	Kg	Analys	is Date: 2	/6/2013 05	:22 PN
Client ID:		Run I	D: ICPMS	05_130206A	Se	qNo: 310 4	4264	Prep Date: 2/5/	2013	DF: 1	
					SPK Ref		Control	RPD Ref		RPD	
Analyte		Result	PQL	SPK Val	Value	%REC	Limit	Value	%RPD	Limit	Qual
Aluminum		10850	0.95	9.479	10650	2130	75-125	0			SEO
Arsenic		11.05	0.47	9.479	3.675	77.8	75-125	0			
Barium		119.3	0.47	9.479	140.7	-226	75-125	0			SO
Cadmium		8.126	0.47	9.479	0.2899	82.7	75-125	0			
Calcium		58010	47	947.9	63280	-555	75-125	0			SEC
Chromium		19.97	0.47	9.479	11.93	84.9	75-125	0			
Cobalt		12.3	0.47	9.479	4.223	85.2	75-125	0			
Copper		16.19	0.47	9.479	7.518	91.5	75-125	0			
Iron		8984	47	947.9	8371	64.7	75-125	0			SO
Lead		22.47	0.47	9.479	9.213	140	75-125	0			S
Manganese		313.3	0.47	9.479	323.3	-106	75-125	0			SEC
Molybdenum		7.01	0.47	9.479	0.782	65.7	75-125	0			S
Nickel		16.57	0.47	9.479	8.837	81.6	75-125	0			
Potassium		3413	47	947.9	2567	89.3	75-125	0			
Selenium		8.236	0.47	9.479	0.7589	78.9	75-125	0			
Silver		7.989	0.47	9.479	0.04949	83.8	75-125	0			
Uranium		8.144	0.47	9.479	0.4497	81.2	75-125	0			
Zinc		39.14	0.47	9.479	30	96.4	75-125	0			
MS Sa	ample ID: 1302079-01CMS				l	Jnits: mg/	Kg	Analys	is Date: 2	/7/2013 03	:38 PN
Client ID:		Run I	D: ICPMS	05_130207A	Se	qNo: 310	5768	Prep Date: 2/5/	2013	DF: 2	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Boron		44.25	4.7	47.39	6.718	79.2	75-125	0			
Sodium		1077	95	947.9	257.4	86.4	75-125	0			

Client: Navajo Refining Company

Work Order: 1302082

Project: RO Discharge Sampling

Batch ID: 67584	Instrument ID ICPMS05		Wicti lou.	SW6020	l loito: man	// o.	Analysi	o Doto: 24	C/2042 OF	-05 DM
•	e ID: 1302079-01CMSD				Units: mg/	_		s Date: 2/		:25 PW
Client ID:	Run II	D: ICPMS	05_130206A	Se	eqNo: 310	4265	Prep Date: 2/5/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	12260	0.94	9.414	10650	17200	75-125	10850	12.2	25	SEO
Arsenic	11.58	0.47	9.414	3.675	84	75-125	11.05	4.7	25	
Barium	137.2	0.47	9.414	140.7	-36.9	75-125	119.3	14	25	SO
Cadmium	8.231	0.47	9.414	0.2899	84.4	75-125	8.126	1.29	25	
Calcium	69590	47	941.4	63280	670	75-125	58010	18.1	25	SEC
Chromium	21.3	0.47	9.414	11.93	99.5	75-125	19.97	6.43	25	
Cobalt	12.66	0.47	9.414	4.223	89.6	75-125	12.3	2.86	25	
Copper	15.66	0.47	9.414	7.518	86.5	75-125	16.19	3.36	25	
Iron	9940	47	941.4	8371	167	75-125	8984	10.1	25	so
Lead	15.81	0.47	9.414	9.213	70.1	75-125	22.47	34.8	25	SR
Manganese	389.5	0.47	9.414	323.3	703	75-125	313.3	21.7	25	SEC
Molybdenum	7.48	0.47	9.414	0.782	71.2	75-125	7.01	6.49	25	S
Nickel	17.56	0.47	9.414	8.837	92.6	75-125	16.57	5.76	25	
Potassium	3553	47	941.4	2567	105	75-125	3413	4	25	
Selenium	8.862	0.47	9.414	0.7589	86.1	75-125	8.236	7.33	25	
Silver	8.142	0.47	9.414	0.04949	86	75-125	7.989	1.89	25	
Uranium	8.356	0.47	9.414	0.4497	84	75-125	8.144	2.57	25	
Zinc	39.15	0.47	9.414	30	97.2	75-125	39.14	0.0385	25	

MSD	Sample ID: 1302079-01CMSD					Units: mg/	/Kg	Analysis Date: 2/7/2013 03:40 PM				
Client ID:		Run II	: ICPMS	05_130207	A	SeqNo: 310	5769	Prep Date: 2/5/	2013	DF: 2		
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Boron		42.5	4.7	47.07	6.7	18 76	75-125	44.25	4.05	25		
Sodium		1054	94	941.4	257	.4 84.7	75-125	1077	2.08	25		

Client: Navajo Refining Company

Work Order: 1302082

Project: RO Discharge Sampling

Batch ID: 675	Instrument ID ICP	MS05		Method:	SW602	20						
DUP	Sample ID: 1302079-01CDUP					U	Jnits: mg/	Kg	Analysi	s Date: 2	/6/2013 05	:20 PN
Client ID:		Run ID:	ICPMS	05_130206A		Se	qNo: 310	1263	Prep Date: 2/5/2	2013	DF: 1	
Analyte	R	esult	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Arsenic		3.417	0.48	0		0	0	0-0	3.675	7.25	25	
Barium		104.4	0.48	0		0	0	0-0	140.7	29.6		R
Cadmium		2602	0.48	0		0	0	0-0	0.2899	0		J
Chromium		11.21	0.48	0		0	0	0-0	11.93	6.26		
Cobalt		1.016	0.48	0		0	0	0-0	4.223	5.03		
Copper	7	7.396	0.48	0		0	0	0-0	7.518	1.64		
Iron		7861	48	0		0	0	0-0	8371	6.29		
Lead	8	3.881	0.48	0		0	0	0-0	9.213	3.66		
Molybdenum	0.	6964	0.48	0		0	0	0-0	0.782	11.6	25	
Nickel	8	3.596	0.48	0		0	0	0-0	8.837	2.76	25	
Potassium		2446	48	0		0	0	0-0	2567	4.83	25	
Selenium	0.	8408	0.48	0		0	0	0-0	0.7589	10.2	25	
Silver		U	0.48	0		0	0	0-0	0.04949	0	25	
Jranium		U	0.48	0		0	0		0.4497	0	25	
Zinc	2	27.76	0.48	0		0	0	0-0	30	7.75	25	
DUP	Sample ID: 1302079-01CDUP					U	Inits: mg/	Kg	Analysi	s Date: 2	/6/2013 06	:38 PN
Client ID:		Run ID:	ICPMS	05_130206A		Se	qNo: 310	1419	Prep Date: 2/5/2	2013	DF: 10 0	0
Analyte	R	esult	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Aluminum		9534	96	0		0	0	0-0	11780	21.1	25	
Calcium		8170	4,800	0		0	0	0-0	64880	10.9		
Manganese		291.2	48	0		0	0	0-0	317.5	8.63		
DUP	Sample ID: 1302079-01CDUP					U	Inits: mg/	Kg	Analysi	s Date: 2	7/2013 03	:35 PI
Client ID:		Run ID:	ICPMS	05_130207A			qNo: 310	_	Prep Date: 2/5/2		DF: 2	
Analyte	R	esult	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
· · · · · · · · · · · · · · · · · · ·						_			A = : =			
Boron		5.198	4.8	0		0	0	0-0	6.718	25.5		R
Sodium The following	g samples were analyzed in thi	236.7 s batch:		0 802082-01C 802082-09A	13	0	0 82-03A	0-0	257.4 02082-06A	8.37	25	

Client: Navajo Refining Company

Work Order: 1302082

Project: RO Discharge Sampling

Batch ID: 67	7586 Instrument	ID HG02		Method	d: SW747	1A					
MBLK	Sample ID: GBLKS2-020	0513-67586				Units: µg/	'Kg	Analy	sis Date: 2	/5/2013 05	:08 PN
Client ID:		Run II	: HG02 _	130205A		SeqNo: 310)2385	Prep Date: 2/5	5/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Mercury		U	3.3								
LCS	Sample ID: GLCSS2-020	0513-67586				Units: µg/	'Kg	Analy	sis Date: 2	/5/2013 05	:10 PN
Client ID:		Run II	D: HG02 _	130205A		SeqNo: 310)2386	Prep Date: 2/5	5/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Mercury		342.7	3.3	333.3		0 103	85-115	(0		
MS	Sample ID: 1302097-02	AMS				Units: µg/	'Kg	Analy	sis Date: 2	/5/2013 05	:16 PI
Client ID:		Run II	D: HG02 _	130205A		SeqNo: 310	2389	Prep Date: 2/5	5/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Mercury		318.7	3.4	344.1	2.74	13 91.8	85-115	(0		
MSD	Sample ID: 1302097-02	AMSD				Units: µg/	'Kg	Analy	sis Date: 2	/5/2013 05	:18 PI
Client ID:		Run II	D: HG02 _	130205A		SeqNo: 310	2390	Prep Date: 2/5	5/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Mercury		311.1	3.4	336.7	2.74	13 91.6	85-115	318.	7 2.39	20	
DUP	Sample ID: 1302097-02	ADUP				Units: µg/	'Kg	Analy	sis Date: 2	/5/2013 05	:14 PI
Client ID:		Run II	D: HG02 _	130205A		SeqNo: 310	2388	Prep Date: 2/5	5/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Mercury		3.425	3.5	0		0 0		2.74	3 0	20	J
The followi	ing samples were analyze	d in this batch:	13	302082-01C 302082-09A 302082-18A	13	02082-03A 02082-12A 02082-21C		02082-06A 02082-15A			

Client: Navajo Refining Company

Work Order: 1302082

Project: RO Discharge Sampling

Batch ID: 676	Instrument ID ICP7500)	Method	SW602	20					
MBLK	Sample ID: MBLKS1-020613-67614				Units: mg/	Kg	Analy	sis Date: 2	/9/2013 04	1:32 AM
Client ID:	F	Run ID: ICP750	0_130208A		SeqNo: 3108	8631	Prep Date: 2/6	6/2013	DF: 1	
Analyte	Resul	t PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	U	1.0								
Arsenic	U	0.50								
Barium	U	0.50								
Boron	U	2.5								
Cadmium	U	0.50								
Calcium	U	50								
Chromium	U	0.50								
Cobalt	U	0.50								
Copper	U	0.50								
Iron	U	50								
Lead	U	0.50								
Manganese	U	0.50								
Molybdenum	U	0.50								
Nickel	U	0.50								
Potassium	U	50								
Selenium	U	0.50								
Silver	U	0.50								
Sodium	12.79	50								J
Uranium	U	0.50								
Zinc	U	0.50								

Client: Navajo Refining Company

Work Order: 1302082

Project: RO Discharge Sampling

Batch ID: 67614	Instrument ID ICP7500		Method:	SW602	20						
LCS Sample	e ID: MLCSS1-020613-67614				ι	Jnits: mg/	Kg	Analysis	s Date: 2	/9/2013 0	4:37 AM
Client ID:	Rur	ID: ICP750	0_130208A		Se	qNo: 310 8	3632	Prep Date: 2/6/2	013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	9.744	1.0	10		0	97.4	80-120	0			
Arsenic	9.261	0.50	10		0	92.6	80-120	0			
Barium	9.774	0.50	10		0	97.7	80-120	0			
Boron	50.49	2.5	50		0	101	80-120	0			
Cadmium	9.714	0.50	10		0	97.1	80-120	0			
Calcium	945.9	50	1000		0	94.6	80-120	0			
Chromium	9.611	0.50	10		0	96.1	80-120	0			
Cobalt	9.612	0.50	10		0	96.1	80-120	0			
Copper	9.754	0.50	10		0	97.5	80-120	0			
Iron	948.3	50	1000		0	94.8	80-120	0			
Lead	9.646	0.50	10		0	96.5	80-120	0			
Manganese	9.443	0.50	10		0	94.4	80-120	0			
Molybdenum	9.737	0.50	10		0	97.4	80-120	0			
Nickel	9.653	0.50	10		0	96.5	80-120	0			
Potassium	963	50	1000		0	96.3	80-120	0			
Selenium	9.298	0.50	10		0	93	80-120	0			
Silver	9.768	0.50	10		0	97.7	80-120	0			
Sodium	913.8	50	1000		0	91.4	80-120	0			
Uranium	9.652	0.50	10		0	96.5	80-120	0			
Zinc	10.36	0.50	10		0	104	80-120	0			

Client: Navajo Refining Company

Work Order: 1302082

Project: RO Discharge Sampling

Batch ID: 67614	Instrument ID ICP7500		Method:	SW6020					
MS Sample	ID: 1302140-04DMS			į	Jnits: mg/	Kg	Analysis Date: 2	2/9/2013 04	:57 AM
Client ID:	Run II	D: ICP750	0_130208A	Se	eqNo: 310 8	3636	Prep Date: 2/6/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value %RPD	RPD Limit	Qual
Aluminum	7025	0.94	9.374	4871	23000	75-125	0		SEO
Arsenic	11.02	0.47	9.374	2.822	87.5	75-125	0		
Barium	123.6	0.47	9.374	122.3	14.1	75-125	0		SO
Boron	45.84	2.3	46.87	5.579	85.9	75-125	0		
Cadmium	9.046	0.47	9.374	0.5305	90.8	75-125	0		
Calcium	17840	47	937.4	23680	-623	75-125	0		SEO
Chromium	16.87	0.47	9.374	7.15	104	75-125	0		
Cobalt	12.05	0.47	9.374	3.132	95.2	75-125	0		
Copper	35.89	0.47	9.374	42.82	-73.9	75-125	0		SO
Iron	8292	47	937.4	8312	-2.13	75-125	0		so
Lead	36.62	0.47	9.374	26.49	108	75-125	0		
Manganese	238.4	0.47	9.374	242.5	-44.4	75-125	0		SEO
Molybdenum	7.522	0.47	9.374	0.3186	76.8	75-125	0		
Nickel	16.93	0.47	9.374	7.079	105	75-125	0		
Potassium	2298	47	937.4	1072	131	75-125	0		S
Selenium	7.673	0.47	9.374	0.558	75.9	75-125	0		
Silver	8.075	0.47	9.374	0.06591	85.4	75-125	0		
Sodium	950.5	47	937.4	100.1	90.7	75-125	0		
Uranium	8.896	0.47	9.374	0.3588	91.1	75-125	0		
Zinc	94.58	0.47	9.374	107.1	-133	75-125	0		so

Client: Navajo Refining Company

Work Order: 1302082

Project: RO Discharge Sampling

Batch ID: 67614	Instrument ID ICP7500		Method	SW6020						
MSD Samp	le ID: 1302140-04DMSD			l	Jnits: mg/	Kg	Analysi	s Date: 2/	9/2013 05	:02 AM
Client ID:	Run I	D: ICP750	0_130208A	Se	eqNo: 310	3637	Prep Date: 2/6/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	6405	0.92	9.174	4871	16700	75-125	7025	9.24	25	SEO
Arsenic	10.39	0.46	9.174	2.822	82.4	75-125	11.02	5.96	25	
Barium	130.5	0.46	9.174	122.3	88.7	75-125	123.6	5.37	25	0
Boron	45.58	2.3	45.87	5.579	87.2	75-125	45.84	0.569	25	
Cadmium	8.667	0.46	9.174	0.5305	88.7	75-125	9.046	4.28	25	
Calcium	16380	46	917.4	23680	-796	75-125	17840	8.55	25	so
Chromium	15.68	0.46	9.174	7.15	93	75-125	16.87	7.34	25	
Cobalt	11.17	0.46	9.174	3.132	87.7	75-125	12.05	7.58	25	
Copper	47.09	0.46	9.174	42.82	46.5	75-125	35.89	27	25	SRO
Iron	7529	46	917.4	8312	-85.3	75-125	8292	9.64	25	SO
Lead	50.8	0.46	9.174	26.49	265	75-125	36.62	32.4	25	SR
Manganese	208.3	0.46	9.174	242.5	-373	75-125	238.4	13.4	25	SEO
Molybdenum	7.575	0.46	9.174	0.3186	79.1	75-125	7.522	0.711	25	
Nickel	15.42	0.46	9.174	7.079	90.9	75-125	16.93	9.32	25	
Potassium	2140	46	917.4	1072	116	75-125	2298	7.12	25	
Selenium	7.369	0.46	9.174	0.558	74.2	75-125	7.673	4.05	25	S
Silver	7.903	0.46	9.174	0.06591	85.4	75-125	8.075	2.15	25	
Sodium	913.2	46	917.4	100.1	88.6	75-125	950.5	4	25	
Uranium	8.802	0.46	9.174	0.3588	92	75-125	8.896	1.06	25	
Zinc	99.72	0.46	9.174	107.1	-79.9	75-125	94.58	5.29	25	so

Client: Navajo Refining Company

Work Order: 1302082

Project: RO Discharge Sampling

Batch ID: 676	Instrument ID ICP7500		Method:	SW602	0						
DUP	Sample ID: 1302140-04DDUP				Ĺ	Jnits: mg/	Kg	Analysi	is Date: 2/	9/2013 04	:47 AM
Client ID:	Run II	D: ICP75 0	00_130208A		Se	qNo: 310 8	3634	Prep Date: 2/6/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	2.429	0.48	0		0	0	0-0	2.822	15	25	
Barium	109.8	0.48	0		0	0	0-0	122.3	10.7	25	
Boron	4.679	2.4	0		0	0	0-0	5.579	17.6	25	
Cadmium	0.2243	0.48	0		0	0	0-0	0.5305	0	25	J
Calcium	14370	48	0		0	0	0-0	23680	48.9	25	R
Chromium	6.999	0.48	0		0	0	0-0	7.15	2.14	25	
Cobalt	3.153	0.48	0		0	0	0-0	3.132	0.666	25	
Copper	27.2	0.48	0		0	0	0-0	42.82	44.6	25	R
Iron	6377	48	0		0	0	0-0	8312	26.3	25	R
Lead	32.69	0.48	0		0	0	0-0	26.49	20.9	25	
Molybdenum	0.2131	0.48	0		0	0	0-0	0.3186	0	25	J
Nickel	7.336	0.48	0		0	0	0-0	7.079	3.56	25	
Potassium	1171	48	0		0	0	0-0	1072	8.75	25	
Selenium	0.564	0.48	0		0	0	0-0	0.558	1.07	25	
Silver	U	0.48	0		0	0	0-0	0.06591	0	25	
Sodium	121.3	48	0		0	0	0-0	100.1	19.1	25	
Uranium	U	0.48	0		0	0		0.3588	0	25	
Zinc	78.48	0.48	0		0	0	0-0	107.1	30.8	25	R
DUP	Sample ID: 1302140-04DDUP				ι	Jnits: mg/	Kg	Analysi	is Date: 2/	11/2013 0	9:15 PM
Client ID:	Run II	D: ICPMS	03_130211A		Se	qNo: 310 9	9667	Prep Date: 2/6/2	2013	DF: 50	
				SPK Ref			Control	RPD Ref		RPD	
Analyte	Result	PQL	SPK Val	Value		%REC	Limit	Value	%RPD	Limit	Qual
Aluminum	5929	48	0		0	0	0-0	4945	18.1	25	
Manganese	184.8	24	0		0	0	0-0	230.8	22.1	25	
The followin	g samples were analyzed in this batch:		302082-12A 302082-21C	13	020)82-15A	13	02082-18A			

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

Client: Navajo Refining Company

Work Order: 1302082

Project: RO Discharge Sampling

Batch ID: 67581	Instrument ID SV-4		Metho	d: SW827	0						
MBLK Sample ID: \$	SBLKS1-130205-67581				Ų	Jnits: µg/l	(g	Analy	sis Date: 2	/5/2013 0 ⁻	1:55 PM
Client ID:	Ru	n ID: SV-4_1	30205B		Se	qNo: 310	2442	Prep Date: 2/5	/2013	DF: 1	
				SPK Ref			Control	RPD Ref		RPD	
Analyte	Result	PQL	SPK Val	Value		%REC	Limit	Value	%RPD	Limit	Qual
1-Methylnaphthalene	U	6.6									
2-Methylnaphthalene	U	6.6									
Benzo(a)pyrene	U	6.6									
Naphthalene	U	6.6									
Surr: 2,4,6-Tribromophei	nol 115.2	6.6	166.7		0	69.1	36-126	()		
Surr: 2-Fluorobiphenyl	135.8	6.6	166.7		0	81.5	43-125	()		
Surr: 2-Fluorophenol	116.8	6.6	166.7		0	70.1	37-125	()		
Surr: 4-Terphenyl-d14	161.5	6.6	166.7		0	96.9	32-125	()		
Surr: Nitrobenzene-d5	129.6	6.6	166.7		0	77.7	37-125	()		
Surr: Phenol-d6	120.6	6.6	166.7		0	72.4	40-125	()		
LCS Sample ID: \$	SLCSS1-130205-67581				ι	Jnits: µg/l	(g	Analy	sis Date: 2	/5/2013 02	2:15 PM
Client ID:	Ru	n ID: SV-4_1	30205B		Se	qNo: 310	2443	Prep Date: 2/5	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	152.5	6.6	166.7		0	91.5	50-120	()		
2-Methylnaphthalene	153.8	6.6	166.7		0	92.3	50-120	()		
Benzo(a)pyrene	136.8	6.6	166.7		0	82.1	50-130	()		
Naphthalene	149.2	6.6	166.7		0	89.5	50-125	()		
Surr: 2,4,6-Tribromophei	nol 142.1	6.6	166.7		0	85.3	36-126	()		
Surr: 2-Fluorobiphenyl	150.5	6.6	166.7		0	90.3	43-125	()		
Surr: 2-Fluorophenol	117.9	6.6	166.7		0	70.8	37-125	()		
Surr: 4-Terphenyl-d14	170.9	6.6	166.7		0	103	32-125	()		
Surr: Nitrobenzene-d5	136.3	6.6	166.7		0	81.8	37-125	()		
Surr: Phenol-d6	120.3	6.6	166.7		0	72.2	40-125	(

Client: Navajo Refining Company

Work Order: 1302082

Project: RO Discharge Sampling

Batch ID: 67581 Instrume	ent ID SV-4		Metho	d: SW8270						
MS Sample ID: 1302050-0	6CMS			l	Jnits: µg/k	(g	Analys	s Date: 2/	5/2013 05	:39 PN
Client ID:	Run II): SV-4_1	30205B	Se	eqNo: 310	2445	Prep Date: 2/5/2	2013	DF: 10	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	4344	66	166.3	1316	1820	50-120	0			SEC
2-Methylnaphthalene	5004	66	166.3	1528	2090	50-120	0			SEC
Benzo(a)pyrene	123.5	66	166.3	2.558	72.8	50-130	0			
Naphthalene	147.1	66	166.3	0	88.5	50-125	0			
Surr: 2,4,6-Tribromophenol	102.1	66	166.3	0	61.4	36-126	0			
Surr: 2-Fluorobiphenyl	176.2	66	166.3	0	106	43-125	0			
Surr: 2-Fluorophenol	89.44	66	166.3	0	53.8	37-125	0			
Surr: 4-Terphenyl-d14	126.1	66	166.3	0	75.9	32-125	0			
Surr: Nitrobenzene-d5	131.6	66	166.3	0	79.1	37-125	0			
Surr: Phenol-d6	101.7	66	166.3	0	61.2	40-125	0			
MSD Sample ID: 1302050-0	6CMSD			l	Jnits: µg/k	(g	Analys	s Date: 2/	5/2013 05	:59 PN
Client ID:	Run II): SV-4_1	30205B	Se	eqNo: 310 2	2446	Prep Date: 2/5/2	2013	DF: 10	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
1-Methylnaphthalene	4603	66	166.2	1316	1980	50-120	4344	5.78	30	SEC
2-Methylnaphthalene	5426	66	166.2	1528	2350	50-120	5004	8.09	30	SEC
Benzo(a)pyrene	104.2	66	166.2	2.558	61.2	50-130	123.5	17	30	
Naphthalene	181.7	66	166.2	0	109	50-125	147.1	21.1	30	
Surr: 2,4,6-Tribromophenol	113	66	166.2	0	68	36-126	102.1	10.1	30	
Surr: 2-Fluorobiphenyl	171.2	66	166.2	0	103	43-125	176.2	2.92	30	
Surr: 2-Fluorophenol	87.26	66	166.2	0	52.5	37-125	89.44	2.47	30	
Surr: 4-Terphenyl-d14	171.5	66	166.2	0	103	32-125	126.1	30.5	30	R
Surr: Nitrobenzene-d5	141.5	66	166.2	0	85.1	37-125	131.6	7.27	30	
Surr: Phenol-d6	121.6	66	166.2	0	73.2	40-125	101.7	17.8	30	

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

The following samples were analyzed in this batch:

Note:

1302082-01D

1302082-21D

Client: Navajo Refining Company

Work Order: 1302082

Project: RO Discharge Sampling

Batch ID: R142091	Instrument ID VOA5		Method	: SW826	60					
MBLK Sample ID: V	/BLKS1-020413-R142091				Units: µg/	Kg	Analy	/sis Date: 2	/4/2013 0	2:20 PM
Client ID:	Run II	D: VOA5_	130204A		SeqNo: 310	1239	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	U	5.0								
1,1,2,2-Tetrachloroethane	U	5.0								
1,1,2-Trichloroethane	U	5.0								
1,1-Dichloroethane	U	5.0								
1,1-Dichloroethene	U	5.0								
1,2-Dibromoethane	U	5.0								
1,2-Dichloroethane	U	5.0								
Benzene	U	5.0								
Carbon tetrachloride	U	5.0								
Chloroform	U	5.0								
Ethylbenzene	U	5.0								
Methylene chloride	U	10								
Tetrachloroethene	U	5.0								
Toluene	U	5.0								
Trichloroethene	U	5.0								
Vinyl chloride	U	2.0								
Xylenes, Total	U	15								
Surr: 1,2-Dichloroethane	e-d4 43.64	0	50		0 87.3	70-128		0		
Surr: 4-Bromofluorobenz	zene 46.3	0	50		0 92.6	73-126		0		
Surr: Dibromofluorometh	nane 48.2	0	50		0 96.4	71-128		0		
Surr: Toluene-d8	51.1	0	50		0 102	73-127	•	0		

Client: Navajo Refining Company

Work Order: 1302082

Project: RO Discharge Sampling

Batch ID: R142091	Instrument ID VOA5		Method	: SW826	0						
LCS Sample ID: V	VLCSS1-020413-R142091				L	Jnits: µg/k	(g	Analy	sis Date: 2	/4/2013 1	2:48 PM
Client ID:	Run II	D: VOA5 _	130204A		Se	qNo: 310 ′	1238	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	56.36	5.0	50		0	113	79-124	()		
1,1,2,2-Tetrachloroethane	55.2	5.0	50		0	110	75-123	()		
1,1,2-Trichloroethane	60.76	5.0	50		0	122	79-120	()		S
1,1-Dichloroethane	57.8	5.0	50		0	116	75-124	()		
1,1-Dichloroethene	58.39	5.0	50		0	117	80-122	()		
1,2-Dibromoethane	55.86	5.0	50		0	112	79-120	()		
1,2-Dichloroethane	53.68	5.0	50		0	107	73-121	()		
Benzene	56.68	5.0	50		0	113	79-120	()		
Carbon tetrachloride	54.78	5.0	50		0	110	74-126	()		
Chloroform	51.07	5.0	50		0	102	78-120	()		
Ethylbenzene	59.14	5.0	50		0	118	80-122	()		
Methylene chloride	57.27	10	50		0	115	70-123	()		
Tetrachloroethene	55.19	5.0	50		0	110	80-121	()		
Toluene	59.27	5.0	50		0	119	79-120	()		
Trichloroethene	59.99	5.0	50		0	120	80-121	()		
Vinyl chloride	58.95	2.0	50		0	118	76-126	()		
Xylenes, Total	169.3	15	150		0	113	80-120	()		
Surr: 1,2-Dichloroethane	e-d4 45.09	0	50		0	90.2	70-128	()		
Surr: 4-Bromofluorobenz	zene 48.08	0	50		0	96.2	73-126	()		
Surr: Dibromofluorometh	nane 49.73	0	50		0	99.5	71-128	()		
Surr: Toluene-d8	50.18	0	50		0	100	73-127	()		

Client: Navajo Refining Company

Work Order: 1302082

Project: RO Discharge Sampling

Batch ID: R142091	Instrument ID VOA5		Method	: SW8260						
MS Sample ID:	1302079-15AMS				Units: µg/	Kg	Analys	is Date: 2	2/4/2013 0	4:14 PM
Client ID:	R	un ID: VOA5_	130204A		SeqNo: 310	1244	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	45.09	5.0	50	C	90.2	79-124	0			
1,1,2,2-Tetrachloroethane	40.5	5.0	50	C	81	75-123	0			
1,1,2-Trichloroethane	47.23	5.0	50	C	94.5	79-120	0			
1,1-Dichloroethane	43.45	5.0	50	C	86.9	75-124	0			
1,1-Dichloroethene	51.45	5.0	50	C	103	80-122	0			
1,2-Dibromoethane	42.06	5.0	50	C	84.1	79-120	0			
1,2-Dichloroethane	38.83	5.0	50	C	77.7	73-121	0			
Benzene	44.11	5.0	50	C	88.2	79-120	0			
Carbon tetrachloride	42.94	5.0	50	C	85.9	74-126	0			
Chloroform	42.73	5.0	50	C	85.5	78-120	0			
Ethylbenzene	47.73	5.0	50	C	95.5	80-122	0			
Methylene chloride	51.41	10	50	5.438	92	70-123	0			
Tetrachloroethene	45.2	5.0	50	C	90.4	80-121	0			
Toluene	46.35	5.0	50	C	92.7	79-120	0			
Trichloroethene	49	5.0	50	C	98	80-121	0			
Vinyl chloride	53.2	2.0	50	C	106	76-126	0			
Xylenes, Total	136.9	15	150	C	91.3	80-120	0			
Surr: 1,2-Dichloroethane	e-d4 41.91	0	50	C	83.8	70-128	0			
Surr: 4-Bromofluorobenz	zene 47.54	0	50	C	95.1	73-126	0			
Surr: Dibromofluorometh	nane 48.39	0	50	C	96.8	71-128	0			
Surr: Toluene-d8	46.26	0	50	C	92.5	73-127	0			

Client: Navajo Refining Company

Work Order: 1302082

Project: RO Discharge Sampling

Batch ID: R142091	Instrument ID VOA5	Method: SW8260
-------------------	--------------------	----------------

MSD Sample ID: 1302079-15AMSD					Units: µg/I	K g	Analysis Date: 2/4/2013 04:37 PM				
Client ID:	Run II	Se	eqNo: 310	1245	Prep Date: DF: 1						
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua	
1,1,1-Trichloroethane	58.61	5.0	50	0	117	79-124	45.09	26.1	30		
1,1,2,2-Tetrachloroethane	55.12	5.0	50	0	110	75-123	40.5	30.6	30	R	
1,1,2-Trichloroethane	59.39	5.0	50	0	119	79-120	47.23	22.8	30		
1,1-Dichloroethane	60.52	5.0	50	0	121	75-124	43.45	32.8	30	R	
1,1-Dichloroethene	59.58	5.0	50	0	119	80-122	51.45	14.6	30		
1,2-Dibromoethane	51.67	5.0	50	0	103	79-120	42.06	20.5	30		
1,2-Dichloroethane	50.73	5.0	50	0	101	73-121	38.83	26.6	30		
Benzene	56.02	5.0	50	0	112	79-120	44.11	23.8	30		
Carbon tetrachloride	47.91	5.0	50	0	95.8	74-126	42.94	10.9	30		
Chloroform	54.38	5.0	50	0	109	78-120	42.73	24	30		
Ethylbenzene	59.74	5.0	50	0	119	80-122	47.73	22.3	30		
Methylene chloride	67.26	10	50	5.438	124	70-123	51.41	26.7	30	S	
Tetrachloroethene	71.23	5.0	50	0	142	80-121	45.2	44.7	30	SR	
Toluene	60.02	5.0	50	0	120	79-120	46.35	25.7	30	S	
Trichloroethene	61.37	5.0	50	0	123	80-121	49	22.4	30	S	
Vinyl chloride	65.39	2.0	50	0	131	76-126	53.2	20.6	30	S	
Xylenes, Total	171.4	15	150	0	114	80-120	136.9	22.4	30		
Surr: 1,2-Dichloroethane-d4	51.28	0	50	0	103	70-128	41.91	20.1	30		
Surr: 4-Bromofluorobenzene	49.44	0	50	0	98.9	73-126	47.54	3.91	30		
Surr: Dibromofluoromethane	51.14	0	50	0	102	71-128	48.39	5.54	30		
Surr: Toluene-d8	49.69	0	50	0	99.4	73-127	46.26	7.15	30		

The following samples were analyzed in this batch:

Note:

1302082-01A 1302082-21A

Client: Navajo Refining Company

Work Order: 1302082

Project: RO Discharge Sampling

MBLK Sample ID: VBLKW-130205-R142161 Client ID: VOA4_130205A SeqNo: 3102121 Prep Date: 2 Prep Date: 3 PQL SPK Ref SeqNo: 3102121 Prep Date: 3 PRD Ref SPK Ref SeqNo: 3102121 Prep Date: 3 PRD Ref SPK Ref SeqNo: 3102121 Prep Date: 3 PRD Ref SPK Ref SeqNo: 3102121 Prep Date: 3 PRD Ref SPK Ref SeqNo: 3102121 Prep Date: 3 PRD Ref SeqNo: 3102121 Prep Date: 3102121 Prep)	d: SW826	Method		Instrument ID VOA4	Batch ID: R142161		
Analyte Result PQL SPK Val Value %REC Control Limit RPD Ref Value %RPD 1,1,1-Trichloroethane U 1.0	te: 2/5/2013 10:49 AM	ysis Date: 2/	Analy		Units: µg/L				/BLKW-130205-R142161	MBLK Sample ID: VBLKW-13		
Analyte Result PQL SPK Val Value %REC Limit Value %RPD 1,1,1-Trichloroethane U 1.0	DF: 1		Prep Date:	2121	SeqNo: 3102121		130205A	ID: VOA4 _	Run I	Client ID:		
1,1,2,2-Tetrachloroethane U 1.0 1,1,2-Trichloroethane U 1.0 1,1-Dichloroethane U 1.0 1,2-Dichloroethane U 1.0 1,2-Dichloroethane U 1.0 Benzene U 1.0 Carbon tetrachloride U 1.0 Chloroform U 1.0 Ethylbenzene U 1.0 Methylene chloride U 2.0 Tetrachloroethene U 1.0 Toluene U 1.0 Trichloroethene U 1.0 Vinyl chloride U 1.0 Xylenes, Total U 1.0 Surr: 1,2-Dichloroethane-d4 47.14 1.0 50 0 94.3 71-125 0 Surr: 4-Bromofluorobenzene 47.73 1.0 50 0 95.5 70-125 0	RPD PD ^{Limit} Qual	%RPD			%REC		SPK Val	PQL	Result	Analyte		
1,1,2-Trichloroethane U 1.0 1,1-Dichloroethane U 1.0 1,1-Dichloroethane U 1.0 1,2-Dibromoethane U 1.0 1,2-Dibromoethane U 1.0 1,2-Dichloroethane U 1.0 Benzene U 1.0 Carbon tetrachloride U 1.0 Chloroform U 1.0 Ethylbenzene U 1.0 Methylene chloride U 1.0 Toluene U 1.0 Trichloroethene U 1.0 Vinyl chloride U 1.0 Xylenes, Total Surr: 1,2-Dichloroethane-d4 47.14 1.0 50 0 94.3 71-125 0 Surr: 4-Bromofluorobenzene 47.73 1.0 50 0 95.5 70-125 0								1.0	U	1,1,1-Trichloroethane		
1,1-Dichloroethane U 1.0 1,1-Dichloroethane U 1.0 1,2-Dibromoethane U 1.0 1,2-Dichloroethane U 1.0 Benzene U 1.0 Carbon tetrachloride U 1.0 Chloroform U 1.0 Ethylbenzene U 1.0 Methylene chloride U 2.0 Tetrachloroethene U 1.0 Trichloroethene U 1.0 Vinyl chloride U 1.0 Xylenes, Total U 1.0 Surr: 1,2-Dichloroethane-d4 47.14 1.0 50 0 94.3 71-125 0 Surr: 4-Bromofluorobenzene 47.73 1.0 50 0 95.5 70-125 0								1.0	U	1,1,2,2-Tetrachloroethane		
1,1-Dichloroethene U 1.0 1,2-Dibromoethane U 1.0 1,2-Dichloroethane U 1.0 Benzene U 1.0 Carbon tetrachloride U 1.0 Chloroform U 1.0 Ethylbenzene U 1.0 Methylene chloride U 2.0 Tetrachloroethene U 1.0 Toluene U 1.0 Trichloroethene U 1.0 Vinyl chloride U 1.0 Xylenes, Total U 1.0 Surr: 1,2-Dichloroethane-d4 47.14 1.0 50 0 94.3 71-125 0 Surr: 4-Bromofiuorobenzene 47.73 1.0 50 0 95.5 70-125 0								1.0	U	1,1,2-Trichloroethane		
1,2-Dibromoethane U 1.0 1,2-Dichloroethane U 1.0 Benzene U 1.0 Carbon tetrachloride U 1.0 Chloroform U 1.0 Ethylbenzene U 1.0 Methylene chloride U 2.0 Tetrachloroethene U 1.0 Toluene U 1.0 Trichloroethene U 1.0 Vinyl chloride U 1.0 Xylenes, Total U 1.0 Surr: 1,2-Dichloroethane-d4 47.14 1.0 50 0 94.3 71-125 0 Surr: 4-Bromofluorobenzene 47.73 1.0 50 0 95.5 70-125 0								1.0	U	1,1-Dichloroethane		
1,2-Dichloroethane U 1.0 Benzene U 1.0 Carbon tetrachloride U 1.0 Chloroform U 1.0 Ethylbenzene U 1.0 Methylene chloride U 2.0 Tetrachloroethene U 1.0 Toluene U 1.0 Trichloroethene U 1.0 Vinyl chloride U 1.0 Xylenes, Total U 1.0 Surr: 1,2-Dichloroethane-d4 47.14 1.0 50 0 94.3 71-125 0 Surr: 4-Bromofluorobenzene 47.73 1.0 50 0 95.5 70-125 0								1.0	U	1,1-Dichloroethene		
Benzene								1.0	U	1,2-Dibromoethane		
Carbon tetrachloride U 1.0 Chloroform U 1.0 Ethylbenzene U 1.0 Methylene chloride U 2.0 Tetrachloroethene U 1.0 Toluene U 1.0 Trichloroethene U 1.0 Vinyl chloride U 1.0 Xylenes, Total U 1.0 Surr: 1,2-Dichloroethane-d4 47.14 1.0 50 0 94.3 71-125 0 Surr: 4-Bromofluorobenzene 47.73 1.0 50 0 95.5 70-125 0								1.0	U	1,2-Dichloroethane		
Chloroform U 1.0 Ethylbenzene U 1.0 Methylene chloride U 2.0 Tetrachloroethene U 1.0 Toluene U 1.0 Trichloroethene U 1.0 Vinyl chloride U 1.0 Xylenes, Total U 1.0 Surr: 1,2-Dichloroethane-d4 47.14 1.0 50 0 94.3 71-125 0 Surr: 4-Bromofluorobenzene 47.73 1.0 50 0 95.5 70-125 0								1.0	U	Benzene		
Ethylbenzene U 1.0 Methylene chloride U 2.0 Tetrachloroethene U 1.0 Toluene U 1.0 Trichloroethene U 1.0 Vinyl chloride U 1.0 Xylenes, Total U 1.0 Surr: 1,2-Dichloroethane-d4 47.14 1.0 50 0 94.3 71-125 0 Surr: 4-Bromofluorobenzene 47.73 1.0 50 0 95.5 70-125 0								1.0	U	Carbon tetrachloride		
Methylene chloride U 2.0 Tetrachloroethene U 1.0 Toluene U 1.0 Trichloroethene U 1.0 Vinyl chloride U 1.0 Xylenes, Total U 1.0 Surr: 1,2-Dichloroethane-d4 47.14 1.0 50 0 94.3 71-125 0 Surr: 4-Bromofluorobenzene 47.73 1.0 50 0 95.5 70-125 0								1.0	U	Chloroform		
Tetrachloroethene U 1.0 Toluene U 1.0 Trichloroethene U 1.0 Vinyl chloride U 1.0 Xylenes, Total U 1.0 Surr: 1,2-Dichloroethane-d4 47.14 1.0 50 0 94.3 71-125 0 Surr: 4-Bromofluorobenzene 47.73 1.0 50 0 95.5 70-125 0								1.0	U	Ethylbenzene		
Toluene U 1.0 Trichloroethene U 1.0 Vinyl chloride U 1.0 Xylenes, Total U 1.0 Surr: 1,2-Dichloroethane-d4 47.14 1.0 50 0 94.3 71-125 0 Surr: 4-Bromofluorobenzene 47.73 1.0 50 0 95.5 70-125 0								2.0	U	Methylene chloride		
Trichloroethene U 1.0 Vinyl chloride U 1.0 Xylenes, Total U 1.0 Surr: 1,2-Dichloroethane-d4 47.14 1.0 50 0 94.3 71-125 0 Surr: 4-Bromofluorobenzene 47.73 1.0 50 0 95.5 70-125 0								1.0	U	Tetrachloroethene		
Vinyl chloride U 1.0 Xylenes, Total U 1.0 Surr: 1,2-Dichloroethane-d4 47.14 1.0 50 0 94.3 71-125 0 Surr: 4-Bromofluorobenzene 47.73 1.0 50 0 95.5 70-125 0								1.0	U	Toluene		
Xylenes, Total U 1.0 Surr: 1,2-Dichloroethane-d4 47.14 1.0 50 0 94.3 71-125 0 Surr: 4-Bromofluorobenzene 47.73 1.0 50 0 95.5 70-125 0								1.0	U	Trichloroethene		
Surr: 1,2-Dichloroethane-d4 47.14 1.0 50 0 94.3 71-125 0 Surr: 4-Bromofluorobenzene 47.73 1.0 50 0 95.5 70-125 0								1.0	U	Vinyl chloride		
Surr: 4-Bromofluorobenzene 47.73 1.0 50 0 95.5 70-125 0								1.0	U	Xylenes, Total		
		0		71-125	0 94.3		50	1.0	e-d4 47.14	Surr: 1,2-Dichloroethane		
Surr: Dibromofluoromethane 50.94 1.0 50 0 102 74-125 0		0	(70-125	0 95.5		50	1.0	zene 47.73	Surr: 4-Bromofluorobenz		
		0		74-125	0 102		50	1.0	nane 50.94	Surr: Dibromofluorometh		
Surr: Toluene-d8 49.25 1.0 50 0 98.5 78-123 0		0		78-123	0 98.5		50	1.0	49.25	Surr: Toluene-d8		

Client: Navajo Refining Company

Work Order: 1302082

Project: RO Discharge Sampling

Batch ID: R142161	Instrument ID VOA4		Method	: SW826	0						
LCS Sample ID:	VLCSW-130205-R142161				L	Jnits: µg/L		Analys	sis Date: 2	/5/2013 0	9:37 AM
Client ID:	Run	Run ID: VOA4_130205A			SeqNo: 3102119					DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	55.03	1.0	50		0	110	80-120	()		
1,1,2,2-Tetrachloroethane	45.4	1.0	50		0	90.8	74-123	()		
1,1,2-Trichloroethane	48.9	1.0	50		0	97.8	80-120	()		
1,1-Dichloroethane	46.19	1.0	50		0	92.4	80-120	()		
1,1-Dichloroethene	53.85	1.0	50		0	108	80-120	()		
1,2-Dibromoethane	52.93	1.0	50		0	106	80-120	()		
1,2-Dichloroethane	48.97	1.0	50		0	97.9	79-120	()		
Benzene	48.6	1.0	50		0	97.2	80-120	()		
Carbon tetrachloride	59.17	1.0	50		0	118	79-120	()		
Chloroform	47.16	1.0	50		0	94.3	80-120	()		
Ethylbenzene	48.68	1.0	50		0	97.4	80-120	()		
Methylene chloride	47.36	2.0	50		0	94.7	75-125	()		
Tetrachloroethene	52.99	1.0	50		0	106	80-120	()		
Toluene	47.82	1.0	50		0	95.6	80-121	()		
Trichloroethene	54.22	1.0	50		0	108	80-120	()		
Vinyl chloride	50.08	1.0	50		0	100	75-125	()		
Xylenes, Total	142.4	1.0	150		0	94.9	80-124	()		
Surr: 1,2-Dichloroethane	e-d4 44.33	1.0	50		0	88.7	71-125	()		
Surr: 4-Bromofluorobenz	zene 50.11	1.0	50		0	100	70-125	(1		
Surr: Dibromofluorometh	nane 49.8	1.0	50		0	99.6	74-125	()		
Surr: Toluene-d8	48.26	1.0	50		0	96.5	78-123	()		

Client: Navajo Refining Company

Work Order: 1302082

Surr: Toluene-d8

Note:

Project: RO Discharge Sampling

Batch ID: R142161	Instrument ID VOA4		Metho	d: SW8260						
LCSD Sample ID: V	LCSDW-130205-R142161				Units: µg/l	_	Analys	s Date: 2/ 5	5/2013 10	:01 AM
Client ID:	Run ID: VOA4_130205A			S	eqNo: 310 :	2120	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	52.78	1.0	50	0	106	80-120	55.03	4.17	20	
1,1,2,2-Tetrachloroethane	44.75	1.0	50	0	89.5	74-123	45.4	1.45	20	
1,1,2-Trichloroethane	48.98	1.0	50	0	98	80-120	48.9	0.168	20	
1,1-Dichloroethane	44.95	1.0	50	0	89.9	80-120	46.19	2.71	20	
1,1-Dichloroethene	51.05	1.0	50	0	102	80-120	53.85	5.34	20	
1,2-Dibromoethane	52.56	1.0	50	0	105	80-120	52.93	0.693	20	
1,2-Dichloroethane	48.06	1.0	50	0	96.1	79-120	48.97	1.89	20	
Benzene	46.95	1.0	50	0	93.9	80-120	48.6	3.45	20	
Carbon tetrachloride	57.13	1.0	50	0	114	79-120	59.17	3.51	20	
Chloroform	45.5	1.0	50	0	91	80-120	47.16	3.58	20	
Ethylbenzene	47.06	1.0	50	0	94.1	80-120	48.68	3.38	20	
Methylene chloride	46.64	2.0	50	0	93.3	75-125	47.36	1.54	20	
Tetrachloroethene	52.04	1.0	50	0	104	80-120	52.99	1.82	20	
Toluene	47	1.0	50	0	94	80-121	47.82	1.73	20	
Trichloroethene	52.61	1.0	50	0	105	80-120	54.22	3.01	20	
Vinyl chloride	46.94	1.0	50	0	93.9	75-125	50.08	6.46	20	
Xylenes, Total	140.3	1.0	150	0	93.5	80-124	142.4	1.5	20	
Surr: 1,2-Dichloroethane	-d4 44.11	1.0	50	0	88.2	71-125	44.33	0.493	20	
Surr: 4-Bromofluorobenz	ene 51.13	1.0	50	0	102	70-125	50.11	2.03	20	
Surr: Dibromofluorometh	ane 48.61	1.0	50	0	97.2	74-125	49.8	2.42	20	

50

0

96.3

78-123

48.26

0.187

20

1.0

48.17

Navajo Refining Company Client:

Work Order: 1302082

RO Discharge Sampling Project:

Batch ID: R142161	Instrument ID VOA4		Method	: SW826	0										
MS Sample ID: 1	1302056-09AMS				U	nits: μg/L		Analysis Date: 2/5/2013 11:14 Al							
Client ID:	Ru	n ID: VOA4 _	130205A		Sec	qNo: 310 2	2122	Prep Date:	: DF: 10						
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
1,1,1-Trichloroethane	537.7	10	500		0	108	80-120	()						
1,1,2,2-Tetrachloroethane	439.8	10	500		0	88	74-123	()						
1,1,2-Trichloroethane	477.2	10	500		0	95.4	80-120	()						
1,1-Dichloroethane	459.9	10	500		0	92	80-120	()						
1,1-Dichloroethene	525.1	10	500		0	105	80-120	()						
1,2-Dibromoethane	510.6	10	500		0	102	80-120	()						
1,2-Dichloroethane	487.4	10	500		0	97.5	79-120	()						
Benzene	485.1	10	500		0	97	80-120	()						
Carbon tetrachloride	581.9	10	500		0	116	79-120	()						
Chloroform	469.7	10	500		0	93.9	80-120	()						
Ethylbenzene	475	10	500		0	95	80-120	()						
Methylene chloride	473.5	20	500		0	94.7	75-125	()						
Tetrachloroethene	524.4	10	500		0	105	80-120	()						
Toluene	476.7	10	500		0	95.3	80-121	()						
Trichloroethene	544.7	10	500		0	109	80-120	()						
Vinyl chloride	495.6	10	500		0	99.1	75-125	()						
Xylenes, Total	1405	10	1500		0	93.7	80-124	()						
Surr: 1,2-Dichloroethane	e-d4 449.3	10	500		0	89.9	71-125	()						
Surr: 4-Bromofluorobenz	zene 505	10	500		0	101	70-125	()						
Surr: Dibromofluorometh	nane 495.3	10	500		0	99.1	74-125	()						
Surr: Toluene-d8	482.7	10	500		0	96.5	78-123	()						

Client: Navajo Refining Company

Work Order: 1302082

Project: RO Discharge Sampling

Batch ID: R142161	Instrument ID VOA4	Method: SW8260
-------------------	--------------------	----------------

MSD Sample ID: 1302056-09	AMSD				Units: µg/I	L	Analysi	5/2013 11	:38 AM		
Client ID:	Run I	D: VOA4 _	130205A	S	eqNo: 310	2123	Prep Date:	DF: 10			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
1,1,1-Trichloroethane	520.1	10	500	0	104	80-120	537.7	3.31	20		
1,1,2,2-Tetrachloroethane	434.1	10	500	0	86.8	74-123	439.8	1.3	20		
1,1,2-Trichloroethane	469.5	10	500	0	93.9	80-120	477.2	1.62	20		
1,1-Dichloroethane	440.8	10	500	0	88.2	80-120	459.9	4.23	20		
1,1-Dichloroethene	509.2	10	500	0	102	80-120	525.1	3.07	20		
1,2-Dibromoethane	506.6	10	500	0	101	80-120	510.6	0.775	20		
1,2-Dichloroethane	478	10	500	0	95.6	79-120	487.4	1.96	20		
Benzene	470	10	500	0	94	80-120	485.1	3.17	20		
Carbon tetrachloride	560.3	10	500	0	112	79-120	581.9	3.77	20		
Chloroform	451.7	10	500	0	90.3	80-120	469.7	3.89	20		
Ethylbenzene	462.6	10	500	0	92.5	80-120	475	2.64	20		
Methylene chloride	460.8	20	500	0	92.2	75-125	473.5	2.72	20		
Tetrachloroethene	504.2	10	500	0	101	80-120	524.4	3.92	20		
Toluene	462.7	10	500	0	92.5	80-121	476.7	2.98	20		
Trichloroethene	516.9	10	500	0	103	80-120	544.7	5.23	20		
Vinyl chloride	471	10	500	0	94.2	75-125	495.6	5.1	20		
Xylenes, Total	1361	10	1500	0	90.7	80-124	1405	3.17	20		
Surr: 1,2-Dichloroethane-d4	442.1	10	500	0	88.4	71-125	449.3	1.62	20		
Surr: 4-Bromofluorobenzene	501	10	500	0	100	70-125	505	0.777	20		
Surr: Dibromofluoromethane	494.6	10	500	0	98.9	74-125	495.3	0.14	20		
Surr: Toluene-d8	477.4	10	500	0	95.5	78-123	482.7	1.1	20		

The following samples were analyzed in this batch:

1302082-22A

Client: Navajo Refining Company

Work Order: 1302082

Batch ID: 6	7667 Instrument ID UV-245	50	Metho	d: SW90 1	14	(Dissolv	e)			
MBLK	Sample ID: WBLKS1-020813-6766	7			Units: mg	/Kg	Analys	is Date: 2	/8/2013 05	:30 PM
Client ID:	!	Run ID: UV-2	450_130208F		SeqNo: 310	7315	Prep Date: 2/8/	2013	DF: 1	
Analyte	Resu	ılt PQ	L SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	l	U 2.	0							
LCS	Sample ID: WLCSS1-020813-6766	7			Units: mg	/Kg	Analys	is Date: 2	/8/2013 05	:30 PN
Client ID:	!	Run ID: UV-2	450_130208F		SeqNo: 310	7316	Prep Date: 2/8/	2013	DF: 1	
Analyte	Resu	ilt PQ	L SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	9.6	5 2.	0 10		0 96.5	80-120	0			
LCSD	Sample ID: WLCSDS1-020813-676			Units: mg	/Kg	Analys	is Date: 2	/8/2013 05	:30 PN	
Client ID:	I	Run ID: UV-2	450_130208F		SeqNo: 310	7332	Prep Date: 2/8/	DF: 1		
Analyte	Resu	ilt PQ	L SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	9.3	5 2.	0 10		0 93.5	80-120	9.65	3.16	30	
MS	Sample ID: 1302079-15CMS				Units: mg	/Kg	Analys	is Date: 2	/8/2013 05	:30 PM
Client ID:	I	Run ID: UV-2	450_130208F		SeqNo: 310	7331	Prep Date: 2/8/	2013	DF: 1	
Analyte	Resu	ilt PQ	L SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	8.28	7 1.	9 9.364	0.3	52 84.7	75-125	0			
The followi	ing samples were analyzed in this ba	atch:	1302082-01C 1302082-09B 1302082-18B	13	802082-03B 802082-12B 802082-21C		302082-06B 302082-15B			

Client: Navajo Refining Company

Work Order: 1302082

Project: RO Discharge Sampling

Batch ID: 67763	Instrument ID ICS3K2		Metho	d: E300			(Dissolve	e)			
MBLK Sample ID): WBLKS1-67763				Uni	ts: mg/	Kg	Analys	sis Date: 2	/11/2013 1	2:42 PM
Client ID:	Rui	n ID: ICS3K2	2_130211A		SeqN	lo: 311	0269	Prep Date: 2/1	0/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	9	6REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	5.0									
Fluoride	U	1.0									
Nitrogen, Nitrate (As N)	U	1.0									
Nitrogen, Nitrite (As N)	U	1.0									
Sulfate	U	5.0									
Surr: Selenate (surr)	56.88	1.0	50		0	114	85-115	()		
LCS Sample ID	: WLCSS1-67763				Uni	ts: mg/	Kg	Analys	sis Date: 2	/11/2013 0)1:03 PM
Client ID:	Rui	n ID: ICS3K2	2_130211A		SeqN	lo: 311 (0270	Prep Date: 2/1	0/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	9,	6REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	183.7	5.0	200		0	91.8	90-110	()		
Fluoride	39.17	1.0	40		0	97.9	90-110	()		
Nitrogen, Nitrate (As N)	37.84	1.0	40		0	94.6	90-110	()		
Nitrogen, Nitrite (As N)	39.72	1.0	40		0	99.3	90-110	()		
Sulfate	200.2	5.0	200		0	100	90-110	()		
Surr: Selenate (surr)	54.86	1.0	50		0	110	85-115	()		
MS Sample ID): 1302082-21CMS				Uni	ts: mg/	Kg	Analys	sis Date: 2	/11/2013 0)8:11 PM
Client ID: RO-SB-1 (35)	Rui	n ID: ICS3K2	2_130211A		SeqN	lo: 311 (0281	Prep Date: 2/1	0/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	9	6REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	140	5.0	99.64	39.2	26	101	75-125	()		
Fluoride	27.44	1.0	19.93	4.8		113	75-125	()		
Nitrogen, Nitrate (As N)	21.09	1.0	19.93		0	106	75-125	()		
Nitrogen, Nitrite (As N)	22.01	1.0	19.93		0	110	75-125	()		
Sulfate	511.7	5.0	99.64	515	.9	-4.16	75-125	()		SO
Surr: Selenate (surr)	56	1.0	49.82		0	112	80-120	C)		

Note:

Navajo Refining Company

Work Order: 1302082

Client:

Project: RO Discharge Sampling

QC BATCH REPORT

Batch ID: 6	67763	Instrument ID ICS3K2		Method	i: E300		(Dissolve	e)						
MSD	Sample ID:	1302082-21CMSD				Units: mg/	Kg	Analysis Date: 2/11/2013 08:33						
Client ID: F	RO-SB-1 (35)	Run II	D: ICS3K2	2_130211A	S	SeqNo: 311 (0282	Prep Date: 2/10	/2013	DF: 1				
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Chloride		138.5	5.0	99.69	39.26	99.6	75-125	140	1.08	20				
Fluoride		26.96	1.0	19.94	4.87	111	75-125	27.44	1.77	20				
Nitrogen, N	Nitrate (As N)	20.86	1.0	19.94	0	105	75-125	21.09	1.13	20				
Nitrogen, N	Nitrite (As N)	21.74	1.0	19.94	0	109	75-125	22.01	1.22	20				
Sulfate		504.9	5.0	99.69	515.9	-11	75-125	511.7	1.35	20	SO			
Surr: Se	elenate (surr)	56.91	1.0	49.85	0	114	80-120	56	1.63	20				
The follow	ving samples v	vere analyzed in this batch:	13	802082-01C 802082-09B 802082-18B	130	2082-03B 2082-12B 2082-21C		02082-06B 02082-15B						

Client: Navajo Refining Company

Work Order: 1302082

Project: RO Discharge Sampling

QC BATCH REPORT

Batch ID: R142356 Instrument ID B			Balance1		Method	: SW355	0		(Dissolve	e)			
DUP	Sample ID:	1302082-16ADU	•				Ur	nits: wt%	6	Analys	is Date: 2/	7/2013 03	3:15 PM
Client ID: F	RO-SB-1 (27)		Run IE	BALAN	CE1_13020	1_130207C Seq			6553	Prep Date:	DF: 1		
Analyte			Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Percent Mo	oisture		18.28	0.010	0		0	0	0-0	18.79	2.77	20	
The follow	ving samples v	were analyzed in	this batch:	13 13 13	802082-01C 802082-04A 802082-07A 802082-10A 802082-13A 802082-16A	13 13 13	0208 0208 0208	2-02A 2-05A 2-08A 2-11A 2-14A	13 13 13	02082-03A 02082-06A 02082-09A 02082-12A 02082-15A			

Client: Navajo Refining Company

Work Order: 1302082

Project: RO Discharge Sampling

QC BATCH REPORT

Batch ID: R142515 Instrument ID Balance1			Method: SW3550				((Dissolve	=)				
DUP	Sample ID:	1302140-04DDUP				U	nits: wt%)	Analysi	rsis Date: 2/8/2013 02:55			
Client ID:		Run I	D: BALAN	NCE1_130208C		SeqNo: 3108447			Prep Date:	DF: 1			
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Percent Mo	oisture	10.25	0.010	0		0	0	0-0	10.21	0.434	20		
DUP	Sample ID:	1302140-05DDUP				U	nits: wt %)	Analysi	s Date: 2/	8/2013 02	2:55 PM	
Client ID:		Run I	D: BALAN	CE1_13020	8C	Se	qNo: 310 8	3467	Prep Date:		DF: 1		
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Percent Mo	oisture	9.649	0.010	0		0	0	0-0	9.526	1.29	20		

ALS Environmental Date: 13-Feb-13

Client: Navajo Refining Company **QUALIFIERS,** Project: RO Discharge Sampling ACRONYMS, UNITS

WorkOrder: 1302082

wt%

0 110	
<u>Qualifier</u>	Description
*	Value exceeds Regulatory Limit
a	Not accredited
В	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
Н	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
Acronym	<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
Units Reported	Description
μg/Kg-da	ry Micrograms per Kilogram - Dry weight corrected
mg/Kg-d	ry Milligrams per Kilogram - Dry weight corrected
mg/L	Milligrams per Liter

Sample Receipt Checklist

Client Name: N	AVAJO REFINING				Date/Time I	Receive	ed: <u>0</u> :	2-Feb-13	<u>3 09:30</u>		
Work Order: 13	802082				Received by	y:	<u>J</u>	<u>BA</u>			
Checklist complete	ed by <u>Rishel</u> D. Maran eSignature		04-Feb-13 Date	Re	eviewed by:	Soni	a Vest ature	/			05-Feb-13 Date
	SOIL FedEx										
Shipping contained	r/cooler in good condition?		Yes	✓	No 🗌	No	ot Present	t 🗆			
Custody seals inta	ct on shipping container/coole	r?	Yes	✓	No 🗌	No	ot Present	t 🗌			
Custody seals inta	ct on sample bottles?		Yes		No 🗌	No	ot Present	✓			
Chain of custody p	present?		Yes	✓	No 🗌						
Chain of custody s	signed when relinquished and	received?	Yes	✓	No 🗌						
Chain of custody a	agrees with sample labels?		Yes	✓	No 🗌						
Samples in proper	container/bottle?		Yes	✓	No 🗌						
Sample containers	s intact?		Yes	✓	No 🗌						
Sufficient sample	volume for indicated test?		Yes	✓	No 🗌						
All samples receiv	ed within holding time?		Yes	✓	No 🗌						
Container/Temp B	lank temperature in compliand	ce?	Yes	✓	No 🗆						
Temperature(s)/Th	nermometer(s):		0.6C U/	C			005				
Cooler(s)/Kit(s):			4672								
Date/Time sample	e(s) sent to storage:		2/4/13 1	0:00							
Water - VOA vials	have zero headspace?		Yes		No 🗀	No VC	A vials sı	ubmitted	✓		
Water - pH accept	able upon receipt?		Yes		No 🗌	N/A	V				
pH adjusted? pH adjusted by:			Yes -		No L	N/A	V				
Login Notes:	A Trip Blank sample was refor VOC 8260.	ceived but was r	not listed on t	:he cha	ain of custody	. The la	aboratory	analyze	d this sa	mple_	
				==		==					
Client Contacted:		Date Contacted	l:		Person	Contac	cted:				
Contacted By:		Regarding:									
Comments:											
Comments.											
CorrectiveAction:											
CONCOUVE/ACUOII.									c	ם ר	age 1 of 1
										1 V 1	auciui I

(ALS)
Environmental

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

Chain of Custody Form

Page 1 of 3

COC ID: 41191

1302082

NAVAJO REFINING: Navajo Refining Company

Project: RO Discharge Sampling

Copyright 2011 by ALS Group

	Customer Information Project Information																		
	tomer Information	31 PSR 4870							Tiati i									-	
Purchase Order			Project N	Name ROT		7.	/S	philons	AV	<u> </u>	(82	<u>60)</u>	M	<u>w</u>	<u>G</u>	Scis	٢		
Work Order		Р	roject Nu	mber 125	<u>3823</u>	U			BC	RO	18	015	<u>H)</u>						
Company Name	Havajo Retining Co	Bil	l To Com	pany Nave	io Re	Lini	ng (Cs.	c \[XO	ŠÝ	015.	4)					-	
Send Report To			Invoice		ext C				0 ORO (80,5M)										
Address			***	and the second					ELLSVOC (BZ70) NW GWL										
Address	501 East Main		Auc	Iress 501	EAS	+ >	a.	n	F ~~	otal	M					00)			——— ते-
City/State/Zip	Artesia, NM		City/Stat	e/Zip	sa, t	M			G);45						1700			
Phone			Phone 575-478-6733							H Radism + Anisas								The state of the s	
Fax			Fax 575 (55 746-5421								5 / u'								
e-Mail Address			e-Mail Address								ide				***************************************			-	
No.	Sample Description	C	ate	Time	Matrix	∢ P	res.	# Bottles	A	B	С	D	E	F	G	н	1	J	Hold
1 Ro-S	B-1 (1)	1/31	113	1145	551	-	,	5	X		X	X	X	X		X	×	X	-
2 RO-5	B-1 (3)	11	(1150	1		١	t									火	-	
3 Ro-5				1200			\	3				-		1		X	×	X	
4 RO-5	56-1 (7)			1230				*****									ゝ	180	
5 RO-	SB-1 (9)			1245				1									Х	羧	
6 RO-S	B-1 (10)	1/31	/13	1250				3						X		X	Х	×	
7 RO-5	B-1 (11)	2/1	13	0953				Ì									Х		
8 RO-5	5B-1 (13)		,	0953				1	·								Υ.		
9 RO-5	B-1 (15)			0957				3						Х		Х	Х	\overline{A}	
	58-1 (17)			0747			1										Х	Line Address	
Sampler(s): Please Pr	rint & Sign		Shipm	ent Method:	- 1	• •		naround '				Other			Re	sults Du	e Date:	1	
1111						STD	10 Wk	Days L	5 Wk D		2 W	k Days	24	4 Hour					
Relinquished by:	9e/sen 7/1/1	Time:	00	Received by	St		31.	3/130	Note	5	, T	AT.),3	تابود	J M	etals	Field	1 E	Hero
Relinquished by:	Date: Time: Received by (Laborato								Cor	oler Ten) QC		ege: (Cl	heck Bo	x Belov	vs)			-1 -3m: 1 -3
Logged by (Laboratory):	ogged by (Laboratory): Date: Time: Checked by (Laborator										ĹΕ		vel II:						
เราหนึ่งการที่ (กรถอเลเดเล้):	Date:	i ime:		enecked by (Labo	iawy);						-				C + Rav 6 CLP-				·········
Preservative Key: 1	reservative Key: 1-HCL 2-HNO3 3-H2SO4 4-NaOH 5-Na2S2O3 6-NaHSO4 7-Other 8-4								35			_	her:		U CLF	LIKU			

(ALS)	
T AND COURSE STREET, CHARLES AND DESIGN.	Res.

Chain of Custody Form

Page 2 of 3

COC ID: 41199

Everett, WA +1 425 356 2600

+1 513 733 5336

Cincinnati, OH

☐ Houston, TX +1 281 530 5656

Holland, Mi +1 616 399 6070

☐ Salt Lake City, UT +1 801 266 7700 Spring City, PA + 1 610 948 4903

Fort Collins, CO +1 970 490 1511

Middletown, PA + 1 717 944 5541

York, PA + 1 717 505 5280

Environmental Work Order #: ALS Project Manager: Parameter/Method Request for Analysis **Customer Information Project Information** Project Name Purchase Order MW CHO List **Project Number** Work Order Company Name Maurio Refinina Co **Bill To Company** Send Report To Invoice Attn. a) GW List Address Address DOI Fast Main G City/State/Zip City/State/Zip Phone Phone Fax Fax e-Mail Address e-Mail Address B C D E F G Hold Sample Description Time Matrix Pres. # Bottles No. Date **3**50 2/1/13 GAH) 2 X (I,O)1018 3 (21) Χ (23 1018 5 (15 1018 6 (27 1010 99 7 1010 3 8 (প্রভ) 1010 31 × 1005 10 1005 Sampler(s): Please Print & Sign Shipment Method: Required Turnaround Time: Other Results Due Date: STD 10 Wk Days 5 Wk Days 24 Hour 2 Wk Days Time: Received by: Relinquished by 1200 259856v QC Package: (Check Box Below) Relinquished by: Received by (Laboratory): Time: Cooler Temp. Level II: Standard QC Logged by (Laboratory): Date: Time: Checked by (Laboratory): Level III: Std QC + Raw Data Level IV: SW846 CLP-Like Preservative Key: 1-HCL 2-HNO3 3-H2SQ4 4-NaQH 5-Na2S2Q3 6-NaHSQ4 7-Other 8-4 degrees C Other:

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

Copyright 2011 by ALS Group

앜



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 <u>3</u> of <u>3</u>

Houston, TX +1 281 530 5656 Middletown, PA

Spring City, PA +1 610 948 4903

South Charleston, WV +1 304 356 3168 York, PA

+1 717 505 5280

Salt Lake City, UT +1 717 944 5541 +1 801 266 7700

COC ID: 7221/

Enviro	Environmental			ALS Project Manager:							ALS	Work	Order	#:	िउ	520	(2-
	Sustomer Information		Proj	ect Informati	on				Pai	ramet	er/Me	thod I	Reque	st for	Analy	sis	
Purchase Order		Project N	ame RC) Discharge/Sa	mpling		Α	VOC	(8260) NW (3W Lis	t					
Work Order		Project Nur	nber 12	38:23	·····		В	GRO	O (8015	5 M)							
Company Name	Navajo Refining Company	Bill To Com	oany Na	vajo Refining C	отрапу		C DRO (8015M)										
Send Report To	Robert Combs	Invoice	Attn Ro	bert Combs			D ORO (8015M)										
Address	501 East Main	Add	ress 50	<u> </u>			E LL SVOC (8270) NM GW List F Total Metals (6020/7000) RCRA 8										
City/State/Zip	Artesia, NM 86211	City/State	/Zip Art	esia, NM 8821	1		G							·			
Phone	(575) 748-6733	Pł	ione (57	5) 748-6733	The state of the s	**************************************	H	₹ DS	· C-	اعتم ه	e	A		***			
Fax	(575) 746-5421		Fax (57	'5) 746-5421		**************************************	1			,		., .,,,,,) (\				
e-Mail Address	A CONTRACTOR OF THE CONTRACTOR	e-Mail Add	ress		و در در در در در پروروس (۱۹۱۷ تا ۱۹۱۸		J	Fine	erprist-	(PIAN	3/Sp. 3	rav, Sir	a Dist)	Rac	ادنام		
vo. 1} Ro.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	Α	В	С	D	Ε	F	∫ G ∣	H		J	Hold
2 8 3 3 4 5 6 6 7 8 8 9																	
Relinquished by: Logged by (Laboratory):	Date: Ull Date:		Received by (I	A A A A A A A A A A A A A A A A A A A	电影性 医电影性 医	ound Time: (6] 5 WK	Дауs	10 Day	NK Day	Dissolve	Package	ir als Field e: (Chec el II Sid (Filten	ox Belo	w)	RP CheckLi

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.

FedEx Tracking 8013 7714 1180

Form 0215

Manning Min

1	From Date 7/1/42	4 Express Package Service *Tomas locations. NOTE: Service order has changed, Please solect carefully.	Packagas up to 150 lbs. For packagas over 150 lbs. use the Fedex Express Freight US Airbill.
	Sender's Ecc Resection Phone 281 787-1234	Next Business Day 2 gr 3 Busines FedEx First Overnight Entert in thurshes morting delivery to solver Uncations, ligid y shipmines will be delivered on the other part of the	М.
	Company A G C A D S D S .		tempon." Thursday shipments Monday unless SATURDAY
	Address Copy, Floor, Surva Roard Dept, Floor, Surva Roard	FedEx Standard Overnight Saturday Delivery NoT available. FedEx Expres Third business afternoon. Securday Delivery NoT available.	s Saver 101 syallable.
2	City State ZIP ZIP ZIV	5 Packaging *Declared visible limit \$500. FedEx Envelope* FedEx Pak* FedEx Box	FedEx Other
3	To Recipient's Phone 281 530-5656	Special Handling and Delivery Signature Options SATURDAY Delivery NOT available for Feets Standard Overnight Fedts 20sy A.M., or Fedts Escress Sever.	
	Company ALS LABORATORY GROUP HOLD Weekday fedSalocations address	No Signature Required Package may be left verticat obtaining a signature tor delivery. Does this shipment contain dangerous goods?	indirect Signature If no one is available at recipients address, someone at a naighboring address may sign for delivery. For residential deliveries only. Fee applies
	Addross 1 0 4 5 0 5 7 A V T FF P 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Une bax must be checked. Yes Apperatude Apperatude Shipper's Declaration Appropriate Dangerous goods (including by led cannot be shipped in FedEx packaging or preciding a FedEx Express Drop Box.	031846xkg Cargo Aircraft Only
	City HOUSTON State TX ZIP 77099-4338	7 Payment Bill to: Sender Acct No. or Credit Carts No. below Pacet No. Sector I Not believe Recipient Third Party	redit Card Cast/Check
;	0455550114	Totał Packages Total Weight Credit	ord Austr
	8013 7714 1180	10ur fability is limited to US\$100 unless you doctore shigher value. See the current FedEx Service Guida Ray, Balas 2/12 • Part #183134 • C11994-2012 FedEx • PRINTED IN U.S.A. SRS	for details. 61.1

1302682



ALS Environmental

10450 Stancliff Rd., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5887



	37		
and the second second	SUSTODY	CEAL	Geal By Mark
The state of the s	CUSTOUY	JEAL	
Date: 2-1-2	C/ Time:		- 3 %
Name:	3. Mc Kenn	<u>. </u>	
Company:	NCADIR	<u> </u>	
			and the second s



18-Feb-2013

Robert Combs
Navajo Refining Company
PO Box 159
Artesia, NM 88211

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

Re: RO Discharge Sampling Work Order: 1302138

Dear Robert,

ALS Environmental received 6 samples on 05-Feb-2013 09:15 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 47.

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

Sincerely,

Electronically approved by: Luke F. Hernandez

Sonie West

Sonia West Project Manager



Certificate No: T104704231-12-10

ALS Environmental

Date: 18-Feb-13

Client: Navajo Refining Company
Project: RO Discharge Sampling

Work Order: 1302138

Work Order Sample Summary

Lab Samp II	Client Sample ID	<u>Matrix</u>	Tag Number	Collection Date	Date Received	Hold
1302138-01	RO Discharge	Water		2/3/2013 09:30	2/5/2013 09:15	
1302138-02	MW-117	Water		2/3/2013 10:00	2/5/2013 09:15	
1302138-03	MW-114	Water		2/3/2013 11:30	2/5/2013 09:15	
1302138-04	MW-115	Water		2/3/2013 12:30	2/5/2013 09:15	
1302138-05	Trip Blank 011813-74	Water		2/3/2013	2/5/2013 09:15	
1302138-06	Trip Blank 011813-50	Water		2/3/2013	2/5/2013 09:15	

ALS Environmental

Date: 18-Feb-13

Client: Navajo Refining Company
Project: RO Discharge Sampling

Project: RO Discharge Sampling Case Narrative

Work Order: 1302138

Sample received outside method holding time for Nitrate & Nitrite. Nitrate & Nitrite has a 48 hour holding time. The samples were received as the holding timies expired. Sample results are flagged with an "H" qualifier.

Your samples received for Radium 226 and Radium 228 are reported on ALS workorder 1302192.

Batch 67619, Dissolved Metals 6020, Sample RO Discharge (1302138-01E: The MS/MSD recoveries were above the control limits for Calcium and Sodium due to high concentration to the background sample. Results are flagged with an O. The associated LCS recoveries and MS/MSD RPD were within the control limits.

Batch 67639, Dissolved Metals 6020, Sample 1302162-02D: MS/MSD is for an unrelated sample.

Batch R142615, Anions 300.0, Sample 1302189-01G: MS/MSD is for an unrelated sample.

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: RO Discharge **Collection Date:** 2/3/2013 09:30 AM

Work Order: 1302138

Lab ID: 1302138-01 **Matrix:** WATER

Date: 18-Feb-13

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Met	:hod: SW8015	И	Prep: SW3	3511 / 2/8/13	Analyst: KMB
TPH (Diesel Range)	U		0.021	0.052	mg/L	1	2/11/2013 15:36
TPH (Oil Range)	0.17		0.042	0.10	mg/L	1	2/11/2013 15:36
Surr: 2-Fluorobiphenyl	107			60-135	%REC	1	2/11/2013 15:36
GASOLINE RANGE ORGANICS - SWE	3015C	Met	:hod: SW8015				Analyst: KKP
Gasoline Range Organics	U		0.020	0.0500	mg/L	1	2/7/2013 18:47
Surr: 4-Bromofluorobenzene	105			70-130	%REC	1	2/7/2013 18:47
DISSOLVED MERCURY		Met	:hod: SW7470		Prep: SW7	7470 / 2/7/13	Analyst: OFO
Mercury	U		0.000042	0.000200	mg/L	1	2/7/2013 18:08
DISSOLVED METALS		Met	:hod: SW6020		Prep: SW3	3010A / 2/6/13	Analyst: ALR
Aluminum	0.00668	J	0.0040	0.0100	mg/L	1	2/8/2013 00:48
Arsenic	0.00494	J	0.0013	0.00500	mg/L	1	2/8/2013 00:48
Barium	0.0628		0.00090	0.00500	mg/L	1	2/8/2013 00:48
Boron	0.143		0.040	0.100	mg/L	2	2/12/2013 14:09
Cadmium	U		0.00080	0.00200	mg/L	1	2/8/2013 00:48
Calcium	625		4.3	25.0	mg/L	50	2/8/2013 13:17
Chromium	U		0.0012	0.00500	mg/L	1	2/8/2013 00:48
Cobalt	U		0.00080	0.00500	mg/L	1	2/8/2013 00:48
Copper	0.00177	J	0.0015	0.00500	mg/L	1	2/8/2013 00:48
Iron	U		0.078	0.200	mg/L	1	2/8/2013 00:48
Lead	U		0.00070	0.00500	mg/L	1	2/8/2013 00:48
Manganese	U		0.0025	0.00500	mg/L	1	2/8/2013 00:48
Molybdenum	0.0125		0.0015	0.00500	mg/L	1	2/8/2013 00:48
Nickel	0.00264	J	0.0012	0.00500	mg/L	1	2/8/2013 00:48
Potassium	4.41		0.084	0.200	mg/L	1	2/8/2013 00:48
Selenium	0.0130		0.0010	0.00500	mg/L	1	2/8/2013 00:48
Silver	U		0.00080	0.00500	mg/L	1	2/8/2013 00:48
Sodium	65.4		0.085	0.200	mg/L	1	2/8/2013 00:48
Uranium	0.00601		0.0050	0.00500	mg/L	1	2/8/2013 00:48
Zinc	0.0132		0.0025	0.00500	mg/L	1	2/8/2013 00:48
LOW-LEVEL SEMIVOLATILES		Met	:hod: SW8270		Prep: SW3	3510 / 2/7/13	Analyst: LG
1-Methylnaphthalene	U		0.000050	0.00020	mg/L	1	2/8/2013 15:33
2-Methylnaphthalene	U		0.000050	0.00020	mg/L	1	2/8/2013 15:33
Benzo(a)pyrene	U		0.000050	0.00020	mg/L	1	2/8/2013 15:33
Naphthalene	U		0.000050	0.00020	mg/L	1	2/8/2013 15:33
Surr: 2,4,6-Tribromophenol	69.5			34-129	%REC	1	2/8/2013 15:33
Surr: 2-Fluorobiphenyl	69.7			40-125	%REC	1	2/8/2013 15:33

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: RO Discharge **Collection Date:** 2/3/2013 09:30 AM

Want Ondon 1202129

Work Order: 1302138 **Lab ID:** 1302138-01

Matrix: WATER

Date: 18-Feb-13

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 2-Fluorophenol	64.5			20-120	%REC	1	2/8/2013 15:33
Surr: 4-Terphenyl-d14	102			40-135	%REC	1	2/8/2013 15:33
Surr: Nitrobenzene-d5	69.1			41-120	%REC	1	2/8/2013 15:33
Surr: Phenol-d6	65.7			20-120	%REC	1	2/8/2013 15:33
LOW LEVEL VOLATILES - SW8260C		Met	hod: SW8260				Analyst: AKP
1,1,1-Trichloroethane	U		0.00030	0.0010	mg/L	1	2/6/2013 15:50
1,1,2,2-Tetrachloroethane	U		0.00050	0.0010	mg/L	1	2/6/2013 15:50
1,1,2-Trichloroethane	U		0.00030	0.0010	mg/L	1	2/6/2013 15:50
1,1-Dichloroethane	U		0.00030	0.0010	mg/L	1	2/6/2013 15:50
1,1-Dichloroethene	U		0.00050	0.0010	mg/L	1	2/6/2013 15:50
1,2-Dibromoethane	U		0.00030	0.0010	mg/L	1	2/6/2013 15:50
1,2-Dichloroethane	U		0.00030	0.0010	mg/L	1	2/6/2013 15:50
Benzene	U		0.00020	0.0010	mg/L	1	2/6/2013 15:50
Carbon tetrachloride	U		0.00030	0.0010	mg/L	1	2/6/2013 15:50
Chloroform	U		0.00030	0.0010	mg/L	1	2/6/2013 15:50
Ethylbenzene	U		0.00030	0.0010	mg/L	1	2/6/2013 15:50
Methylene chloride	U		0.00040	0.0020	mg/L	1	2/6/2013 15:50
Tetrachloroethene	U		0.00040	0.0010	mg/L	1	2/6/2013 15:50
Toluene	U		0.00030	0.0010	mg/L	1	2/6/2013 15:50
Trichloroethene	U		0.00020	0.0010	mg/L	1	2/6/2013 15:50
Vinyl chloride	U		0.00040	0.0010	mg/L	1	2/6/2013 15:50
Xylenes, Total	U		0.00030	0.0010	mg/L	1	2/6/2013 15:50
Surr: 1,2-Dichloroethane-d4	88.0			71-125	%REC	1	2/6/2013 15:50
Surr: 4-Bromofluorobenzene	94.6			70-125	%REC	1	2/6/2013 15:50
Surr: Dibromofluoromethane	96.7			74-125	%REC	1	2/6/2013 15:50
Surr: Toluene-d8	97.9			78-123	%REC	1	2/6/2013 15:50
ANIONS - EPA 300.0 (1993)		Met	hod: E300				Analyst: JKP
Chloride	67.5		0.20	0.500	mg/L	1	2/6/2013 15:36
Fluoride	3.32		0.050	0.100	mg/L	1	2/6/2013 15:36
Nitrogen, Nitrate (As N)	3.22	Н	0.030	0.100	mg/L	1	2/6/2013 15:36
Nitrogen, Nitrite (As N)	U	Н	0.030	0.100	mg/L	1	2/6/2013 15:36
Sulfate	1,690		10	25.0	mg/L	50	2/12/2013 19:01
Surr: Selenate (surr)	89.0			85-115	%REC	1	2/6/2013 15:36
Surr: Selenate (surr)	91.7			85-115	%REC	50	2/12/2013 19:01
CYANIDE - SM4500CN E		Met	hod: M4500CN	E&G			Analyst: EDG
Cyanide	U		0.0040	0.0200	mg/L	1	2/11/2013 10:05
TOTAL DISSOLVED SOLIDS		Met	hod: M2540C				Analyst: KAH

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: RO Discharge **Collection Date:** 2/3/2013 09:30 AM

Work Order: 1302138

Lab ID: 1302138-01 **Matrix:** WATER

Date: 18-Feb-13

Analyses	Result Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Total Dissolved Solids (Residue, Filterable)	3,150	5.0	10.0	mg/L	1	2/7/2013 10:10

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-117

Collection Date: 2/3/2013 10:00 AM

Date: 18-Feb-13

Work Order: 1302138

Lab ID: 1302138-02

Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Ме	thod: SW8015 N	1	Prep: SW3	3511 / 2/8/13	Analyst: KMB
TPH (Diesel Range)	U		0.021	0.052	mg/L	1	2/11/2013 15:57
TPH (Oil Range)	U		0.042	0.10	mg/L	1	2/11/2013 15:57
Surr: 2-Fluorobiphenyl	113			60-135	%REC	1	2/11/2013 15:57
GASOLINE RANGE ORGANICS - SWE	8015C	Me	thod: SW8015				Analyst: KKP
Gasoline Range Organics	U		0.020	0.0500	mg/L	1	2/7/2013 19:05
Surr: 4-Bromofluorobenzene	103			70-130	%REC	1	2/7/2013 19:05
DISSOLVED MERCURY		Me	thod: SW7470		Prep: SW7	7470 / 2/7/13	Analyst: OFO
Mercury	U		0.000042	0.000200	mg/L	1	2/7/2013 18:10
DISSOLVED METALS		Me	thod: SW6020		Prep: SW3	3010A / 2/6/13	Analyst: ALR
Aluminum	0.0289		0.0040	0.0100	mg/L	1	2/8/2013 01:59
Arsenic	0.00498	J	0.0013	0.00500	mg/L	1	2/8/2013 16:25
Barium	0.0235		0.00090	0.00500	mg/L	1	2/8/2013 01:59
Boron	0.207		0.040	0.100	mg/L	2	2/12/2013 14:11
Cadmium	U		0.00080	0.00200	mg/L	1	2/8/2013 01:59
Calcium	568		0.86	5.00	mg/L	10	2/8/2013 16:45
Chromium	U		0.0012	0.00500	mg/L	1	2/8/2013 16:25
Cobalt	0.00256	J	0.00080	0.00500	mg/L	1	2/8/2013 16:25
Copper	0.0141		0.0015	0.00500	mg/L	1	2/8/2013 16:25
Iron	U		0.078	0.200	mg/L	1	2/8/2013 16:25
Lead	U		0.00070	0.00500	mg/L	1	2/8/2013 16:25
Manganese	0.108		0.0025	0.00500	mg/L	1	2/8/2013 16:25
Molybdenum	0.0112		0.0015	0.00500	mg/L	1	2/8/2013 01:59
Nickel	0.00413	J	0.0012	0.00500	mg/L	1	2/8/2013 16:25
Potassium	6.92		0.084	0.200	mg/L	1	2/8/2013 01:59
Selenium	0.00427	J	0.0010	0.00500	mg/L	1	2/8/2013 16:25
Silver	U		0.00080	0.00500	mg/L	1	2/8/2013 01:59
Sodium	176		0.085	0.200	mg/L	1	2/8/2013 01:59
Uranium	0.0263		0.0050	0.00500	mg/L	1	2/8/2013 01:59
Zinc	0.0123		0.0025	0.00500	mg/L	1	2/8/2013 16:25
LOW-LEVEL SEMIVOLATILES		Me	thod: SW8270		Prep: SW3	3510 / 2/7/13	Analyst: LG
1-Methylnaphthalene	U		0.000050	0.00020	mg/L	1	2/8/2013 15:53
2-Methylnaphthalene	U		0.000050	0.00020	mg/L	1	2/8/2013 15:53
Benzo(a)pyrene	U		0.000050	0.00020	mg/L	1	2/8/2013 15:53
Naphthalene	U		0.000050	0.00020	mg/L	1	2/8/2013 15:53
Surr: 2,4,6-Tribromophenol	71.7			34-129	%REC	1	2/8/2013 15:53
Surr: 2-Fluorobiphenyl	67.2			40-125	%REC	1	2/8/2013 15:53

Client: Navajo Refining Company

RO Discharge Sampling **Project:**

MW-117 **Sample ID:**

Collection Date: 2/3/2013 10:00 AM

Work Order: 1302138

Lab ID: 1302138-02

Date: 18-Feb-13

Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 2-Fluorophenol	51.4			20-120	%REC	1	2/8/2013 15:53
Surr: 4-Terphenyl-d14	102			40-135	%REC	1	2/8/2013 15:53
Surr: Nitrobenzene-d5	70.1			41-120	%REC	1	2/8/2013 15:53
Surr: Phenol-d6	55.3			20-120	%REC	1	2/8/2013 15:53
LOW LEVEL VOLATILES - SW8260C		Meth	nod: SW8260				Analyst: AKP
1,1,1-Trichloroethane	U		0.00030	0.0010	mg/L	1	2/6/2013 16:14
1,1,2,2-Tetrachloroethane	U		0.00050	0.0010	mg/L	1	2/6/2013 16:14
1,1,2-Trichloroethane	U		0.00030	0.0010	mg/L	1	2/6/2013 16:14
1,1-Dichloroethane	U		0.00030	0.0010	mg/L	1	2/6/2013 16:14
1,1-Dichloroethene	U		0.00050	0.0010	mg/L	1	2/6/2013 16:14
1,2-Dibromoethane	U		0.00030	0.0010	mg/L	1	2/6/2013 16:14
1,2-Dichloroethane	U		0.00030	0.0010	mg/L	1	2/6/2013 16:14
Benzene	U		0.00020	0.0010	mg/L	1	2/6/2013 16:14
Carbon tetrachloride	U		0.00030	0.0010	mg/L	1	2/6/2013 16:14
Chloroform	U		0.00030	0.0010	mg/L	1	2/6/2013 16:14
Ethylbenzene	U		0.00030	0.0010	mg/L	1	2/6/2013 16:14
Methylene chloride	U		0.00040	0.0020	mg/L	1	2/6/2013 16:14
Tetrachloroethene	Ü		0.00040	0.0010	mg/L	1	2/6/2013 16:14
Toluene	U		0.00030	0.0010	mg/L	1	2/6/2013 16:14
Trichloroethene	U		0.00020	0.0010	mg/L	1	2/6/2013 16:14
Vinyl chloride	U		0.00040	0.0010	mg/L	1	2/6/2013 16:14
Xylenes, Total	U		0.00030	0.0010	mg/L	1	2/6/2013 16:14
Surr: 1,2-Dichloroethane-d4	89.3			71-125	%REC	1	2/6/2013 16:14
Surr: 4-Bromofluorobenzene	97.7			70-125	%REC	1	2/6/2013 16:14
Surr: Dibromofluoromethane	95.1			74-125	%REC	1	2/6/2013 16:14
Surr: Toluene-d8	99.5			78-123	%REC	1	2/6/2013 16:14
ANIONS - EPA 300.0 (1993)		Meth	nod: E300				Analyst: JKP
Chloride	154		10	25.0	mg/L	50	2/12/2013 19:15
Fluoride	2.73		0.050	0.100	mg/L	1	2/6/2013 15:50
Nitrogen, Nitrate (As N)	U	Н	0.030	0.100	mg/L	1	2/6/2013 15:50
Nitrogen, Nitrite (As N)	U	Н	0.030	0.100	mg/L	1	2/6/2013 15:50
Sulfate	2,310		10	25.0	mg/L	50	2/12/2013 19:15
Surr: Selenate (surr)	90.6			85-115	%REC	1	2/6/2013 15:50
Surr: Selenate (surr)	99.0			85-115	%REC	50	2/12/2013 19:15
CYANIDE - SM4500CN E		Meth	nod: M4500CN	I E&G			Analyst: EDG
Cyanide	U		0.0040	0.0200	mg/L	1	2/11/2013 10:05
TOTAL DISSOLVED SOLIDS		Meth	nod: M2540C				Analyst: KAH

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-117

Collection Date: 2/3/2013 10:00 AM

Date: 18-Feb-13

Work Order: 1302138

Lab ID: 1302138-02

Matrix: WATER

Analyses	Result Qual		eport Limit Units	Dilution Factor	Date Analyzed
Total Dissolved Solids (Residue, Filterable)	3,910	5.0	10.0 mg/L	1	2/7/2013 10:10

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-114

Collection Date: 2/3/2013 11:30 AM

Work Order: 1302138

Lab ID: 1302138-03

Date: 18-Feb-13

Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Ме	thod: SW8015 N	1	Prep: SW3	3511 / 2/8/13	Analyst: KMB
TPH (Diesel Range)	U		0.021	0.052	mg/L	1	2/11/2013 16:19
TPH (Oil Range)	U		0.042	0.10	mg/L	1	2/11/2013 16:19
Surr: 2-Fluorobiphenyl	90.9			60-135	%REC	1	2/11/2013 16:19
GASOLINE RANGE ORGANICS - SW	3015C	Me	thod: SW8015				Analyst: KKP
Gasoline Range Organics	U		0.020	0.0500	mg/L	1	2/7/2013 19:23
Surr: 4-Bromofluorobenzene	102			70-130	%REC	1	2/7/2013 19:23
DISSOLVED MERCURY		Me	thod: SW7470		Prep: SW7	7470 / 2/7/13	Analyst: OFO
Mercury	U		0.000042	0.000200	mg/L	1	2/7/2013 18:12
DISSOLVED METALS		Me	thod: SW6020		Prep: SW3	3010A / 2/6/13	Analyst: ALR
Aluminum	0.0265		0.0040	0.0100	mg/L	1	2/8/2013 02:04
Arsenic	0.00561		0.0013	0.00500	mg/L	1	2/8/2013 16:30
Barium	0.0204		0.00090	0.00500	mg/L	1	2/8/2013 02:04
Boron	0.139		0.040	0.100	mg/L	2	2/12/2013 14:13
Cadmium	U		0.00080	0.00200	mg/L	1	2/8/2013 02:04
Calcium	600		0.86	5.00	mg/L	10	2/8/2013 16:50
Chromium	U		0.0012	0.00500	mg/L	1	2/8/2013 16:30
Cobalt	0.00738		0.00080	0.00500	mg/L	1	2/8/2013 16:30
Copper	U		0.0015	0.00500	mg/L	1	2/8/2013 16:30
Iron	U		0.078	0.200	mg/L	1	2/8/2013 16:30
Lead	U		0.00070	0.00500	mg/L	1	2/8/2013 16:30
Manganese	1.51		0.0025	0.00500	mg/L	1	2/8/2013 16:30
Molybdenum	0.0103		0.0015	0.00500	mg/L	1	2/8/2013 02:04
Nickel	0.00651		0.0012	0.00500	mg/L	1	2/8/2013 16:30
Potassium	2.86		0.084	0.200	mg/L	1	2/8/2013 02:04
Selenium	0.00222	J	0.0010	0.00500	mg/L	1	2/8/2013 16:30
Silver	U		0.00080	0.00500	mg/L	1	2/8/2013 02:04
Sodium	146		0.085	0.200	mg/L	1	2/8/2013 02:04
Uranium	0.0156		0.0050	0.00500	mg/L	1	2/8/2013 02:04
Zinc	0.00343	J	0.0025	0.00500	mg/L	1	2/8/2013 16:30
LOW-LEVEL SEMIVOLATILES		Me	thod: SW8270		Prep: SW3	3510 / 2/7/13	Analyst: LG
1-Methylnaphthalene	U		0.000050	0.00020	mg/L	1	2/8/2013 16:13
2-Methylnaphthalene	U		0.000050	0.00020	mg/L	1	2/8/2013 16:13
Benzo(a)pyrene	U		0.000050	0.00020	mg/L	1	2/8/2013 16:13
Naphthalene	U		0.000050	0.00020	mg/L	1	2/8/2013 16:13
Surr: 2,4,6-Tribromophenol	58.9			34-129	%REC	1	2/8/2013 16:13
Surr: 2-Fluorobiphenyl	63.3			40-125	%REC	1	2/8/2013 16:13

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-114

Collection Date: 2/3/2013 11:30 AM

Work Order: 1302138

Lab ID: 1302138-03

Date: 18-Feb-13

Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 2-Fluorophenol	60.4			20-120	%REC	1	2/8/2013 16:13
Surr: 4-Terphenyl-d14	92.1			40-135	%REC	1	2/8/2013 16:13
Surr: Nitrobenzene-d5	67.1			41-120	%REC	1	2/8/2013 16:13
Surr: Phenol-d6	61.6			20-120	%REC	1	2/8/2013 16:13
LOW LEVEL VOLATILES - SW8260C		Meth	nod: SW8260				Analyst: AKP
1,1,1-Trichloroethane	U		0.00030	0.0010	mg/L	1	2/6/2013 16:38
1,1,2,2-Tetrachloroethane	U		0.00050	0.0010	mg/L	1	2/6/2013 16:38
1,1,2-Trichloroethane	U		0.00030	0.0010	mg/L	1	2/6/2013 16:38
1,1-Dichloroethane	U		0.00030	0.0010	mg/L	1	2/6/2013 16:38
1,1-Dichloroethene	U		0.00050	0.0010	mg/L	1	2/6/2013 16:38
1,2-Dibromoethane	U		0.00030	0.0010	mg/L	1	2/6/2013 16:38
1,2-Dichloroethane	U		0.00030	0.0010	mg/L	1	2/6/2013 16:38
Benzene	U		0.00020	0.0010	mg/L	1	2/6/2013 16:38
Carbon tetrachloride	U		0.00030	0.0010	mg/L	1	2/6/2013 16:38
Chloroform	U		0.00030	0.0010	mg/L	1	2/6/2013 16:38
Ethylbenzene	U		0.00030	0.0010	mg/L	1	2/6/2013 16:38
Methylene chloride	U		0.00040	0.0020	mg/L	1	2/6/2013 16:38
Tetrachloroethene	U		0.00040	0.0010	mg/L	1	2/6/2013 16:38
Toluene	U		0.00030	0.0010	mg/L	1	2/6/2013 16:38
Trichloroethene	U		0.00020	0.0010	mg/L	1	2/6/2013 16:38
Vinyl chloride	U		0.00040	0.0010	mg/L	1	2/6/2013 16:38
Xylenes, Total	U		0.00030	0.0010	mg/L	1	2/6/2013 16:38
Surr: 1,2-Dichloroethane-d4	87.5			71-125	%REC	1	2/6/2013 16:38
Surr: 4-Bromofluorobenzene	95.7			70-125	%REC	1	2/6/2013 16:38
Surr: Dibromofluoromethane	95.2			74-125	%REC	1	2/6/2013 16:38
Surr: Toluene-d8	97.5			78-123	%REC	1	2/6/2013 16:38
ANIONS - EPA 300.0 (1993)		Meth	hod: E300				Analyst: JKP
Chloride	158		10	25.0	mg/L	50	2/12/2013 19:30
Fluoride	1.76		0.050	0.100	mg/L	1	2/6/2013 16:05
Nitrogen, Nitrate (As N)	1.43	Н	0.030	0.100	mg/L	1	2/6/2013 16:05
Nitrogen, Nitrite (As N)	U	Н	0.030	0.100	mg/L	1	2/6/2013 16:05
Sulfate	2,200		10	25.0	mg/L	50	2/12/2013 19:30
Surr: Selenate (surr)	89.1			85-115	%REC	1	2/6/2013 16:05
Surr: Selenate (surr)	91.3			85-115	%REC	50	2/12/2013 19:30
CYANIDE - SM4500CN E		Meth	hod: M4500CN	I E&G			Analyst: EDG
Cyanide	U		0.0040	0.0200	mg/L	1	2/11/2013 10:05
TOTAL DISSOLVED SOLIDS		Meth	hod: M2540C				Analyst: KAH

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-114

Collection Date: 2/3/2013 11:30 AM

Date: 18-Feb-13

Work Order: 1302138

Lab ID: 1302138-03

Matrix: WATER

Analyses	Result Qual	MDL	Report Limit U	Dilution nits Factor	Date Analyzed
Total Dissolved Solids (Residue, Filterable)	3,760	5.0	10.0 mg	g/L 1	2/7/2013 10:10

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-115

Collection Date: 2/3/2013 12:30 PM

Date: 18-Feb-13

Work Order: 1302138

Lab ID: 1302138-04

Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Me	thod: SW8015 N	1	Prep: SW3	3511 / 2/8/13	Analyst: KMB
TPH (Diesel Range)	U		0.021	0.051	mg/L	1	2/11/2013 16:41
TPH (Oil Range)	U		0.041	0.10	mg/L	1	2/11/2013 16:41
Surr: 2-Fluorobiphenyl	114			60-135	%REC	1	2/11/2013 16:41
GASOLINE RANGE ORGANICS - SW8	015C	Me	thod: SW8015				Analyst: KKP
Gasoline Range Organics	U		0.020	0.0500	mg/L	1	2/7/2013 19:41
Surr: 4-Bromofluorobenzene	101			70-130	%REC	1	2/7/2013 19:41
DISSOLVED MERCURY		Me	thod: SW7470		Prep: SW7	7470 / 2/7/13	Analyst: OFO
Mercury	U		0.000042	0.000200	mg/L	1	2/7/2013 18:14
DISSOLVED METALS		Me	thod: SW6020		Prep: SW3	3010A / 2/6/13	Analyst: ALR
Aluminum	0.00888	J	0.0040	0.0100	mg/L	1	2/8/2013 02:09
Arsenic	0.00499	J	0.0013	0.00500	mg/L	1	2/8/2013 19:53
Barium	0.0309		0.00090	0.00500	mg/L	1	2/8/2013 02:09
Boron	0.865		0.20	0.500	mg/L	10	2/12/2013 14:28
Cadmium	U		0.00080	0.00200	mg/L	1	2/8/2013 02:09
Calcium	518		0.86	5.00	mg/L	10	2/8/2013 16:55
Chromium	U		0.0012	0.00500	mg/L	1	2/8/2013 19:53
Cobalt	0.00290	J	0.00080	0.00500	mg/L	1	2/8/2013 19:53
Copper	0.00704		0.0015	0.00500	mg/L	1	2/8/2013 19:53
Iron	U		0.078	0.200	mg/L	1	2/8/2013 19:53
Lead	U		0.00070	0.00500	mg/L	1	2/8/2013 02:09
Manganese	0.255		0.0025	0.00500	mg/L	1	2/8/2013 19:53
Molybdenum	0.00877		0.0015	0.00500	mg/L	1	2/8/2013 02:09
Nickel	0.00483	J	0.0012	0.00500	mg/L	1	2/8/2013 19:53
Potassium	1.78		0.084	0.200	mg/L	1	2/8/2013 02:09
Selenium	0.00810		0.0010	0.00500	mg/L	1	2/8/2013 19:53
Silver	U		0.00080	0.00500	mg/L	1	2/8/2013 02:09
Sodium	199		0.85	2.00	mg/L	10	2/8/2013 16:55
Uranium	0.0843		0.0050	0.00500	mg/L	1	2/8/2013 02:09
Zinc	0.00973		0.0025	0.00500	mg/L	1	2/8/2013 19:53
LOW-LEVEL SEMIVOLATILES		Me	thod: SW8270		Prep: SW3	3510 / 2/7/13	Analyst: LG
1-Methylnaphthalene	U		0.000050	0.00020	mg/L	1	2/8/2013 16:32
2-Methylnaphthalene	U		0.000050	0.00020	mg/L	1	2/8/2013 16:32
Benzo(a)pyrene	U		0.000050	0.00020	mg/L	1	2/8/2013 16:32
Naphthalene	U		0.000050	0.00020	mg/L	1	2/8/2013 16:32
Surr: 2,4,6-Tribromophenol	73.4			34-129	%REC	1	2/8/2013 16:32
Surr: 2-Fluorobiphenyl	67.9			40-125	%REC	1	2/8/2013 16:32

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-115

Collection Date: 2/3/2013 12:30 PM

Work Order: 1302138

Lab ID: 1302138-04

Date: 18-Feb-13

Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 2-Fluorophenol	59.8			20-120	%REC	1	2/8/2013 16:32
Surr: 4-Terphenyl-d14	102			40-135	%REC	1	2/8/2013 16:32
Surr: Nitrobenzene-d5	70.7			41-120	%REC	1	2/8/2013 16:32
Surr: Phenol-d6	55.2			20-120	%REC	1	2/8/2013 16:32
LOW LEVEL VOLATILES - SW8260C		Met	hod: SW8260				Analyst: AKP
1,1,1-Trichloroethane	U		0.00030	0.0010	mg/L	1	2/6/2013 17:02
1,1,2,2-Tetrachloroethane	U		0.00050	0.0010	mg/L	1	2/6/2013 17:02
1,1,2-Trichloroethane	U		0.00030	0.0010	mg/L	1	2/6/2013 17:02
1,1-Dichloroethane	U		0.00030	0.0010	mg/L	1	2/6/2013 17:02
1,1-Dichloroethene	U		0.00050	0.0010	mg/L	1	2/6/2013 17:02
1,2-Dibromoethane	U		0.00030	0.0010	mg/L	1	2/6/2013 17:02
1,2-Dichloroethane	U		0.00030	0.0010	mg/L	1	2/6/2013 17:02
Benzene	U		0.00020	0.0010	mg/L	1	2/6/2013 17:02
Carbon tetrachloride	U		0.00030	0.0010	mg/L	1	2/6/2013 17:02
Chloroform	U		0.00030	0.0010	mg/L	1	2/6/2013 17:02
Ethylbenzene	U		0.00030	0.0010	mg/L	1	2/6/2013 17:02
Methylene chloride	U		0.00040	0.0020	mg/L	1	2/6/2013 17:02
Tetrachloroethene	U		0.00040	0.0010	mg/L	1	2/6/2013 17:02
Toluene	U		0.00030	0.0010	mg/L	1	2/6/2013 17:02
Trichloroethene	U		0.00020	0.0010	mg/L	1	2/6/2013 17:02
Vinyl chloride	U		0.00040	0.0010	mg/L	1	2/6/2013 17:02
Xylenes, Total	U		0.00030	0.0010	mg/L	1	2/6/2013 17:02
Surr: 1,2-Dichloroethane-d4	89.7			71-125	%REC	1	2/6/2013 17:02
Surr: 4-Bromofluorobenzene	99.2			70-125	%REC	1	2/6/2013 17:02
Surr: Dibromofluoromethane	97.1			74-125	%REC	1	2/6/2013 17:02
Surr: Toluene-d8	101			78-123	%REC	1	2/6/2013 17:02
ANIONS - EPA 300.0 (1993)		Met	hod: E300				Analyst: JKP
Chloride	422		10	25.0	mg/L	50	2/12/2013 19:44
Fluoride	1.10		0.050	0.100	mg/L	1	2/6/2013 16:20
Nitrogen, Nitrate (As N)	0.821	Н	0.030	0.100	mg/L	1	2/6/2013 16:20
Nitrogen, Nitrite (As N)	0.141	Н	0.030	0.100	mg/L	1	2/6/2013 16:20
Sulfate	2,790		10	25.0	mg/L	50	2/12/2013 19:44
Surr: Selenate (surr)	89.1			85-115	%REC	1	2/6/2013 16:20
Surr: Selenate (surr)	93.1			85-115	%REC	50	2/12/2013 19:44
CYANIDE - SM4500CN E		Met	hod: M4500CN	I E&G			Analyst: EDG
Cyanide	U		0.0040	0.0200	mg/L	1	2/11/2013 10:05
TOTAL DISSOLVED SOLIDS		Met	hod: M2540C				Analyst: KAH

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-115

Collection Date: 2/3/2013 12:30 PM

Date: 18-Feb-13

Work Order: 1302138

Lab ID: 1302138-04

Matrix: WATER

Analyses	Result Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Total Dissolved Solids (Residue, Filterable)	4,960	5.0	10.0	mg/L	1	2/7/2013 10:10

Client: Navajo Refining Company

Project: RO Discharge Sampling **Sample ID:** Trip Blank 011813-74

Collection Date: 2/3/2013

Work Order: 1302138

Lab ID: 1302138-05

Matrix: WATER

Date: 18-Feb-13

Analyses	Result Q	Qual MDL	Report Limit	Units	Dilution Factor	Date Analyzed
LOW LEVEL VOLATILES - SW8260C		Method: SW8260				Analyst: AKP
1,1,1-Trichloroethane	U	0.00030	0.0010	mg/L	1	2/6/2013 17:27
1,1,2,2-Tetrachloroethane	U	0.00050	0.0010	mg/L	1	2/6/2013 17:27
1,1,2-Trichloroethane	U	0.00030	0.0010	mg/L	1	2/6/2013 17:27
1,1-Dichloroethane	U	0.00030	0.0010	mg/L	1	2/6/2013 17:27
1,1-Dichloroethene	U	0.00050	0.0010	mg/L	1	2/6/2013 17:27
1,2-Dibromoethane	U	0.00030	0.0010	mg/L	1	2/6/2013 17:27
1,2-Dichloroethane	U	0.00030	0.0010	mg/L	1	2/6/2013 17:27
Benzene	U	0.00020	0.0010	mg/L	1	2/6/2013 17:27
Carbon tetrachloride	U	0.00030	0.0010	mg/L	1	2/6/2013 17:27
Chloroform	U	0.00030	0.0010	mg/L	1	2/6/2013 17:27
Ethylbenzene	U	0.00030	0.0010	mg/L	1	2/6/2013 17:27
Methylene chloride	U	0.00040	0.0020	mg/L	1	2/6/2013 17:27
Tetrachloroethene	U	0.00040	0.0010	mg/L	1	2/6/2013 17:27
Toluene	U	0.00030	0.0010	mg/L	1	2/6/2013 17:27
Trichloroethene	U	0.00020	0.0010	mg/L	1	2/6/2013 17:27
Vinyl chloride	U	0.00040	0.0010	mg/L	1	2/6/2013 17:27
Xylenes, Total	U	0.00030	0.0010	mg/L	1	2/6/2013 17:27
Surr: 1,2-Dichloroethane-d4	88.7		71-125	%REC	1	2/6/2013 17:27
Surr: 4-Bromofluorobenzene	95.0		70-125	%REC	1	2/6/2013 17:27
Surr: Dibromofluoromethane	96.7		74-125	%REC	1	2/6/2013 17:27
Surr: Toluene-d8	97.7		78-123	%REC	1	2/6/2013 17:27

Client: Navajo Refining Company

Project: RO Discharge Sampling **Sample ID:** Trip Blank 011813-50

Lab ID: 1302138-06
Matrix: WATER

Work Order: 1302138

Date: 18-Feb-13

Collection Date: 2/3/2013

Report **Dilution Date Analyzed** Limit **Factor** Analyses Result Qual **MDL** Units **LOW LEVEL VOLATILES - SW8260C** Method: SW8260 Analyst: AKP 1.1.1-Trichloroethane U 0.00030 0.0010 mg/L 1 2/6/2013 17:51 U 1,1,2,2-Tetrachloroethane 0.00050 0.0010 mg/L 2/6/2013 17:51 1 1,1,2-Trichloroethane U 0.00030 0.0010 mg/L 1 2/6/2013 17:51 1,1-Dichloroethane U 0.00030 0.0010 mg/L 2/6/2013 17:51 1,1-Dichloroethene U 0.00050 0.0010 mg/L 2/6/2013 17:51 1 1,2-Dibromoethane U 0.00030 0.0010 mg/L 2/6/2013 17:51 1 U 1,2-Dichloroethane 0.00030 0.0010 mg/L 1 2/6/2013 17:51 Benzene U 0.00020 0.0010 mg/L 1 2/6/2013 17:51 Carbon tetrachloride U 0.00030 0.0010 mg/L 2/6/2013 17:51 1 U Chloroform 0.00030 0.0010 mg/L 1 2/6/2013 17:51 U 0.0010 2/6/2013 17:51 Ethylbenzene 0.00030 mg/L Methylene chloride U 0.00040 0.0020 mg/L 2/6/2013 17:51 1 Tetrachloroethene U 0.00040 0.0010 mg/L 1 2/6/2013 17:51 Toluene U 0.00030 0.0010 mg/L 1 2/6/2013 17:51 Trichloroethene U 0.00020 0.0010 mg/L 2/6/2013 17:51 U Vinyl chloride 0.00040 0.0010 mg/L 1 2/6/2013 17:51 Xylenes, Total U 0.00030 0.0010 mg/L 2/6/2013 17:51 1 Surr: 1,2-Dichloroethane-d4 89.6 71-125 %REC 2/6/2013 17:51 Surr: 4-Bromofluorobenzene 96.6 70-125 %REC 1 2/6/2013 17:51 Surr: Dibromofluoromethane 96.1 74-125 %REC 2/6/2013 17:51 1 Surr: Toluene-d8 %REC 2/6/2013 17:51 99.9 78-123

Client: Navajo Refining Company

Work Order: 1302138

Project: RO Discharge Sampling

Date: 18-Feb-13

QC BATCH REPORT

Batch ID: 67710	Instrument ID FID-16		Method	d: SW801	5M						
MBLK Sample ID:	LBLKW-130208-67710				ι	Jnits: mg/	L	Analysi	s Date: 2/	11/2013 0	2:30 PM
Client ID:	Run II	D: FID-16	_130211B		SeqNo: 3110036		Prep Date: 2/8/2013		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	U	0.050									
TPH (Oil Range)	U	0.10									
Surr: 2-Fluorobiphenyl	0.06355	0.0050	0.06061		0	105	60-135	0			
LCS Sample ID:	LLCSW-130208-67710				Ĺ	Jnits: mg/	L	Analysi	s Date: 2/	11/2013 0	2:52 PM
Client ID:	Run II	D: FID-16	_130211B		Se	eqNo: 311 0	0037	Prep Date: 2/8/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	0.5399	0.050	0.6061		0	89.1	70-130	0			
TPH (Oil Range)	0.5571	0.10	0.6061		0	91.9	70-130	0			
Surr: 2-Fluorobiphenyl	0.0583	0.0050	0.06061		0	96.2	60-135	0			
LCSD Sample ID:	LLCSDW-130208-67710				ι	Jnits: mg/	L	Analysi	s Date: 2/	11/2013 0	3:14 PM
Client ID:	Run II	D: FID-16	_130211B		Se	qNo: 311 0	0038	Prep Date: 2/8/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	0.5053	0.050	0.6061		0	83.4	70-130	0.5399	6.61	20	
TPH (Oil Range)	0.494	0.10	0.6061		0	81.5	70-130	0.5571	12	20	
Surr: 2-Fluorobiphenyl	0.05676	0.0050	0.06061		0	93.7	60-135	0.0583	2.68	20	
The following samples w	vere analyzed in this batch:		302138-01C 302138-04C	13	3021	38-02C	13	02138-03C			

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

Note:

Client: Navajo Refining Company

Work Order: 1302138

Project: RO Discharge Sampling

Batch ID: R142594 II	nstrument ID FID-9		Method	: SW801	5						
MBLK Sample ID: GB	LKW-130207-R142594				Ų	Jnits: mg/	L_	Analys	is Date: 2/	7/2013 06	:29 PM
Client ID:	Run II	D: FID-9	_130207A		Se	qNo: 311 (0011	Prep Date:		DF: 1	
Analyte	Result	PQL	. SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics Surr: 4-Bromofluorobenzen	U ne 0.1043	0.050 0.0050			0	104	70-130	0			
		0.0000	0.7						io Doto: 20	7/2042 05	.05 DM
L CS Sample ID: GL Client ID:	CSW-130207-R142594)· FID-9	_130207A			Jnits: mg/ l :qNo: 311(Prep Date:	is Date: 2/	772013 05 DF: 1	:35 PIVI
Analyte	Result	PQL	_	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.8877	0.050			0	88.8	70-130	0			
Surr: 4-Bromofluorobenzer	ne 0.1154	0.0050			0	115	70-130	0			
LCSD Sample ID: GL	CSDW-130207-R142594					Jnits: mg/	L	Analys	7/2013 05	:53 PM	
Client ID:	Run II	D: FID-9	_130207A	SeqNo: 3110009 F			Prep Date:		DF: 1		
Analyte	Result	PQL	. SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.8879	0.050	1		0	88.8	70-130	0.8877	0.014	30	
Surr: 4-Bromofluorobenzer	ne 0.1121	0.0050	0.1		0	112	70-130	0.1154	2.93	30	
MS Sample ID: 130)2138-04BMS				Units: mg/L			Analys	7/2013 10	:23 PM	
Client ID: MW-115	Run II	D: FID-9	_130207A		Se	qNo: 311 0	0033	Prep Date:		DF: 1	
Analyte	Result	PQL	. SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.7588	0.050	1		0	75.9	70-130	0			
Surr: 4-Bromofluorobenzer	ne 0.1017	0.0050	0.1		0	102	70-130	0			
MSD Sample ID: 130)2138-04BMSD				ι	Jnits: mg/	L	Analys	is Date: 2/	7/2013 10	:41 PM
Client ID: MW-115	Run II	D: FID-9	_130207A		Se	qNo: 311 0	0034	Prep Date:		DF: 1	
Analyte	Result	PQL	. SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.7506	0.050	1		0	75.1	70-130	0.7588	1.08	30	
Surr: 4-Bromofluorobenzer	ne 0.1015	0.0050	0.1		0	101	70-130	0.1017	0.216	30	
The following samples were	analyzed in this batch:		1302138-01B 1302138-04B	13	8021	38-02B	13	02138-03B			

Note:

Client: Navajo Refining Company

Work Order: 1302138

Batch ID: 676	Instrument ID ICP7500		Method	SW602	20	(Dissolve	e)				
MBLK	Sample ID: MBLKW3-020613-67619				Units: mg/	'L	Analysis Date: 2/8/2013 12:38 AN				
Client ID:	Ru	ın ID: ICP750	0_130207A		SeqNo: 310	6113	Prep Date: 2/6	6/2013	DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Aluminum	0.004993	0.010								J	
Arsenic	U	0.0050									
Barium	U	0.0050									
Cadmium	U	0.0020									
Calcium	U	0.50									
Chromium	U	0.0050									
Cobalt	U	0.0050									
Copper	U	0.0050									
Iron	U	0.20									
Lead	U	0.0050									
Manganese	U	0.0050									
Molybdenum	U	0.0050									
Nickel	U	0.0050									
Potassium	U	0.20									
Selenium	0.00238	0.0050								J	
Silver	U	0.0050									
Sodium	U	0.20									
Uranium	U	0.0050									
Zinc	U	0.0050									

Client: Navajo Refining Company

Work Order: 1302138

Batch ID: 676	Instrument ID ICP7500		Method:	SW602	20		(Dissolve))			
LCS	Sample ID: MLCSW3-020613-67619				Ų	Jnits: mg/	L	Analys	is Date: 2	/8/2013 1	2:43 AM
Client ID:	R	un ID: ICP750	0_130207A		Se	qNo: 310	6114	Prep Date: 2/6/	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1092	0.010	0.1		0	109	80-120	0			
Arsenic	0.05204	0.0050	0.05		0	104	80-120	0			
Barium	0.05274	0.0050	0.05		0	105	80-120	0			
Cadmium	0.05136	0.0020	0.05		0	103	80-120	0			
Calcium	5.163	0.50	5		0	103	80-120	0			
Chromium	0.05159	0.0050	0.05		0	103	80-120	0			
Cobalt	0.05069	0.0050	0.05		0	101	80-120	0			
Copper	0.05284	0.0050	0.05		0	106	80-120	0			
Iron	5.018	0.20	5		0	100	80-120	0			
Lead	0.05071	0.0050	0.05		0	101	80-120	0			
Manganese	0.05048	0.0050	0.05		0	101	80-120	0			
Molybdenum	0.04933	0.0050	0.05		0	98.7	80-120	0			
Nickel	0.05065	0.0050	0.05		0	101	80-120	0			
Potassium	5.216	0.20	5		0	104	80-120	0			
Selenium	0.05348	0.0050	0.05		0	107	80-120	0			
Silver	0.05061	0.0050	0.05		0	101	80-120	0			
Sodium	5.159	0.20	5		0	103	80-120	0			
Uranium	0.1015	0.0050	0.1		0	102	80-120	0			
Zinc	0.05422	0.0050	0.05		0	108	80-120	0			

Client: Navajo Refining Company

Work Order: 1302138

Batch ID: 67	619	Instrument ID ICP7500		Metho	d: SW6020		(Dissolve)			
MS	Sample ID:	1302138-01EMS				Units: mg/	L	Analysis Date: 2/8/2013 01:0			:03 AM
Client ID: RC	Discharge	Run	ID: ICP750	0_130207A	S	SeqNo: 310	6118	Prep Date: 2/6/2	2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum		0.1175	0.010	0.1	0.006684	111	75-125	0			
Arsenic		0.06218	0.0050	0.05	0.004935	114	75-125	0			
Barium		0.1161	0.0050	0.05	0.06275	107	75-125	0			
Cadmium		0.05003	0.0020	0.05	0.0001626	99.7	75-125	0			
Calcium		754	0.50	5	726.2	556	75-125	0			SEC
Chromium		0.05429	0.0050	0.05	0.0009708	107	75-125	0			
Cobalt		0.05008	0.0050	0.05	0.0005107	99.1	75-125	0			
Copper		0.05121	0.0050	0.05	0.001766	98.9	75-125	0			
Iron		5.098	0.20	5	0.05082	101	75-125	0			
Lead		0.05237	0.0050	0.05	0.0006516	103	75-125	0			
Manganese		0.05229	0.0050	0.05	0.001463	102	75-125	0			
Molybdenum		0.06607	0.0050	0.05	0.01252	107	75-125	0			
Nickel		0.05158	0.0050	0.05	0.002642	97.9	75-125	0			
Potassium		10.31	0.20	5	4.407	118	75-125	0			
Selenium		0.07267	0.0050	0.05	0.01304	119	75-125	0			
Silver		0.04765	0.0050	0.05	-0.00009242	95.5	75-125	0			
Sodium		73.65	0.20	5	65.44	164	75-125	0			SO
Uranium		0.1166	0.0050	0.1	0.006008	111	75-125	0			
Zinc		0.06257	0.0050	0.05	0.01316	98.8	75-125	0			

Client: Navajo Refining Company

Work Order: 1302138

Batch ID: 67619	Instrument ID ICP7500		Metho	d: SW6020		(Dissolve)			
MSD Sample ID:	1302138-01EMSD			ļ	Jnits: mg/	L	Analysi	s Date: 2/	8/2013 01	:08 AM
Client ID: RO Discharge	Run	ID: ICP750	0_130207A	. Se	eqNo: 310	6119	Prep Date: 2/6/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1166	0.010	0.1	0.006684	110	75-125	0.1175	0.769	25	
Arsenic	0.06119	0.0050	0.05	0.004935	113	75-125	0.06218	1.6	25	
Barium	0.1173	0.0050	0.05	0.06275	109	75-125	0.1161	1.03	25	
Cadmium	0.05093	0.0020	0.05	0.0001626	102	75-125	0.05003	1.78	25	
Calcium	743.7	0.50	5	726.2	350	75-125	754	1.38	25	SEO
Chromium	0.05277	0.0050	0.05	0.0009708	104	75-125	0.05429	2.84	25	
Cobalt	0.04949	0.0050	0.05	0.0005107	98	75-125	0.05008	1.19	25	
Copper	0.04946	0.0050	0.05	0.001766	95.4	75-125	0.05121	3.48	25	
Iron	5.027	0.20	5	0.05082	99.5	75-125	5.098	1.4	25	
Lead	0.05236	0.0050	0.05	0.0006516	103	75-125	0.05237	0.0191	25	
Manganese	0.05087	0.0050	0.05	0.001463	98.8	75-125	0.05229	2.75	25	
Molybdenum	0.06545	0.0050	0.05	0.01252	106	75-125	0.06607	0.943	25	
Nickel	0.05066	0.0050	0.05	0.002642	96	75-125	0.05158	1.8	25	
Potassium	10.09	0.20	5	4.407	114	75-125	10.31	2.16	25	
Selenium	0.07481	0.0050	0.05	0.01304	124	75-125	0.07267	2.9	25	
Silver	0.04757	0.0050	0.05	-0.00009242	95.3	75-125	0.04765	0.168	25	
Sodium	72.71	0.20	5	65.44	145	75-125	73.65	1.28	25	SO
Uranium	0.1171	0.0050	0.1	0.006008	111	75-125	0.1166	0.428	25	
Zinc	0.06015	0.0050	0.05	0.01316	94	75-125	0.06257	3.94	25	

Navajo Refining Company Client:

Work Order: 1302138

RO Discharge Sampling Project:

Batch ID: 67619	Instrument ID ICP7500		Method	SW602	20		(Dissolve)			
DUP Sample ID:	1302138-01EDUP				Ĺ	Jnits: mg/	L	Analysi	s Date: 2	/8/2013 12	:53 AM
Client ID: RO Discharge	Run II): ICP75	00_130207A		Se	qNo: 310	6116	Prep Date: 2/6/2	2013	DF: 1	
				SPK Ref			Control	RPD Ref		RPD	
Analyte	Result	PQL	SPK Val	Value		%REC	Limit	Value	%RPD	Limit	Qual
Aluminum	0.006071	0.010	0		0	0	0-0	0.006684	0	25	J
Arsenic	0.005444	0.0050	0		0	0	0-0	0.004935	9.81	25	
Barium	0.06235	0.0050	0		0	0	0-0	0.06275	0.639	25	
Cadmium	U	0.0020	0		0	0	0-0	0.0001626	0	25	
Chromium	U	0.0050	0		0	0	0-0	0.0009708	0	25	
Cobalt	U	0.0050	0		0	0	0-0	0.0005107	0	25	
Copper	0.001881	0.0050	0		0	0	0-0	0.001766	0	25	J
Iron	U	0.20	0		0	0	0-0	0.05082	0	25	
_ead	U	0.0050	0		0	0	0-0	0.0006516	0	25	
Manganese	U	0.0050	0		0	0	0-0	0.001463	0	25	
Molybdenum	0.01297	0.0050	0		0	0	0-0	0.01252	3.53	3 25	
Nickel	0.002802	0.0050	0		0	0	0-0	0.002642	0	25	J
Potassium	4.498	0.20	0		0	0	0-0	4.407	2.04	25	
Selenium	0.01234	0.0050	0		0	0	0-0	0.01304	5.52	2 25	
Silver	U	0.0050	0		0	0	0-0	-0.00009242	0	25	
Sodium	67.07	0.20	0		0	0	0-0	65.44	2.46	25	
Uranium	0.006251	0.0050	0		0	0		0.006008	3.96	3 25	
Zinc	0.01375	0.0050	0		0	0	0-0	0.01316	4.38	3 25	
DUP Sample ID:	1302138-01EDUP				ι	Jnits: mg/	L	Analysi	s Date: 2	/8/2013 01	:22 PM
Client ID: RO Discharge	Run II): ICP75	00_130208A		Se	qNo: 310	6804	Prep Date: 2/6/2	2013	DF: 50	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	662	25	0		0	0	0-0	625	5.75	5 25	
The following samples w	vere analyzed in this batch:		302138-01E 302138-04E	13	021	38-02E	13	02138-03E			

1302138-04E

Client: Navajo Refining Company

Work Order: 1302138

Project: RO Discharge Sampling

Batch ID: 67	624 Instrur	ment ID Mercury		Method	d: SW747	0		(Dissolve	e)			
MBLK	Sample ID: GBLKW	4-020713-67624				Unit	s: mg/	'L	Analys	sis Date: 2/	7/2013 04	:12 PN
Client ID:		Run	ID: MERC	JRY_130207	Ά	SeqN	o: 310	5666	Prep Date: 2/7	/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%	6REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Mercury		U	0.00020									
LCS	Sample ID: GLCSW	4-020713-67624				Unit	s: mg/	Ľ	Analys	sis Date: 2/	7/2013 04	:14 PN
Client ID:		Run	ID: MERC	JRY_130207	Ά	SeqN	o: 310	5667	Prep Date: 2/7	/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%	6REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Mercury		0.00534	0.00020	0.005		0	107	80-120	C)		
MS	Sample ID: 1302162	2-02DMS				Unit	s: mg/	'L	Analys	sis Date: 2/	7/2013 04	:20 PN
Client ID:		Run	ID: MERC	JRY_130207	' A	SeqN	o: 310	5670	Prep Date: 2/7	/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%	6REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Mercury		0.00399	0.00020	0.005	-0.0000)1	80	80-120	C)		
MSD	Sample ID: 1302162	2-02DMSD				Unit	s: mg/	Ľ	Analys	sis Date: 2/	7/2013 04	:22 PN
Client ID:		Run	ID: MERC	JRY_130207	Ά	SeqN	o: 310	5671	Prep Date: 2/7	/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%	6REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Mercury		0.00392	0.00020	0.005	-0.0000)1	78.6	80-120	0.00399	1.77	20	S
DUP	Sample ID: 1302162	2-02DDUP				Unit	s: mg/	'L	Analys	sis Date: 2/	7/2013 04	:18 PN
Client ID:		Run	ID: MERC	JRY_130207	' A	SeqN	o: 310	5669	Prep Date: 2/7	/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%	6REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Mercury		U	0.00020	0		0	0	0-0	-0.00001	0	20	
The following	ng samples were ana	lyzed in this batch		302138-01E 302138-04E	13	02138	-02E	13	02138-03E			

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

Client: Navajo Refining Company

Work Order: 1302138

Project: RO Discharge Sampling

Batch ID: 676	Instrument ID ICPMS05		Method	: SW602	20	(Dissolve	e)			
MBLK	Sample ID: MBLKW5-020813-67639				Units: mg/	'L	Analy	sis Date: 2	/11/2013	05:25 PN
Client ID:	Ru	n ID: ICPMS	05_130211A		SeqNo: 310	9576	Prep Date: 2/8	3/2013	DF: 1	
				SPK Ref		Control	RPD Ref		RPD	
Analyte	Result	PQL	SPK Val	Value	%REC	Limit	Value	%RPD	Limit	Qual
Aluminum	0.006192	0.010								J
Arsenic	U	0.0050								
Barium	U	0.0050								
Cadmium	U	0.0020								
Calcium	0.2533	0.50								J
Chromium	U	0.0050								
Cobalt	U	0.0050								
Copper	U	0.0050								
Iron	U	0.20								
Lead	U	0.0050								
Manganese	U	0.0050								
Molybdenum	U	0.0050								
Nickel	U	0.0050								
Potassium	U	0.20								
Selenium	U	0.0050								
Silver	U	0.0050								
Uranium	U	0.0050								
Zinc	0.003007	0.0050								J
MBLK	Sample ID: MBLKW5-020813-67639				Units: mg/	'L	Analy	sis Date: 2	/12/2013 (02:04 PM
Client ID:	Ru	n ID: ICPMS	05_130212A		SeqNo: 311	0576	Prep Date: 2/8	3/2013	DF: 1	
				SPK Ref		Control	RPD Ref		RPD	
Analyte	Result	PQL	SPK Val	Value	%REC	Limit	Value	%RPD	Limit	Qual
Boron	U	0.050								
Sodium	U	0.20								

Client: Navajo Refining Company

Work Order: 1302138

Project: RO Discharge Sampling

Batch ID: 676	Instrument ID ICPMS05	5	Method	SW602	20		(Dissolve	e)			
LCS	Sample ID: MLCSW5-020813-67639				Ĺ	Jnits: mg/	'L	Analysis	Date: 2	/11/2013 0	5:27 PN
Client ID:	Ru	un ID: ICPMS	05_130211A		Se	qNo: 310	9577	Prep Date: 2/8/20)13	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1117	0.010	0.1		0	112	80-120	0			
Arsenic	0.05058	0.0050	0.05		0	101	80-120	0			
Barium	0.05024	0.0050	0.05		0	100	80-120	0			
Cadmium	0.05148	0.0020	0.05		0	103	80-120	0			
Calcium	5.189	0.50	5		0	104	80-120	0			
Chromium	0.05108	0.0050	0.05		0	102	80-120	0			
Cobalt	0.05227	0.0050	0.05		0	105	80-120	0			
Copper	0.05136	0.0050	0.05		0	103	80-120	0			
Iron	5.088	0.20	5		0	102	80-120	0			
Lead	0.05288	0.0050	0.05		0	106	80-120	0			
Manganese	0.05154	0.0050	0.05		0	103	80-120	0			
Molybdenum	0.04945	0.0050	0.05		0	98.9	80-120	0			
Nickel	0.05042	0.0050	0.05		0	101	80-120	0			
Potassium	5.069	0.20	5		0	101	80-120	0			
Selenium	0.05183	0.0050	0.05		0	104	80-120	0			
Silver	0.05213	0.0050	0.05		0	104	80-120	0			
Sodium	5.221	1.0	5		0	104	80-120	0			
Uranium	0.1001	0.0050	0.1		0	100	80-120	0			
Zinc	0.05315	0.0050	0.05		0	106	80-120	0			
LCS	Sample ID: MLCSW5-020813-67639				L	Jnits: mg/	'L	Analysis	Date: 2	/12/2013 0	2:06 PM
Client ID:	Ru	un ID: ICPMS	05_130212A		Se	qNo: 311	0577	Prep Date: 2/8/20	13	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
									/UNF D		Qual
Boron	0.5137	0.050	0.5		0	103	80-120	0			

Client: Navajo Refining Company

Work Order: 1302138

Project: RO Discharge Sampling

Batch ID: 67639	Instrument ID ICPMS05		Method:	SW6020		(Dissolve)		
MS Sampl	le ID: 1302162-02DMS				Units: mg/	L	Analysis Date: 2	2/11/2013	05:51 PM
Client ID:	Run	ID: ICPMS	05_130211A	Se	eqNo: 310 9	9595	Prep Date: 2/8/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value %RPD	RPD Limit	Qual
Aluminum	0.3754	0.010	0.1	0.08538	290	75-125	0		S
Arsenic	0.05166	0.0050	0.05	0.001764	99.8	75-125	0		
Barium	0.1245	0.0050	0.05	0.07333	102	75-125	0		
Boron	1.31	0.050	0.5	0.723	117	75-125	0		
Cadmium	0.05072	0.0020	0.05	0	101	75-125	0		
Calcium	205.4	0.50	5	195.9	189	75-125	0		SEO
Chromium	0.05017	0.0050	0.05	0	100	75-125	0		
Cobalt	0.05197	0.0050	0.05	0.00258	98.8	75-125	0		
Copper	0.05874	0.0050	0.05	0.007833	102	75-125	0		
Iron	5.244	0.20	5	0.08799	103	75-125	0		
Lead	0.05166	0.0050	0.05	0	103	75-125	0		
Manganese	1.043	0.0050	0.05	0.9886	108	75-125	0		0
Molybdenum	0.05065	0.0050	0.05	0.003301	94.7	75-125	0		
Nickel	0.05995	0.0050	0.05	0.01032	99.3	75-125	0		
Potassium	5.185	0.20	5	0.3187	97.3	75-125	0		
Selenium	0.05066	0.0050	0.05	0	101	75-125	0		
Silver	0.04846	0.0050	0.05	0	96.9	75-125	0		
Sodium	80.45	0.20	5	75.22	105	75-125	0		0
Uranium	0.1148	0.0050	0.05	0.01453	201	75-125	0		S
Zinc	0.1201	0.0050	0.05	0.111	18.2	75-125	0		S

Client: Navajo Refining Company

Work Order: 1302138

Project: RO Discharge Sampling

Batch ID: 67639	Instrument ID ICPMS05		Method:	SW6020	-	(Dissolve	e)			
MSD Sa	ample ID: 1302162-02DMSD				Jnits: mg/	L	Analysi	is Date: 2/	11/2013 0	5:54 PM
Client ID:	Rur	n ID: ICPMS	05_130211A	Se	eqNo: 310 9	9596	Prep Date: 2/8/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.8466	0.010	0.1	0.08538	761	75-125	0.3754	77.1	25	SR
Arsenic	0.05059	0.0050	0.05	0.001764	97.7	75-125	0.05166	2.1	25	
Barium	0.1256	0.0050	0.05	0.07333	105	75-125	0.1245	0.876	25	-
Boron	1.281	0.050	0.5	0.723	112	75-125	1.31	2.24	25	
Cadmium	0.05061	0.0020	0.05	0	101	75-125	0.05072	0.231	25	
Calcium	198.7	0.50	5	195.9	54.4	75-125	205.4	3.34	25	SEO
Chromium	0.04976	0.0050	0.05	0	99.5	75-125	0.05017	0.817	25	
Cobalt	0.05119	0.0050	0.05	0.00258	97.2	75-125	0.05197	1.53	25	
Copper	0.06255	0.0050	0.05	0.007833	109	75-125	0.05874	6.3	25	
Iron	5.64	0.20	5	0.08799	111	75-125	5.244	7.28	25	
Lead	0.05249	0.0050	0.05	0	105	75-125	0.05166	1.61	25	
Manganese	1.016	0.0050	0.05	0.9886	55.5	75-125	1.043	2.56	25	so
Molybdenum	0.05104	0.0050	0.05	0.003301	95.5	75-125	0.05065	0.753	25	
Nickel	0.05914	0.0050	0.05	0.01032	97.6	75-125	0.05995	1.36	25	
Potassium	5.175	0.20	5	0.3187	97.1	75-125	5.185	0.195	25	
Selenium	0.04861	0.0050	0.05	0	97.2	75-125	0.05066	4.12	25	
Silver	0.04821	0.0050	0.05	0	96.4	75-125	0.04846	0.523	25	
Sodium	77.87	0.20	5	75.22	52.9	75-125	80.45	3.26	25	SO
Uranium	0.1148	0.0050	0.05	0.01453	201	75-125	0.1148	0.054	25	S
Zinc	0.121	0.0050	0.05	0.111	19.9	75-125	0.1201	0.707	25	s

Client: Navajo Refining Company

Work Order: 1302138

Project: RO Discharge Sampling

Batch ID: 67639	Instrument ID ICPMS05		Method:	SW6020		(Dissolve)			
DUP Sampl	e ID: 1302162-02DDUP				Units: mg/	L	Analysi	s Date: 2/	11/2013 0	5:49 PN
Client ID:	Run I	D: ICPMS	05_130211A	S	eqNo: 310 :	9594	Prep Date: 2/8/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.1358	0.010	0	0	0	0-0	0.08538	45.6	25	R
Arsenic	0.001544	0.0050	0	0	0	0-0	0.001764	0	25	J
Barium	0.07134	0.0050	0	0	0	0-0	0.07333	2.75	25	
Boron	0.7208	0.050	0	0	0	0-0	0.723	0.295	25	
Cadmium	U	0.0020	0	0	0	0-0	0.000088	0	25	
Chromium	U	0.0050	0	0	0	0-0	0.000339	0	25	
Cobalt	0.002315	0.0050	0	0	0	0-0	0.00258	0	25	J
Copper	0.007413	0.0050	0	0	0	0-0	0.007833	5.51	25	
Iron	0.1153	0.20	0	0	0	0-0	0.08799	0	25	J
Lead	U	0.0050	0	0	0	0-0	0.000123	0	25	
Manganese	0.9603	0.0050	0	0	0	0-0	0.9886	2.9	25	
Molybdenum	0.003106	0.0050	0	0	0	0-0	0.003301	0	25	J
Nickel	0.0105	0.0050	0	0	0	0-0	0.01032	1.73	25	
Potassium	0.3152	0.20	0	0	0	0-0	0.3187	1.11	25	
Selenium	U	0.0050	0	0	0	0-0	-0.000908	0	25	
Silver	U	0.0050	0	0	0	0-0	0.000034	0	25	
Sodium	74.01	0.20	0	0	0	0-0	75.22	1.62	25	
Uranium	0.01412	0.0050	0	0	0		0.01453	2.91	25	
Zinc	0.1104	0.0050	0	0	0	0-0	0.111	0.546	25	
DUP Sampl	e ID: 1302162-02DDUP				Units: mg/	L	Analysi	s Date: 2/	12/2013 0	2:35 PN
Client ID:	Run I	D: ICPMS	05_130212A	S	eqNo: 311	0589	Prep Date: 2/8/2	2013	DF: 10	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	198.5	5.0	0	0	0	0-0	202.2	1.85	25	
The following samp	oles were analyzed in this batch:		302138-01E 302138-04E	1302	138-02E	13	02138-03E			

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

0

0

0

0

0

0

Client: Navajo Refining Company

Work Order: 1302138

Surr: 2,4,6-Tribromophenol

Surr: 2-Fluorobiphenyl

Surr: 2-Fluorophenol

Surr: 4-Terphenyl-d14

Surr: Nitrobenzene-d5

Surr: Phenol-d6

Note:

Project: RO Discharge Sampling

Batch ID: 67652	Instrument ID SV-6		Method	: SW827	70						
MBLK Sample ID: \$	SBLKW2-130207-67652				ι	Jnits: μg/L		Analy	sis Date: 2	/8/2013 0 ⁻	I:13 PM
Client ID:	Run	ID: SV-6_1	30208A		Se	eqNo: 310 8	3320	Prep Date: 2/7	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	U	0.20									
2-Methylnaphthalene	U	0.20									
Benzo(a)pyrene	U	0.20									
Naphthalene	U	0.20									
Surr: 2,4,6-Tribromophe	nol 3.917	0.20	5		0	78.3	34-129	()		
Surr: 2-Fluorobiphenyl	4.298	0.20	5		0	86	40-125	()		
Surr: 2-Fluorophenol	3.88	0.20	5		0	77.6	20-120	()		
Surr: 4-Terphenyl-d14	4.845	0.20	5		0	96.9	40-135	()		
Surr: Nitrobenzene-d5	4.337	0.20	5		0	86.7	41-120	()		
Surr: Phenol-d6	4.179	0.20	5		0	83.6	20-120	()		
LCS Sample ID: \$	SLCSW2-130207-67652				ι	Jnits: μg/L		Analy	sis Date: 2	/8/2013 0 ⁻	1:33 PM
Client ID:	Run	ID: SV-6_1	30208A		Se	eqNo: 310 8	3321	Prep Date: 2/7	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	4.55	0.20	5		0	91	45-120	()		
2-Methylnaphthalene	4.623	0.20	5		0	92.5	50-120	()		
Benzo(a)pyrene	4.718	0.20	5		0	94.4	45-120	()		
Naphthalene	4.463	0.20	5		0	89.3	45-120	()		

4.284

4.295

4.096

4.973

4.235

4.012

0.20

0.20

0.20

0.20

0.20

0.20

5

5

5

5

5

0

0

0

0

0

85.7

85.9

81.9

99.5

84.7

80.2

34-129

40-125

20-120

40-135

41-120

20-120

Client: Navajo Refining Company

Work Order: 1302138

Surr: 2,4,6-Tribromophenol

Surr: 2-Fluorobiphenyl

Surr: 2-Fluorophenol

Surr: 4-Terphenyl-d14

Surr: Nitrobenzene-d5

Surr: Phenol-d6

Note:

Project: RO Discharge Sampling

Batch ID: 67652	atch ID: 67652 Instrument ID SV-6									
LCSD Sample ID: SL	.CSDW2-130207-67652				Units: µg/l	_	Analysi	s Date: 2/	8/2013 01	:52 PM
Client ID:	Run II	D: SV-6_1	30208A	S	eqNo: 310	8323	Prep Date: 2/7/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	4.365	0.20	5	0	87.3	45-120	4.55	4.13	20	
2-Methylnaphthalene	4.423	0.20	5	0	88.5	50-120	4.623	4.44	20	
Benzo(a)pyrene	4.773	0.20	5	0	95.5	45-120	4.718	1.16	20	
Naphthalene	4.285	0.20	5	0	85.7	45-120	4.463	4.07	20	
Surr: 2,4,6-Tribromopheno	ol 4.279	0.20	5	0	85.6	34-129	4.284	0.118	0	
Surr: 2-Fluorobiphenyl	4.281	0.20	5	0	85.6	40-125	4.295	0.322	0	
Surr: 2-Fluorophenol	4.05	0.20	5	0	81	20-120	4.096	1.12	0	
Surr: 4-Terphenyl-d14	4.878	0.20	5	0	97.6	40-135	4.973	1.92	0	
Surr: Nitrobenzene-d5	4.191	0.20	5	0	83.8	41-120	4.235	1.04	0	
Surr: Phenol-d6	4.006	0.20	5	0	80.1	20-120	4.012	0.155	0	
MS Sample ID: 13	02166-02AMS				Units: µg/l	_	Analysi	s Date: 2/	8/2013 02	:35 PM
Client ID:	Run II	D: SV-6_1	30208A	S	eqNo: 310	8326	Prep Date: 2/7/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	4.507	0.20	5	0.041	89.3	45-120	0			
2-Methylnaphthalene	4.563	0.20	5	0.06144	90	50-120	0			
Benzo(a)pyrene	4.668	0.20	5	0	93.4	45-120	0			
Naphthalene	4.369	0.20	5	0.05768	86.2	45-120	0			

4.338

4.351

3.971

5.066

4.259

3.95

0.20

0.20

0.20

0.20

0.20

0.20

5

5

5

5

5

5

0

0

0

0

0

0

86.8

87

79.4

101

85.2

79

34-129

40-125

20-120

40-135

41-120

20-120

0

0

0

0

0

0

Client: Navajo Refining Company

Work Order: 1302138

Project: RO Discharge Sampling

Batch ID: 67652 Instrument ID SV-6 Method: SW8270

MSD Sample ID: 1302166-0	2AMSD			l	Jnits: μg/I	-	Analysi	s Date: 2/	8/2013 02	:54 PM
Client ID:	Run II	D: SV-6_1	30208A	Se	eqNo: 310	8327	Prep Date: 2/7/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	4.55	0.20	5	0.041	90.2	45-120	4.507	0.951	20	
2-Methylnaphthalene	4.617	0.20	5	0.06144	91.1	50-120	4.563	1.17	20	
Benzo(a)pyrene	4.952	0.20	5	0	99	45-120	4.668	5.91	20	
Naphthalene	4.415	0.20	5	0.05768	87.1	45-120	4.369	1.03	20	
Surr: 2,4,6-Tribromophenol	4.292	0.20	5	0	85.8	34-129	4.338	1.06	0	
Surr: 2-Fluorobiphenyl	4.291	0.20	5	0	85.8	40-125	4.351	1.38	0	
Surr: 2-Fluorophenol	3.848	0.20	5	0	77	20-120	3.971	3.15	0	
Surr: 4-Terphenyl-d14	5.26	0.20	5	0	105	40-135	5.066	3.77	0	
Surr: Nitrobenzene-d5	4.13	0.20	5	0	82.6	41-120	4.259	3.08	0	
Surr: Phenol-d6	3.943	0.20	5	0	78.9	20-120	3.95	0.168	0	

The following samples were analyzed in this batch:

1302138-01D	1302138-02D	1302138-03D	
1302138-04D			

Note:

QC BATCH REPORT

Client: Navajo Refining Company

Work Order: 1302138

Project: RO Discharge Sampling

Batch ID: R142213	Instrument ID VOA4		Metho	d: SW826	60					
MBLK Sample ID: VI	BLKW-130206-R142213				Units: µg	/L	Analy	/sis Date: 2	/6/2013 1	0:59 AM
Client ID:	Run ID	: VOA4_	130206A		SeqNo: 31	03319	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	U	1.0								
1,1,2,2-Tetrachloroethane	U	1.0								
1,1,2-Trichloroethane	U	1.0								
1,1-Dichloroethane	U	1.0								
1,1-Dichloroethene	U	1.0								
1,2-Dibromoethane	U	1.0								
1,2-Dichloroethane	U	1.0								
Benzene	U	1.0								
Carbon tetrachloride	U	1.0								
Chloroform	U	1.0								
Ethylbenzene	U	1.0								
Methylene chloride	U	2.0								
Tetrachloroethene	U	1.0								
Toluene	U	1.0								
Trichloroethene	U	1.0								
Vinyl chloride	U	1.0								
Xylenes, Total	U	1.0								
Surr: 1,2-Dichloroethane-	d4 45.87	1.0	50		0 91.7	71-125		0		
Surr: 4-Bromofluorobenze	ne 48.12	1.0	50		0 96.2	70-125		0		
Surr: Dibromofluorometha	ne 50.46	1.0	50		0 101	74-125		0		
Surr: Toluene-d8	48.36	1.0	50		0 96.7	78-123		0		

0

Client: Navajo Refining Company

Work Order: 1302138

Surr: Toluene-d8

Note:

Project: RO Discharge Sampling

Batch ID: R142213	Instrument ID VOA4		Method	: SW8260	0						
LCS Sample ID: Y	VLCSW-130206-R142213				U	Inits: μg/L		Analys	sis Date: 2	/6/2013 1	0:11 AM
Client ID:	Run	ID: VOA4_	130206A		Sec	qNo: 310 3	3318	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	52.73	1.0	50		0	105	80-120	O	1		
1,1,2,2-Tetrachloroethane	43.78	1.0	50		0	87.6	74-123	0	1		
1,1,2-Trichloroethane	46.9	1.0	50		0	93.8	80-120	0			
1,1-Dichloroethane	45.3	1.0	50		0	90.6	80-120	0	1		
1,1-Dichloroethene	52.88	1.0	50		0	106	80-120	0			
1,2-Dibromoethane	51.68	1.0	50		0	103	80-120	C	1		
1,2-Dichloroethane	48.52	1.0	50		0	97	79-120	O			
Benzene	47.93	1.0	50		0	95.9	80-120	O	1		
Carbon tetrachloride	57.55	1.0	50		0	115	79-120	0			
Chloroform	46.06	1.0	50		0	92.1	80-120	C	1		
Ethylbenzene	47.01	1.0	50		0	94	80-120	0			
Methylene chloride	46.19	2.0	50		0	92.4	75-125	C	1		
Tetrachloroethene	51.51	1.0	50		0	103	80-120	0			
Toluene	46.16	1.0	50		0	92.3	80-121	C	1		
Trichloroethene	53.76	1.0	50		0	108	80-120	0			
Vinyl chloride	47.31	1.0	50		0	94.6	75-125	C	1		
Xylenes, Total	136.7	1.0	150		0	91.2	80-124	O			
Surr: 1,2-Dichloroethane	e-d4 44.19	1.0	50		0	88.4	71-125	C	1		
Surr: 4-Bromofluorobenz	zene 50.47	1.0	50		0	101	70-125	O			
Surr: Dibromofluorometh	nane 49.76	1.0	50		0	99.5	74-125	0	1		

50

1.0

0

95.3

78-123

47.67

0

0

0

0

0

0

0

0

0

0

0

0

0

Client: Navajo Refining Company

Work Order: 1302138

Batch ID: R142213

Benzene

Chloroform

Toluene

Note:

Ethylbenzene

Methylene chloride

Tetrachloroethene

Trichloroethene

Vinyl chloride

Xylenes, Total

Surr: 1,2-Dichloroethane-d4

Surr: 4-Bromofluorobenzene

Surr: Dibromofluoromethane

Surr: Toluene-d8

Carbon tetrachloride

Project: RO Discharge Sampling

Instrument ID VOA4

834.5

546.4

438.5

460.1

442.4

501.9

454.7

511.8

456.7

1358

428.4

506.9

484.2

479.6

MS	Sample ID: 1302133-05AMS					ι	Jnits: µg/L	-	Analysis Date: 2/6/2013 11:23 AM				1:23 AM
Client ID:		Run II	D: VOA4 _	130206A		Se	qNo: 310 3	3320	Prep Date:		DF: 10		
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value		%RPD	RPD Limit	Qual
1,1,1-Trich	nloroethane	504.8	10	500		0	101	80-120		0			
1,1,2,2-Te	trachloroethane	421.3	10	500		0	84.3	74-123		0			
1,1,2-Trich	nloroethane	453.8	10	500		0	90.8	80-120		0			
1,1-Dichlo	roethane	427.1	10	500		0	85.4	80-120		0			
1,1-Dichlo	roethene	511.5	10	500		0	102	80-120		0			
1,2-Dibron	noethane	501.8	10	500		0	100	80-120		0			
1,2-Dichlo	roethane	461.9	10	500		0	92.4	79-120		0			

500

500

500

500

500

500

500

500

500

1500

500

500

500

500

355.1

0

0

0

0

0

0

0

0

0

0

0

1.298

2.156

95.9

109

87.7

88.5

100

90.7

102

91.3

90.4

85.7

101

96.8

95.9

92

80-120

79-120

80-120

80-120

75-125

80-120

80-121

80-120

75-125

80-124

71-125

70-125

74-125

78-123

10

10

10

10

20

10

10

10

10

10

10

10

10

10

Method: SW8260

Client: Navajo Refining Company

Work Order: 1302138

Project: RO Discharge Sampling

Batch ID: R142213	Instrument ID VOA4	Method: SW8260

MSD Sample ID: 1302133-05	5AMSD			ı	Jnits: µg/l	-	Analysi	s Date: 2/	6/2013 11	:47 AN
Client ID:	Run II	D: VOA4 _	130206A	Se	eqNo: 310	3321	Prep Date:		DF: 10)
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	497.3	10	500	0	99.5	80-120	504.8	1.5	20	
1,1,2,2-Tetrachloroethane	420.3	10	500	0	84.1	74-123	421.3	0.236	20	
1,1,2-Trichloroethane	447.3	10	500	0	89.5	80-120	453.8	1.46	20	
1,1-Dichloroethane	414	10	500	0	82.8	80-120	427.1	3.13	20	
1,1-Dichloroethene	480.8	10	500	0	96.2	80-120	511.5	6.19	20	
1,2-Dibromoethane	481.3	10	500	0	96.3	80-120	501.8	4.16	20	
1,2-Dichloroethane	452.8	10	500	0	90.6	79-120	461.9	1.97	20	
Benzene	801.7	10	500	355.1	89.3	80-120	834.5	4.02	20	
Carbon tetrachloride	535.7	10	500	0	107	79-120	546.4	1.99	20	
Chloroform	419.6	10	500	0	83.9	80-120	438.5	4.39	20	
Ethylbenzene	450.2	10	500	0	90	80-120	460.1	2.17	20	
Methylene chloride	421.3	20	500	0	84.3	75-125	442.4	4.87	20	
Tetrachloroethene	498.5	10	500	0	99.7	80-120	501.9	0.683	20	
Toluene	448.6	10	500	1.298	89.5	80-121	454.7	1.35	20	
Trichloroethene	483.1	10	500	0	96.6	80-120	511.8	5.78	20	
Vinyl chloride	435.8	10	500	0	87.2	75-125	456.7	4.68	20	
Xylenes, Total	1321	10	1500	2.156	87.9	80-124	1358	2.75	20	
Surr: 1,2-Dichloroethane-d4	421.1	10	500	0	84.2	71-125	428.4	1.71	20	
Surr: 4-Bromofluorobenzene	502.8	10	500	0	101	70-125	506.9	0.796	20	
Surr: Dibromofluoromethane	472.3	10	500	0	94.5	74-125	484.2	2.49	20	
Surr: Toluene-d8	479.3	10	500	0	95.9	78-123	479.6	0.0501	20	

The following samples were analyzed in this batch:

1302138-01A	1302138-02A	1302138-03A	
1302138-04A	1302138-05A	1302138-06A	

Client: Navajo Refining Company

Work Order: 1302138

Project: RO Discharge Sampling

Batch ID: R142275	Instrument ID ICS2100		Method	: E300		((Dissolve	e)			
MBLK Sample ID): WBLKW2-R142275				Unit	ts: mg/	L	Analys	is Date: 2/	6/2013 11	:17 AM
Client ID:	Run	ID: ICS210	0_130206A		SeqN	lo: 310 4	4639	Prep Date:		DF: 1	
				SPK Ref			Control	RPD Ref		RPD Limit	
Analyte	Result	PQL	SPK Val	Value	%	6REC	Limit	Value	%RPD	Limit	Qual
Chloride	U	0.50									
Fluoride	U	0.10									
Nitrogen, Nitrate (As N)	U	0.10									
Nitrogen, Nitrite (As N)	U	0.10									
Surr: Selenate (surr)	4.316	0.10	5		0	86.3	85-115	0			
LCS Sample ID): WLCSW2-R142275				Unit	ts: mg/	L	Analys	is Date: 2/	6/2013 11	:31 AM
Client ID:	Run	ID: ICS210	CS2100_130206A		SeqNo: 3104640		Prep Date:		DF: 1		
				SPK Ref			Control	RPD Ref		RPD Limit	
Analyte	Result	PQL	SPK Val	Value	%	6REC	Limit	Value	%RPD	Limit	Qual
Chloride	20.78	0.50	20		0	104	90-110	0			
Fluoride	3.608	0.10	4		0	90.2	90-110	0			
Nitrogen, Nitrate (As N)	4.033	0.10	4		0	101	90-110	0			
Nitrogen, Nitrite (As N)	4.332	0.10	4		0	108	90-110	0			
Surr: Selenate (surr)	4.436	0.10	5		0	88.7	85-115	0			
MS Sample ID): 13011010-20BMS				Unit	ts: mg/	L	Analys	is Date: 2/	6/2013 07	:14 PN
Client ID:	Run	ID: ICS210	0_130206A		SeqN	lo: 310 4	4667	Prep Date:		DF: 5	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%	6REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	98.84	2.5	50	50.4	15	96.8	80-120	0			
Fluoride	8.773	0.50	10	0.12	25	86.5	80-120	0			
Nitrogen, Nitrate (As N)	10.03	0.50	10		0	100	80-120	0			Н
Nitrogen, Nitrite (As N)	10.57	0.50	10		0	106	80-120	0			Н
Surr: Selenate (surr)	21.26	0.50	25		0	85.1	85-115	0			
MSD Sample ID): 13011010-20BMSD				Unit	ts: mg/	L	Analys	is Date: 2/	6/2013 07	:29 PN
Client ID:	Run	ID: ICS210	0_130206A		SeqN	lo: 310 4	4669	Prep Date:		DF: 5	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%	6REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	103.2	2.5	50	50.4	15	106	80-120	98.84	4.36	20	
	9.222	0.50	10	0.12		91	80-120	8.773		20	
Fluoride	10.45	0.50	10		0	105	80-120	10.03		20	Н
					0	109	80-120	10.57		20	Н
Nitrogen, Nitrate (As N)	10.86	0.50	10		U	100					
Fluoride Nitrogen, Nitrate (As N) Nitrogen, Nitrite (As N) Surr: Selenate (surr)		0.50	25		0	88.6	85-115	21.26	4.11	20	

Client: Navajo Refining Company

Work Order: 1302138

Project: RO Discharge Sampling

Batch ID: R	142370 Instrument II	D Balance1		Metho	d: M2540	С	(Dissolv	e)			
MBLK	Sample ID: WBLK-020713	3-R142370				Units: n	ng/L	Analys	sis Date: 2/	7/2013 10	:10 AM
Client ID:		Run II	: BALAN	CE1_13020	7D	SeqNo: 3	106836	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%RE	Control C Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissol	ved Solids (Residue, Fil	U	10								
LCS	Sample ID: WLCS-020713	3-R142370				Units: n	ng/L	Analys	sis Date: 2/	7/2013 10	:10 AN
Client ID:		Run II	: BALAN	CE1_13020	7D	SeqNo: 3	106837	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%RE	Control C Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissol	ved Solids (Residue, Fil	1010	10	1000		0 10	1 85-115	, o	1		
DUP	Sample ID: 1302016-01H	OUP				Units: n	ng/L	Analys	sis Date: 2/	7/2013 10	:10 AN
Client ID:		Run II): BALAN	CE1_13020	7D	SeqNo: 3	106830	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%RE	Control C Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Total Dissol	ved Solids (Residue, Fil	562	10	0		0	0 0-0	564	0.355	20	
DUP	Sample ID: 1302138-04G	DUP				Units: n	ng/L	Analys	sis Date: 2/	7/2013 10	:10 AN
Client ID: M	W-115	Run II	D: BALAN	CE1_13020	7D	SeqNo: 3	109474	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%RE	Control C Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Total Dissol	ved Solids (Residue, Fil	4812	10	0		0	0 0-0	4956	2.95	20	
The following	ng samples were analyzed	in this batch:		302138-01G 302138-04G		302138-02	G 13	802138-03G			

Navajo Refining Company

Work Order: 1

1302138

Project:

Client:

RO Discharge Sampling

Batch ID: R	R142525	Instrument ID UV-2450		Method	: M4500	CN E	&G	(Dissolve)			
MBLK	Sample ID:	WBLKW1-021113-R142525				Un	its: mg/	L	Analy	/sis Date: 2/	11/2013	10:05 AM
Client ID:		Run II): UV-245	0_130211A		Seql	No: 310 8	3735	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide		U	0.020									
LCS	Sample ID:	WLCSW1-021113-R142525				Un	its: mg/	L	Analy	/sis Date: 2/	11/2013	10:05 AM
Client ID:		Run II): UV-245	0_130211A		Seql	No: 310 8	3736	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	,	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide		0.17	0.020	0.2		0	85	80-120		0		
LCSD	Sample ID:	WLCSDW1-021113-R142525				Un	its: mg/	L	Analy	/sis Date: 2/	11/2013	10:05 AM
Client ID:		Run II): UV-245	60_130211A		Seq	No: 310 8	B744	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	,	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide		0.174	0.020	0.2		0	87	80-120	0.1	7 2.33	20	
MS	Sample ID:	1302181-01EMS				Un	its: mg/	L	Analy	/sis Date: 2/	11/2013	10:05 AM
		Run II): UV-245	60_130211A		Seq	No: 310 8	B747	Prep Date:		DF: 1	
		T COLL II							RPD Ref		RPD	
Client ID:		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	Value	%RPD	Limit	Qual
Client ID: Analyte Cyanide			PQL 0.020	SPK Val		0	%REC 87.5		Value	%RPD		Qual

QC BATCH REPORT

Client: Navajo Refining Company

Work Order: 1302138

Project: RO Discharge Sampling

Batch ID: R	142615	Instrument ID ICS2100		Method	d: E300		((Dissolve	e)			
MBLK	Sample ID:	WBLKW1-R142615				l	Jnits: mg/ l	L	Analys	is Date: 2/	12/2013 1	0:37 AN
Client ID:		Run II	D: ICS21	00_130212A		Se	qNo: 311 (0343	Prep Date:		DF: 1	
Analyte		Result	PQL	. SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride		0.238	0.50	1								J
Sulfate		U	0.50									
Surr: Sel	enate (surr)	4.937	0.10	5		0	98.7	85-115	0			
LCS	Sample ID:	WLCSW1-R142615				ι	Jnits: mg/	L	Analys	is Date: 2/	12/2013 1	0:52 Al
Client ID:		Run II	D: ICS21	00_130212A		Se	qNo: 311 0	0344	Prep Date:		DF: 1	
Analyte		Result	PQL	. SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride		21.96	0.50	20		0	110	90-110	0			
Sulfate		21.6	0.50	20		0	108	90-110	0			
Surr: Sele	enate (surr)	5.024	0.10	5		0	100	85-115	0			
MS	Sample ID:	1302189-01GMS				Units: mg/L			Analys	is Date: 2/	12/2013 1	2:58 PI
Client ID:		Run II	D: ICS21	00_130212A		Se	qNo: 311 0	0358	Prep Date:		DF: 1	
Analyte		Result	PQL	. SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride		410.7	0.50	10	415	.2	-45.1	80-120	0			SEO
Sulfate		2156	0.50	10	22	17	-610	80-120	0			SEO
Surr: Sel	enate (surr)	4.387	0.10	5		0	87.7	85-115	0			
MSD	Sample ID:	1302189-01GMSD				ι	Jnits: mg/	L	Analys	is Date: 2/	12/2013 0	1:12 PI
Client ID:		Run II	D: ICS21	00_130212A		Se	qNo: 311 (0360	Prep Date:		DF: 1	
Analyte		Result	PQL	. SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride		406.9	0.50	10	415	.2	-83.2	80-120	410.7	0.932	20	SEO
Sulfate		2130	0.50	10	22	17	-869	80-120	2156	1.21	20	SEO
Surr: Sele	enate (surr)	4.498	0.10	5		0	90	85-115	4.387	2.5	20	
The followi	ng samples v	vere analyzed in this batch:		1302138-01H 1302138-04G	13	8021	38-02H	13	02138-03G			

Date: 18-Feb-13 **ALS Environmental**

Client: Navajo Refining Company **QUALIFIERS,** RO Discharge Sampling **Project: ACRONYMS, UNITS**

WorkOrder: 1302138

Qualifier	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
В	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
Н	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
	Donoring
<u>Acronym</u>	<u>Description</u>
Acronym DCS	Detectability Check Study
	
DCS	Detectability Check Study
DCS DUP	Detectability Check Study Method Duplicate
DCS DUP LCS	Detectability Check Study Method Duplicate Laboratory Control Sample
DCS DUP LCS LCSD	Detectability Check Study Method Duplicate Laboratory Control Sample Laboratory Control Sample Duplicate
DCS DUP LCS LCSD MBLK	Detectability Check Study Method Duplicate Laboratory Control Sample Laboratory Control Sample Duplicate Method Blank
DCS DUP LCS LCSD MBLK MDL	Detectability Check Study Method Duplicate Laboratory Control Sample Laboratory Control Sample Duplicate Method Blank Method Detection Limit
DCS DUP LCS LCSD MBLK MDL MQL	Detectability Check Study Method Duplicate Laboratory Control Sample Laboratory Control Sample Duplicate Method Blank Method Detection Limit Method Quantitation Limit
DCS DUP LCS LCSD MBLK MDL MQL MS	Detectability Check Study Method Duplicate Laboratory Control Sample Laboratory Control Sample Duplicate Method Blank Method Detection Limit Method Quantitation Limit Matrix Spike
DCS DUP LCS LCSD MBLK MDL MQL MS	Detectability Check Study Method Duplicate Laboratory Control Sample Laboratory Control Sample Duplicate Method Blank Method Detection Limit Method Quantitation Limit Matrix Spike Matrix Spike Duplicate
DCS DUP LCS LCSD MBLK MDL MQL MS MSD PDS	Detectability Check Study Method Duplicate Laboratory Control Sample Laboratory Control Sample Duplicate Method Blank Method Detection Limit Method Quantitation Limit Matrix Spike Matrix Spike Duplicate Post Digestion Spike
DCS DUP LCS LCSD MBLK MDL MQL MS MSD PDS PQL	Detectability Check Study Method Duplicate Laboratory Control Sample Laboratory Control Sample Duplicate Method Blank Method Detection Limit Method Quantitation Limit Matrix Spike Matrix Spike Duplicate Post Digestion Spike Practical Quantitation Limit
DCS DUP LCS LCSD MBLK MDL MQL MS MSD PDS PQL SD	Detectability Check Study Method Duplicate Laboratory Control Sample Laboratory Control Sample Duplicate Method Blank Method Detection Limit Method Quantitation Limit Matrix Spike Matrix Spike Duplicate Post Digestion Spike Practical Quantitation Limit Serial Dilution

Units Reported Description

mg/L Milligrams per Liter

Sample Receipt Checklist

Client Name:	NAVAJO REFINING			Date/Time R	Received:	05-Feb-13	<u> 09:15</u>	
Work Order:	1302138			Received by	:	<u>PMG</u>		
Checklist comp	pleted by Faresh M. Giga eSignature		eb-13 ate	Reviewed by:	eSignature			Date
Matrices: Carrier name:	<u>Water</u> <u>FedEx</u>	,					·	
Shipping conta	iner/cooler in good condition?		Yes 🗸	No 🗌	Not Prese	ent 🗌		
Custody seals	intact on shipping container/coole	r?	Yes 🗸	No 🗌	Not Prese	ent 🗌		
Custody seals	intact on sample bottles?		Yes \square	No 🗌	Not Prese	ent 🗹		
Chain of custoo	dy present?		Yes 🗹	No 🗌				
Chain of custoo	dy signed when relinquished and	received?	Yes 🗸	No 🗆				
Chain of custoo	dy agrees with sample labels?		Yes 🗸	No 🗌				
Samples in pro	per container/bottle?		Yes 🗸	No 🗆				
Sample contain	ners intact?		Yes 🗸	No 🗆				
Sufficient samp	ole volume for indicated test?		Yes 🗸	No 🗌				
All samples rec	ceived within holding time?		Yes 🗸	No 🗆				
Container/Tem	p Blank temperature in compliand	ce?	Yes 🗸	No 🗌				
Temperature(s)/Thermometer(s):	1	.2c, 1.4c (<u>C/U</u>	005	<u>5</u>		
Cooler(s)/Kit(s)):	<u>3</u>	323, 7119	1				
Date/Time sam	nple(s) sent to storage:	2	/5/13 18:5					
Water - VOA vi	als have zero headspace?		Yes \square		No VOA vials	submitted		
Water - pH acc	eptable upon receipt?		Yes 🔽		N/A 📙			
pH adjusted? pH adjusted by	:	_	Yes 🗌	No 🗆	N/A 🔽			
Login Notes:	1302138-02;-03 & -04 Radiu	ım fraction re-logged in	nWO 1302	2192-05;-06 & -07	respectively			
								_ — — — –
Client Contacte	ed:	Date Contacted:		Person (Contacted:			
Contacted By:		Regarding:						
Comments:								
CorrectiveAction	on:							
CONTECUVEACU	ль.						SRC P	age 1 of 1



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

Page _

eston, WV 3168

NAVAJO REFINING: Navajo Refining Company

5280

coc id: 72329 Project: RO Discharge Sampling

Enviro	Environmental			ALS Project Manager:										i Valorii Armanan Armanan karasa				
	Customer Information			Projec	ct Informati	ion		Ī]]								
Purchase Order		Projec	t Name	RO	Discharge/Sa	mpling		A	VO	(8260) MW	GIN Lis	t		-			
Work Order	A THE STATE OF THE	Project I	Number	128	823		rice 14 and Published States and	В	GR	O (801	5M)							
Company Name	Navajo Refining Company	Bill To Co	ompany	Nav	ajo Refining C	отрапу		С	DRO (8015M)									
Send Report To	Robert Combs	Invoi	ice Attn	Rob	ert Combs			D	ORO (8015M)									
Address	501 East Main	A	\ddress	501	East Main	- CONTRACT AMERICAN	and the state of t	E				NM GV						
						·		F	Total Media (0501000) Holder Long List									
City/State/Zip	Artesia, NM 88211	City/St	ate/Zip	Arte	sia, NM 882	11		G	Diss	oived I	Metals	(6020/7	7000) RI	CRA 8	U			
Phone	(575) 748-6733		Phone	ne (575) 748-6733				H	TDS	3								
Fax	(575) 746-5421		Fax	(575	5) 746-5421			1	Mei	sture	· C.	<u> </u>	ide		_	• •		
e-Mail Address		e-Mail A	ddress			1,500		J	Fing	erprint			rav, S in	r Dist)	Rac	TONE	. An.	gove"
No.	Sample Description	Date	313 (23) 313 m 13 M / P	ime	Matrix	Pres.	# Bottles	Α	В	С	D	E	F	G	Н	1	็ป	Hold
₽ Ro	Discharge	2.3-13	OP	<i>5</i> 0	Water	Prix	9-19-3	<u> </u>		ļ			X	X	×	X	X	
A M	W-117	2.3.13	, 16	000	water	Mix	Bi	ļ					X	X	×	火	X	
3			***************************************	**************************************	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,			<u> </u>								ļ		
4																		
5																Ĺ		
6			The state of the s													<u> </u>		
7																		
8																		
9	kka maroma a pri 1900 kalabah maro mayayay (1904 kalabah maroma mana) 1900 kalabah mamara mana a 1916 kalabah maroma a marah													ramona and				
10	_																	
Sampler(s) Please F	and the state of the control of the state of	Shipr	ment Met	nod	1494903	iired Turnaro ☑ Std 10 W			Box) K Days	-	her MK Dar	/s [24 Hou		esults I)ue Da	te:	
Relinquished by:	My Date: 14/13	Time: 1345	Recei	red by:	J.	<u> </u>		Notes			and the first test of the		ed Meta	Access to the second	Filtere	/d	Berlinstein ersteht er	ong prof. Prinse verber muser
Relinquished	Date:	Time:	Recei		boratory): 2・S-ヽろ	6 915	5,	Coi	oler ID	Cool	er Temj	o. QC	Package		·	ox Belo		RP CheckList
Logged by (Laboratory): Date:	Time:	Chec	f.E	boratory):			33	23				Leve	il III Std	QC/Rav /846/CLI			RP Level IV
Preservative Kev:	1-HCl 2-HNO ₂ 3-H ₂ SO ₂ 4-N ₂	aOH 5-Na ₂ S	.O. 6	-NaHSO	. 7-Other	8-4°C	9-5035	160338	Na Sirika	S 531500st		(iii)	Olhe	r/EOD)			

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.



Preservative Key: 1-HCI

Cincinnati, OH +1 513 733 5336

Everett, WA +1 425 356 2600 Fort Collins, CO +1 970 490 1511

+1 616 399 6070

Holland, MI

Chain of Custody Form

Houston, TX +1 281 530 5656 Spring City, PA +1 610 948 4903 South Charleston, WV +1 304 356 3168

Middletown, PA Salt Lake City, UT +1 717 944 5541 +1 801 266 7700

York, PA +1 717 505 5280

Page 1 of 1 COC ID: 72328

Environmental **ALS Project Manager:** ALS Work Order #: **Customer Information Project Information** Parameter/Method Request for Analysis Purchase Order Project Name RO Discharge/Sampling VOC (8260) NW GW List Work Order 128823 В GRO (8015M) Project Number Company Name Navajo Refining Company C Navajo Refining Company Bill To Company DRO (8015M) Send Report To Robert Combs Invoice Attn Robert Combs D ORO (8015M) 501 East Main 501 East Main Ε LL SVOC (8270) NM GW List Address Address F Total Metals (6020/7000) RCRAB Long List G City/State/Zip Artesia, NM 88211 City/State/Zip Artesia, NM 88211 Dissolved Metals (6020/7000) RCRA 8 Н Phone (515) 748-6733 Phone (575) 748-6733 TDS Fax (575) 746-5421 Fax (575) 746-5421 Radium, Anions, Cetions e-Mail Address e-Mail Address Eincerer No. Hold Sample Description Date Matrix Pres. # Bottles Α В C E G н Extra برجلوب Hix √\ Buttles \$ X ١ı X X 16 3 4 5 6 7 8 9 10 Sampler(s) Please Print & Sign Results Due Date: Required Turnaround Time: (Check Box) Shipment Method Other 2 MK Days 1 24 Hour Std 10 WK Days 5 WK Days Helinquished by: Date; 10 Day TAT. Dissolved Metals Field Filtered Received by: Time: Notes: Relinquished by: Received by (Laboratory): Date: QC Package: (Check One Box Below) Time: Cooler ID Cooler Temp. OPIS. TRRP CheckLis Level il Sid QC Logged by (Laboratory): Date: Time: Checked by (Laboratory): $PLU\Gamma$ Level III Std QC/Raw Data TRRP Level IV Level IV SVV846/CLP

Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

4-NaOH

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.

6-NaHSO

7-Other

8-4°C

9-5035

5-Na₂S₂O₃

3. The Chain of Custody is a legal document. All information must be completed accurately.

3-H,SO4

2-HNO.

Copyright 2011 by ALS Environmental.

Other / EDD



10450 Stancliff Rd., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5887

CUSTODY SEAL

OOPN Aame: Enc Recoerce
Company: ARADIS Company:

Seal Broken By:

			ng y agold their , yangar memor a yan asang mengelik ya ting adang ayan yanni ya
Packa Express US A	ge Irbill Tracking B	013 77	14 1240
From 24/19			
Sender's Name	e contraction	Phone 7 📯	
Company ARCA ()			
Address 2979	Brown	Soile	300
city the sets	State	X ZIP	Dept/Floor/SuiterF

D₹



10450 Stancliff Rd., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5887

· 16

# 1 <u>-</u>	/					
Jate: "7	CUS	TODY SEA		- B		. 1
Name:	4/10		<u> </u>		e. A	
Compan	Eco	C-1ime:	00		Seal Broken By	- 1
/:	ARCAC	\$ 8.250			<u>~~</u>	1
n- n (2)	20 (20) (10) (20)	-30			2-5-18-3.	\neg
1	And the second and					- 1

;	Package Express US Airbill Feder BO13	8012 5560
	From	
1	Date	
	Sender's Name Exic Services Phone	281 787 1234
	Company ARCADIS	
	Address 2929 Brice Dark S.	Sept/Roor/Sunte/Room
	City State	ZIP
2	2 Your Internal Billing Reference	



19-Feb-2013

Robert Combs Navajo Refining Company PO Box 159 Artesia, NM 88211

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

Re: RO Discharge Sampling Work Order: 1302189

Dear Robert,

ALS Environmental received 5 samples on 06-Feb-2013 08:40 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 49.

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

Sincerely,

Electronically approved by: Jumoke M. Lawal

Sonie West

Sonia West Project Manager



Certificate No: T104704231-12-10

ALS Environmental

Date: 19-Feb-13

Client: Navajo Refining Company
Project: RO Discharge Sampling

Work Order: 1302189

Work Order Sample Summary

Lab Samp ID	Client Sample ID	<u>Matrix</u>	Tag Number	Collection Date	Date Received	Hold
1302189-01	MW-116	Water		2/3/2013 13:15	2/6/2013 08:40	
1302189-02	MW-119	Water		2/5/2013 14:25	2/6/2013 08:40	
1302189-03	MW-118	Water		2/5/2013 14:25	2/6/2013 08:40	
1302189-04	TRIP BLANK 011813-71			2/5/2013	2/6/2013 08:40	
1302189-05	TRIP BLANK 011813-30			2/5/2013	2/6/2013 08:40	

ALS Environmental

Date: 19-Feb-13

Client: Navajo Refining Company
Project: RO Discharge Sampling

Work Order: 1302189

Case Narrative

Nitrogen, Nitrate (As N) Method Anions, Sample MW-116 holding time expired prior to sample receipt. Sample analyzed at the request of the client. Results should be considered estimated.

Batch 67624, Dissolved Mercury, Sample 1302162-02: MS/MSD is for an unrelated sample.

Batch 67639, Metals, Sample 1302162-02: MS/MSD is for an unrelated sample.

Batch 67639, Metals, Sample 1302162-02: MS/MSD RPD is for an unrelated sample.

Batch 67639, Metals, Sample 1302162-02: Duplicate RPD is for an unrelated sample.

Batch R142338, Volatile Organics, Sample 1302212-01: MS/MSD is for an unrelated sample.

Batch R142615, Anions, Sample MW-116: MS/MSD recoveries were outside the control limits for Fluoride. The associated LCS recoveries and MS/MSD RPD were within the control limits.

Batch R142773, Anions, Sample 1302276-01: MS/MSD recoveries were outside the control limits for Chloride and Sulfate due to high concentration to the background sample. Results are flagged with an O. The associated LCS recoveries and MS/MSD RPD were within the control limits.

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-116

Collection Date: 2/3/2013 01:15 PM

Date: 19-Feb-13

Work Order: 1302189

Lab ID: 1302189-01

Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Ме	thod: SW8015N	1	Prep: SW3	3511 / 2/8/13	Analyst: KMB
TPH (Diesel Range)	U		0.021	0.051	mg/L	1	2/11/2013 18:52
TPH (Oil Range)	U		0.041	0.10	mg/L	1	2/11/2013 18:52
Surr: 2-Fluorobiphenyl	106			60-135	%REC	1	2/11/2013 18:52
GASOLINE RANGE ORGANICS - SW8	015C	Me	thod: SW8015				Analyst: KKP
Gasoline Range Organics	U		0.020	0.0500	mg/L	1	2/14/2013 00:02
Surr: 4-Bromofluorobenzene	91.7			70-130	%REC	1	2/14/2013 00:02
DISSOLVED MERCURY		Me	thod: SW7470		Prep: SW7	7470 / 2/7/13	Analyst: OFO
Mercury	0.000131	J	0.000042	0.000200	mg/L	1	2/7/2013 18:01
DISSOLVED METALS		Me	thod: SW6020		Prep: SW3	3010A / 2/8/13	Analyst: SKS
Aluminum	0.00797	J	0.0040	0.0100	mg/L	1	2/11/2013 18:29
Arsenic	0.00274	J	0.0013	0.00500	mg/L	1	2/11/2013 18:29
Barium	0.0161		0.00090	0.00500	mg/L	1	2/11/2013 18:29
Boron	0.220		0.040	0.100	mg/L	2	2/12/2013 14:56
Cadmium	U		0.00080	0.00200	mg/L	1	2/11/2013 18:29
Calcium	624		1.7	10.0	mg/L	20	2/12/2013 15:03
Chromium	U		0.0012	0.00500	mg/L	1	2/11/2013 18:29
Cobalt	U		0.00080	0.00500	mg/L	1	2/11/2013 18:29
Copper	U		0.0015	0.00500	mg/L	1	2/11/2013 18:29
Iron	U		0.078	0.200	mg/L	1	2/11/2013 18:29
Lead	U		0.00070	0.00500	mg/L	1	2/11/2013 18:29
Manganese	0.0437		0.0025	0.00500	mg/L	1	2/11/2013 18:29
Molybdenum	0.00348	J	0.0015	0.00500	mg/L	1	2/11/2013 18:29
Nickel	0.00120	J	0.0012	0.00500	mg/L	1	2/11/2013 18:29
Potassium	1.06		0.084	0.200	mg/L	1	2/11/2013 18:29
Selenium	0.00203	J	0.0010	0.00500	mg/L	1	2/11/2013 18:29
Silver	U		0.00080	0.00500	mg/L	1	2/11/2013 18:29
Sodium	206		1.7	4.00	mg/L	20	2/12/2013 15:03
Uranium	0.0331		0.0050	0.00500	mg/L	1	2/11/2013 18:29
Zinc	0.00291	J	0.0025	0.00500	mg/L	1	2/11/2013 18:29
LOW-LEVEL SEMIVOLATILES		Me	thod: SW8270		Prep: SW3	3510 / 2/7/13	Analyst: LG
1-Methylnaphthalene	U		0.000050	0.00020	mg/L	1	2/8/2013 19:08
2-Methylnaphthalene	U		0.000050	0.00020	mg/L	1	2/8/2013 19:08
Benzo(a)pyrene	U		0.000050	0.00020	mg/L	1	2/8/2013 19:08
Naphthalene	U		0.000050	0.00020	mg/L	1	2/8/2013 19:08
Surr: 2,4,6-Tribromophenol	45.3			34-129	%REC	1	2/8/2013 19:08
Surr: 2-Fluorobiphenyl	53.4			40-125	%REC	1	2/8/2013 19:08

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-116

Collection Date: 2/3/2013 01:15 PM

Work Order: 1302189

Lab ID: 1302189-01

Date: 19-Feb-13

Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 2-Fluorophenol	45.7			20-120	%REC	1	2/8/2013 19:08
Surr: 4-Terphenyl-d14	67.6			40-135	%REC	1	2/8/2013 19:08
Surr: Nitrobenzene-d5	58.7			41-120	%REC	1	2/8/2013 19:08
Surr: Phenol-d6	46.3			20-120	%REC	1	2/8/2013 19:08
LOW LEVEL VOLATILES - SW8260C		Met	hod: SW8260				Analyst: AKP
1,1,1-Trichloroethane	U		0.00030	0.0010	mg/L	1	2/9/2013 06:02
1,1,2,2-Tetrachloroethane	U		0.00050	0.0010	mg/L	1	2/9/2013 06:02
1,1,2-Trichloroethane	U		0.00030	0.0010	mg/L	1	2/9/2013 06:02
1,1-Dichloroethane	U		0.00030	0.0010	mg/L	1	2/9/2013 06:02
1,1-Dichloroethene	U		0.00050	0.0010	mg/L	1	2/9/2013 06:02
1,2-Dibromoethane	U		0.00030	0.0010	mg/L	1	2/9/2013 06:02
1,2-Dichloroethane	U		0.00030	0.0010	mg/L	1	2/9/2013 06:02
Benzene	U		0.00020	0.0010	mg/L	1	2/9/2013 06:02
Carbon tetrachloride	U		0.00030	0.0010	mg/L	1	2/9/2013 06:02
Chloroform	U		0.00030	0.0010	mg/L	1	2/9/2013 06:02
Ethylbenzene	U		0.00030	0.0010	mg/L	1	2/9/2013 06:02
Methylene chloride	U		0.00040	0.0020	mg/L	1	2/9/2013 06:02
Tetrachloroethene	U		0.00040	0.0010	mg/L	1	2/9/2013 06:02
Toluene	U		0.00030	0.0010	mg/L	1	2/9/2013 06:02
Trichloroethene	U		0.00020	0.0010	mg/L	1	2/9/2013 06:02
Vinyl chloride	U		0.00040	0.0010	mg/L	1	2/9/2013 06:02
Xylenes, Total	U		0.00030	0.0010	mg/L	1	2/9/2013 06:02
Surr: 1,2-Dichloroethane-d4	101			71-125	%REC	1	2/9/2013 06:02
Surr: 4-Bromofluorobenzene	103			70-125	%REC	1	2/9/2013 06:02
Surr: Dibromofluoromethane	100			74-125	%REC	1	2/9/2013 06:02
Surr: Toluene-d8	106			78-123	%REC	1	2/9/2013 06:02
ANIONS - EPA 300.0 (1993)		Met	hod: E300				Analyst: JKP
Chloride	389		10	25.0	mg/L	50	2/14/2013 08:13
Fluoride	1.31		0.050	0.100	mg/L	1	2/12/2013 12:43
Nitrogen, Nitrate (As N)	1.37	Н	0.030	0.100	mg/L	1	2/12/2013 12:43
Nitrogen, Nitrite (As N)	U	Н	0.030	0.100	mg/L	1	2/12/2013 12:43
Sulfate	2,250		10	25.0	mg/L	50	2/14/2013 08:13
Surr: Selenate (surr)	92.9			85-115	%REC	1	2/12/2013 12:43
Surr: Selenate (surr)	109			85-115	%REC	50	2/14/2013 08:13
CYANIDE - SM4500CN E		Met	hod: M4500CN	I E&G			Analyst: EDG
Cyanide	U		0.0040	0.0200	mg/L	1	2/12/2013 11:45
TOTAL DISSOLVED SOLIDS		Met	hod: M2540C				Analyst: KAH

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-116

Collection Date: 2/3/2013 01:15 PM

Date: 19-Feb-13

Work Order: 1302189

Lab ID: 1302189-01

Matrix: WATER

Analyses	Result Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Total Dissolved Solids (Residue, Filterable)	3,650	5.0	10.0	mg/L	1	2/8/2013 16:15

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-119

Collection Date: 2/5/2013 02:25 PM

Date: 19-Feb-13

Work Order: 1302189

Lab ID: 1302189-02

Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Me	thod: SW8015 N	1	Prep: SW3	3511 / 2/8/13	Analyst: KMB
TPH (Diesel Range)	U		0.021	0.051	mg/L	1	2/11/2013 19:14
TPH (Oil Range)	U		0.041	0.10	mg/L	1	2/11/2013 19:14
Surr: 2-Fluorobiphenyl	110			60-135	%REC	1	2/11/2013 19:14
GASOLINE RANGE ORGANICS - SW8	015C	Me	thod: SW8015				Analyst: KKP
Gasoline Range Organics	0.0371	J	0.020	0.0500	mg/L	1	2/14/2013 00:20
Surr: 4-Bromofluorobenzene	90.6			70-130	%REC	1	2/14/2013 00:20
DISSOLVED MERCURY		Me	thod: SW7470		Prep: SW	7470 / 2/7/13	Analyst: OFO
Mercury	U		0.000042	0.000200	mg/L	1	2/7/2013 18:03
DISSOLVED METALS		Me	thod: SW6020		Prep: SW3	3010A / 2/8/13	Analyst: SKS
Aluminum	0.00994	J	0.0040	0.0100	mg/L	1	2/12/2013 14:59
Arsenic	0.00294	J	0.0013	0.00500	mg/L	1	2/12/2013 14:59
Barium	0.00981		0.00090	0.00500	mg/L	1	2/12/2013 14:59
Boron	0.0987		0.020	0.0500	mg/L	1	2/12/2013 14:59
Cadmium	U		0.00080	0.00200	mg/L	1	2/12/2013 14:59
Calcium	494		1.7	10.0	mg/L	20	2/12/2013 15:06
Chromium	U		0.0012	0.00500	mg/L	1	2/12/2013 14:59
Cobalt	0.000871	J	0.00080	0.00500	mg/L	1	2/12/2013 14:59
Copper	0.00309	J	0.0015	0.00500	mg/L	1	2/12/2013 14:59
Iron	U		0.078	0.200	mg/L	1	2/12/2013 14:59
Lead	U		0.00070	0.00500	mg/L	1	2/12/2013 14:59
Manganese	0.0424		0.0025	0.00500	mg/L	1	2/12/2013 14:59
Molybdenum	0.00830		0.0015	0.00500	mg/L	1	2/12/2013 14:59
Nickel	0.00174	J	0.0012	0.00500	mg/L	1	2/12/2013 14:59
Potassium	0.870		0.084	0.200	mg/L	1	2/12/2013 14:59
Selenium	0.00246	J	0.0010	0.00500	mg/L	1	2/12/2013 14:59
Silver	U		0.00080	0.00500	mg/L	1	2/12/2013 14:59
Sodium	127		1.7	4.00	mg/L	20	2/12/2013 15:06
Uranium	0.0244		0.0050	0.00500	mg/L	1	2/12/2013 14:59
Zinc	U		0.0025	0.00500	mg/L	1	2/12/2013 14:59
LOW-LEVEL SEMIVOLATILES		Me	thod: SW8270		Prep: SW3	3510 / 2/7/13	Analyst: LG
1-Methylnaphthalene	U		0.000050	0.00020	mg/L	1	2/8/2013 19:27
2-Methylnaphthalene	U		0.000050	0.00020	mg/L	1	2/8/2013 19:27
Benzo(a)pyrene	U		0.000050	0.00020	mg/L	1	2/8/2013 19:27
Naphthalene	U		0.000050	0.00020	mg/L	1	2/8/2013 19:27
Surr: 2,4,6-Tribromophenol	59.1			34-129	%REC	1	2/8/2013 19:27
Surr: 2-Fluorobiphenyl	64.5			40-125	%REC	1	2/8/2013 19:27

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-119

Collection Date: 2/5/2013 02:25 PM

Work Order: 1302189

Lab ID: 1302189-02

Date: 19-Feb-13

Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 2-Fluorophenol	60.0			20-120	%REC	1	2/8/2013 19:27
Surr: 4-Terphenyl-d14	82.3			40-135	%REC	1	2/8/2013 19:27
Surr: Nitrobenzene-d5	65.4			41-120	%REC	1	2/8/2013 19:27
Surr: Phenol-d6	57.9			20-120	%REC	1	2/8/2013 19:27
LOW LEVEL VOLATILES - SW8260C		Metl	nod: SW8260				Analyst: AKP
1,1,1-Trichloroethane	U		0.00030	0.0010	mg/L	1	2/7/2013 17:31
1,1,2,2-Tetrachloroethane	U		0.00050	0.0010	mg/L	1	2/7/2013 17:31
1,1,2-Trichloroethane	U		0.00030	0.0010	mg/L	1	2/7/2013 17:31
1,1-Dichloroethane	U		0.00030	0.0010	mg/L	1	2/7/2013 17:31
1,1-Dichloroethene	U		0.00050	0.0010	mg/L	1	2/7/2013 17:31
1,2-Dibromoethane	U		0.00030	0.0010	mg/L	1	2/7/2013 17:31
1,2-Dichloroethane	U		0.00030	0.0010	mg/L	1	2/7/2013 17:31
Benzene	0.0036		0.00020	0.0010	mg/L	1	2/7/2013 17:31
Carbon tetrachloride	U		0.00030	0.0010	mg/L	1	2/7/2013 17:31
Chloroform	U		0.00030	0.0010	mg/L	1	2/7/2013 17:31
Ethylbenzene	0.0021		0.00030	0.0010	mg/L	1	2/7/2013 17:31
Methylene chloride	U		0.00040	0.0020	mg/L	1	2/7/2013 17:31
Tetrachloroethene	U		0.00040	0.0010	mg/L	1	2/7/2013 17:31
Toluene	0.0027		0.00030	0.0010	mg/L	1	2/7/2013 17:31
Trichloroethene	U		0.00020	0.0010	mg/L	1	2/7/2013 17:31
Vinyl chloride	U		0.00040	0.0010	mg/L	1	2/7/2013 17:31
Xylenes, Total	0.0037		0.00030	0.0010	mg/L	1	2/7/2013 17:31
Surr: 1,2-Dichloroethane-d4	86.7			71-125	%REC	1	2/7/2013 17:31
Surr: 4-Bromofluorobenzene	98.0			70-125	%REC	1	2/7/2013 17:31
Surr: Dibromofluoromethane	95.4			74-125	%REC	1	2/7/2013 17:31
Surr: Toluene-d8	100			78-123	%REC	1	2/7/2013 17:31
ANIONS - EPA 300.0 (1993)		Metl	nod: E300				Analyst: JKP
Chloride	116		10	25.0	mg/L	50	2/14/2013 08:34
Fluoride	2.36		0.050	0.100	mg/L	1	2/7/2013 10:34
Nitrogen, Nitrate (As N)	2.35		0.030	0.100	mg/L	1	2/7/2013 10:34
Nitrogen, Nitrite (As N)	U		0.030	0.100	mg/L	1	2/7/2013 10:34
Sulfate	2,090		10	25.0	mg/L	50	2/14/2013 08:34
Surr: Selenate (surr)	88.0			85-115	%REC	1	2/7/2013 10:34
Surr: Selenate (surr)	111			85-115	%REC	50	2/14/2013 08:34
CYANIDE - SM4500CN E		Meth	nod: M4500CN	E&G			Analyst: EDG
Cyanide	U		0.0040	0.0200	mg/L	1	2/12/2013 11:45
TOTAL DISSOLVED SOLIDS		Meth	nod: M2540C				Analyst: KAH

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-119

Collection Date: 2/5/2013 02:25 PM

Date: 19-Feb-13

Work Order: 1302189

Lab ID: 1302189-02

Matrix: WATER

Analyses	Result Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Total Dissolved Solids (Residue, Filterable)	3,670	5.0	10.0	mg/L	1	2/12/2013 10:15

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-118

Collection Date: 2/5/2013 02:25 PM

Work Order: 1302189

Lab ID: 1302189-03

Date: 19-Feb-13

Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Met	hod: SW8015 N	1	Prep: SW3	3511 / 2/8/13	Analyst: KMB
TPH (Diesel Range)	U		0.021	0.052	mg/L	1	2/11/2013 19:36
TPH (Oil Range)	U		0.041	0.10	mg/L	1	2/11/2013 19:36
Surr: 2-Fluorobiphenyl	107			60-135	%REC	1	2/11/2013 19:36
GASOLINE RANGE ORGANICS - SW	8015C	Met	hod: SW8015				Analyst: KKP
Gasoline Range Organics	0.0436	J	0.020	0.0500	mg/L	1	2/14/2013 00:38
Surr: 4-Bromofluorobenzene	88.5			70-130	%REC	1	2/14/2013 00:38
DISSOLVED MERCURY		Method: SW7470		Prep: SW7470 / 2/7/13		Analyst: OFO	
Mercury	0.0000420	J	0.000042	0.000200	mg/L	1	2/7/2013 18:05
DISSOLVED METALS		Met	hod: SW6020		Prep: SW3	3010A / 2/8/13	Analyst: SKS
Aluminum	0.0146		0.0040	0.0100	mg/L	1	2/12/2013 15:01
Arsenic	0.0110		0.0013	0.00500	mg/L	1	2/12/2013 15:01
Barium	0.0145		0.00090	0.00500	mg/L	1	2/12/2013 15:01
Boron	0.226		0.020	0.0500	mg/L	1	2/12/2013 15:01
Cadmium	U		0.00080	0.00200	mg/L	1	2/12/2013 15:01
Calcium	563		1.7	10.0	mg/L	20	2/12/2013 15:08
Chromium	U		0.0012	0.00500	mg/L	1	2/12/2013 15:01
Cobalt	U		0.00080	0.00500	mg/L	1	2/12/2013 15:01
Copper	0.00156	J	0.0015	0.00500	mg/L	1	2/12/2013 15:01
Iron	U		0.078	0.200	mg/L	1	2/12/2013 15:01
Lead	U		0.00070	0.00500	mg/L	1	2/12/2013 15:01
Manganese	0.0232		0.0025	0.00500	mg/L	1	2/12/2013 15:01
Molybdenum	0.0195		0.0015	0.00500	mg/L	1	2/12/2013 15:01
Nickel	0.00173	J	0.0012	0.00500	mg/L	1	2/12/2013 15:01
Potassium	7.95		0.084	0.200	mg/L	1	2/12/2013 15:01
Selenium	0.00861		0.0010	0.00500	mg/L	1	2/12/2013 15:01
Silver	U		0.00080	0.00500	mg/L	1	2/12/2013 15:01
Sodium	218		1.7	4.00	mg/L	20	2/12/2013 15:08
Uranium	0.0370		0.0050	0.00500	mg/L	1	2/12/2013 15:01
Zinc	U		0.0025	0.00500	mg/L	1	2/12/2013 15:01
LOW-LEVEL SEMIVOLATILES		Met	hod: SW8270		Prep: SW3	3510 / 2/7/13	Analyst: LG
1-Methylnaphthalene	U		0.000050	0.00020	mg/L	1	2/8/2013 19:47
2-Methylnaphthalene	U		0.000050	0.00020	mg/L	1	2/8/2013 19:47
Benzo(a)pyrene	U		0.000050	0.00020	mg/L	1	2/8/2013 19:47
Naphthalene	U		0.000050	0.00020	mg/L	1	2/8/2013 19:47
Surr: 2,4,6-Tribromophenol	59.0			34-129	%REC	1	2/8/2013 19:47
Surr: 2-Fluorobiphenyl	62.2			40-125	%REC	1	2/8/2013 19:47

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-118

Collection Date: 2/5/2013 02:25 PM

Date: 19-Feb-13

Work Order: 1302189

Lab ID: 1302189-03

Matrix: WATER

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 2-Fluorophenol	65.4			20-120	%REC	1	2/8/2013 19:47
Surr: 4-Terphenyl-d14	96.9			40-135	%REC	1	2/8/2013 19:47
Surr: Nitrobenzene-d5	71.7			41-120	%REC	1	2/8/2013 19:47
Surr: Phenol-d6	62.3			20-120	%REC	1	2/8/2013 19:47
LOW LEVEL VOLATILES - SW8260C		Met	hod: SW8260				Analyst: AKP
1,1,1-Trichloroethane	U		0.00030	0.0010	mg/L	1	2/7/2013 17:55
1,1,2,2-Tetrachloroethane	U		0.00050	0.0010	mg/L	1	2/7/2013 17:55
1,1,2-Trichloroethane	U		0.00030	0.0010	mg/L	1	2/7/2013 17:55
1,1-Dichloroethane	U		0.00030	0.0010	mg/L	1	2/7/2013 17:55
1,1-Dichloroethene	U		0.00050	0.0010	mg/L	1	2/7/2013 17:55
1,2-Dibromoethane	U		0.00030	0.0010	mg/L	1	2/7/2013 17:55
1,2-Dichloroethane	U		0.00030	0.0010	mg/L	1	2/7/2013 17:55
Benzene	0.0042		0.00020	0.0010	mg/L	1	2/7/2013 17:55
Carbon tetrachloride	U		0.00030	0.0010	mg/L	1	2/7/2013 17:55
Chloroform	U		0.00030	0.0010	mg/L	1	2/7/2013 17:55
Ethylbenzene	0.0024		0.00030	0.0010	mg/L	1	2/7/2013 17:55
Methylene chloride	U		0.00040	0.0020	mg/L	1	2/7/2013 17:55
Tetrachloroethene	U		0.00040	0.0010	mg/L	1	2/7/2013 17:55
Toluene	0.0033		0.00030	0.0010	mg/L	1	2/7/2013 17:55
Trichloroethene	U		0.00020	0.0010	mg/L	1	2/7/2013 17:55
Vinyl chloride	U		0.00040	0.0010	mg/L	1	2/7/2013 17:55
Xylenes, Total	0.0047		0.00030	0.0010	mg/L	1	2/7/2013 17:55
Surr: 1,2-Dichloroethane-d4	86.6			71-125	%REC	1	2/7/2013 17:55
Surr: 4-Bromofluorobenzene	95.7			70-125	%REC	1	2/7/2013 17:55
Surr: Dibromofluoromethane	95.7			74-125	%REC	1	2/7/2013 17:55
Surr: Toluene-d8	99.5			78-123	%REC	1	2/7/2013 17:55
ANIONS - EPA 300.0 (1993)		Met	hod: E300				Analyst: JKP
Chloride	296		10	25.0	mg/L	50	2/14/2013 08:56
Fluoride	5.16		0.050	0.100	mg/L	1	2/7/2013 10:49
Nitrogen, Nitrate (As N)	2.39		0.030	0.100	mg/L	1	2/7/2013 10:49
Nitrogen, Nitrite (As N)	U		0.030	0.100	mg/L	1	2/7/2013 10:49
Sulfate	2,450		10	25.0	mg/L	50	2/14/2013 08:56
Surr: Selenate (surr)	87.9			85-115	%REC	1	2/7/2013 10:49
Surr: Selenate (surr)	110			85-115	%REC	50	2/14/2013 08:56
CYANIDE - SM4500CN E		Met	hod: M4500CN	E&G			Analyst: EDG
Cyanide	U		0.0040	0.0200	mg/L	1	2/12/2013 11:45
TOTAL DISSOLVED SOLIDS		Met	hod: M2540C				Analyst: KAH

Client: Navajo Refining Company

Project: RO Discharge Sampling Work Order: 1302189

 Sample ID:
 MW-118
 Lab ID:
 1302189-03

 Collection Date:
 2/5/2013 02:25 PM
 Matrix:
 WATER

Analyses	Result Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Total Dissolved Solids (Residue, Filterable)	4,610	5.0	10.0	mg/L	1	2/12/2013 10:15

Date: 19-Feb-13

Client:Navajo Refining CompanyProject:RO Discharge SamplingWork Order: 1302189Sample ID:TRIP BLANK 011813-71Lab ID: 1302189-04

Collection Date: 2/5/2013 Matrix:

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
LOW LEVEL VOLATILES - SW8260C		Method:	SW8260				Analyst: AKP
1,1,1-Trichloroethane	U	0	.00030	0.0010	mg/L	1	2/7/2013 18:19
1,1,2,2-Tetrachloroethane	U	0	.00050	0.0010	mg/L	1	2/7/2013 18:19
1,1,2-Trichloroethane	U	0	.00030	0.0010	mg/L	1	2/7/2013 18:19
1,1-Dichloroethane	U	0	.00030	0.0010	mg/L	1	2/7/2013 18:19
1,1-Dichloroethene	U	0	.00050	0.0010	mg/L	1	2/7/2013 18:19
1,2-Dibromoethane	U	0	.00030	0.0010	mg/L	1	2/7/2013 18:19
1,2-Dichloroethane	U	0	.00030	0.0010	mg/L	1	2/7/2013 18:19
Benzene	U	0	.00020	0.0010	mg/L	1	2/7/2013 18:19
Carbon tetrachloride	U	0	.00030	0.0010	mg/L	1	2/7/2013 18:19
Chloroform	U	0	.00030	0.0010	mg/L	1	2/7/2013 18:19
Ethylbenzene	U	0	.00030	0.0010	mg/L	1	2/7/2013 18:19
Methylene chloride	U	0	.00040	0.0020	mg/L	1	2/7/2013 18:19
Tetrachloroethene	U	0	.00040	0.0010	mg/L	1	2/7/2013 18:19
Toluene	U	0	.00030	0.0010	mg/L	1	2/7/2013 18:19
Trichloroethene	U	0	.00020	0.0010	mg/L	1	2/7/2013 18:19
Vinyl chloride	U	0	.00040	0.0010	mg/L	1	2/7/2013 18:19
Xylenes, Total	U	0	.00030	0.0010	mg/L	1	2/7/2013 18:19
Surr: 1,2-Dichloroethane-d4	87.1			71-125	%REC	1	2/7/2013 18:19
Surr: 4-Bromofluorobenzene	95.1			70-125	%REC	1	2/7/2013 18:19
Surr: Dibromofluoromethane	95.1			74-125	%REC	1	2/7/2013 18:19
Surr: Toluene-d8	99.2			78-123	%REC	1	2/7/2013 18:19

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

Date: 19-Feb-13

Client:Navajo Refining CompanyProject:RO Discharge SamplingWork Order: 1302189Sample ID:TRIP BLANK 011813-30Lab ID: 1302189-05

Collection Date: 2/5/2013 Matrix:

Analyses	Result	Qual MDL	Report Limit	Units	Dilution Factor	Date Analyzed
LOW LEVEL VOLATILES - SW8260C		Method: SW8260				Analyst: AKP
1,1,1-Trichloroethane	U	0.00030	0.0010	mg/L	1	2/7/2013 18:44
1,1,2,2-Tetrachloroethane	U	0.00050	0.0010	mg/L	1	2/7/2013 18:44
1,1,2-Trichloroethane	U	0.00030	0.0010	mg/L	1	2/7/2013 18:44
1,1-Dichloroethane	U	0.00030	0.0010	mg/L	1	2/7/2013 18:44
1,1-Dichloroethene	U	0.00050	0.0010	mg/L	1	2/7/2013 18:44
1,2-Dibromoethane	U	0.00030	0.0010	mg/L	1	2/7/2013 18:44
1,2-Dichloroethane	U	0.00030	0.0010	mg/L	1	2/7/2013 18:44
Benzene	U	0.00020	0.0010	mg/L	1	2/7/2013 18:44
Carbon tetrachloride	U	0.00030	0.0010	mg/L	1	2/7/2013 18:44
Chloroform	U	0.00030	0.0010	mg/L	1	2/7/2013 18:44
Ethylbenzene	U	0.00030	0.0010	mg/L	1	2/7/2013 18:44
Methylene chloride	U	0.00040	0.0020	mg/L	1	2/7/2013 18:44
Tetrachloroethene	U	0.00040	0.0010	mg/L	1	2/7/2013 18:44
Toluene	U	0.00030	0.0010	mg/L	1	2/7/2013 18:44
Trichloroethene	U	0.00020	0.0010	mg/L	1	2/7/2013 18:44
Vinyl chloride	U	0.00040	0.0010	mg/L	1	2/7/2013 18:44
Xylenes, Total	U	0.00030	0.0010	mg/L	1	2/7/2013 18:44
Surr: 1,2-Dichloroethane-d4	87.4		71-125	%REC	1	2/7/2013 18:44
Surr: 4-Bromofluorobenzene	96.0		70-125	%REC	1	2/7/2013 18:44
Surr: Dibromofluoromethane	95.0		74-125	%REC	1	2/7/2013 18:44
Surr: Toluene-d8	98.0		78-123	%REC	1	2/7/2013 18:44

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

Date: 19-Feb-13

Client: Navajo Refining Company

Work Order: 1302189

Project: RO Discharge Sampling

Date: 19-Feb-13

QC BATCH REPORT

Batch ID: 67710	Instrument ID FID-16		Method	d: SW80 1	5M						
MBLK Sample	ID: LBLKW-130208-67710				U	Jnits: mg/	L	Analysi	s Date: 2/	11/2013 0	2:30 PM
Client ID:	Run II	D: FID-16	_130211B		Se	qNo: 311 (0036	Prep Date: 2/8/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	U	0.050									
TPH (Oil Range)	U	0.10									
Surr: 2-Fluorobiphe	enyl 0.06355	0.0050	0.06061		0	105	60-135	0			
LCS Sample	ID: LLCSW-130208-67710				U	Inits: mg/	L __	Analysi	s Date: 2/	11/2013 0	2:52 PM
Client ID:	Run II	D: FID-16	_130211B		Se	qNo: 311 0	0037	Prep Date: 2/8/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	0.5399	0.050	0.6061		0	89.1	70-130	0			
TPH (Oil Range)	0.5571	0.10	0.6061		0	91.9	70-130	0			
Surr: 2-Fluorobiphe	enyl 0.0583	0.0050	0.06061		0	96.2	60-135	0			
LCSD Sample	ID: LLCSDW-130208-67710				U	Jnits: mg/	L	Analysi	s Date: 2/	11/2013 0	3:14 PM
Client ID:	Run II	D: FID-16	_130211B		Se	qNo: 311 0	0038	Prep Date: 2/8/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Diesel Range)	0.5053	0.050	0.6061		0	83.4	70-130	0.5399	6.61	20	
TPH (Oil Range)	0.494	0.10	0.6061		0	81.5	70-130	0.5571	12	20	
Surr: 2-Fluorobiphe	enyl 0.05676	0.0050	0.06061		0	93.7	60-135	0.0583	2.68	20	
The following sampl	es were analyzed in this batch:	1	302189-01C	13	8021	89-02C	13	02189-03C			

Client: Navajo Refining Company

Work Order: 1302189

Project: RO Discharge Sampling

Batch ID: R	142754 Instr	ument ID FID-9		Metho	d: SW801	5						
MBLK	Sample ID: GBLK	W-130213-R142754				Uı	nits: mg/	L	Analys	sis Date: 2/	13/2013 1	1:44 PN
Client ID:		Run	ID: FID-9 _	130213C		Sec	No: 311 :	3108	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Ra	ange Organics	U	0.050									
Surr: 4-B	romofluorobenzene	0.09263	0.0050	0.1		0	92.6	70-130	O)		
LCS	Sample ID: GLCS	W-130213-R142754				Uı	nits: mg/	L	Analys	sis Date: 2/	13/2013 1	0:50 PN
Client ID:		Run	ID: FID-9 _	130213C		Sec	No: 311 :	3106	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Ra	ange Organics	0.9572	0.050	1		0	95.7	70-130	0)		
Surr: 4-B	romofluorobenzene	0.09422	0.0050	0.1		0	94.2	70-130	O)		
LCSD	Sample ID: GLCS	DW-130213-R142754				Uı	nits: mg/	L	Analys	sis Date: 2/	13/2013 1	1:08 PN
Client ID:		Run	ID: FID-9 _	130213C		Sec	No: 311 :	3107	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Ra	ange Organics	0.9516	0.050	1		0	95.2	70-130	0.9572	0.586	30	
Surr: 4-B	romofluorobenzene	0.0934	0.0050	0.1		0	93.4	70-130	0.09422	2 0.877	30	
MS	Sample ID: 13023 6	08-07BMS				Uı	nits: mg/	L	Analys	sis Date: 2/	14/2013 0	3:19 AM
Client ID:		Run	ID: FID-9 _	130213C		Sec	No: 311 :	3125	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Ra	ange Organics	0.9172	0.050	1	0.0333	84	88.4	70-130	0)		
Surr: 4-B	romofluorobenzene	0.09279	0.0050	0.1		0	92.8	70-130	O)		
	Sample ID: 13023	08-07BMSD				Uı	nits: mg/	L	Analys	sis Date: 2/	14/2013 0	3:37 AM
MSD		D	ID: FID-9 _	130213C		Sec	No: 311 :	3126	Prep Date:		DF: 1	
		Run									DDD	
MSD Client ID: Analyte		Run Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Client ID: Analyte	ange Organics			SPK Val		34	%REC 90.8					Qual

Client: Navajo Refining Company

Work Order: 1302189

Project: RO Discharge Sampling

Batch ID: 67	7624	Instrument ID Mercury		Method	: SW747	0	(Dissolve	e)			
MBLK	Sample II	D: GBLKW4-020713-67624				Units: mo	ı/L	Analysi	s Date: 2/	7/2013 04	:12 PN
Client ID:		Run	ID: MERC	JRY_130207	Α	SeqNo: 31	05666	Prep Date: 2/7/2	2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Mercury		U	0.00020								
LCS	Sample II	D: GLCSW4-020713-67624				Units: mo	ı/L	Analysi	s Date: 2/	7/2013 04	:14 PN
Client ID:		Run	ID: MERC	JRY_130207	Α	SeqNo: 31	05667	Prep Date: 2/7/2	2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Mercury		0.00534	0.00020	0.005		0 107	80-120	0			
MS	Sample II	D: 1302162-02DMS				Units: mo	ı/L	Analysi	s Date: 2/	7/2013 04	:20 PI
Client ID:		Run	ID: MERC	JRY_130207	Α	SeqNo: 31	05670	Prep Date: 2/7/2	2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Mercury		0.00399	0.00020	0.005	-0.0000)1 80	80-120	0			
MSD	Sample II	D: 1302162-02DMSD				Units: mo	ı/L	Analysi	s Date: 2/	7/2013 04	:22 PN
Client ID:		Run	ID: MERC	JRY_130207	Α	SeqNo: 31	05671	Prep Date: 2/7/2	2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Mercury		0.00392	0.00020	0.005	-0.0000)1 78.6	80-120	0.00399	1.77	20	s
DUP	Sample II	D: 1302162-02DDUP				Units: mo	J/L	Analysi	s Date: 2/	7/2013 04	:18 PN
Client ID:		Run	ID: MERC	JRY_130207	Ά	SeqNo: 31	05669	Prep Date: 2/7/2	2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Mercury		U	0.00020	0		0 0	0-0	-0.00001	0	20	
The followi	na samples	s were analyzed in this batch	n: 1:	302189-01E	1.3	02189-02E	13	02189-03E			

Client: Navajo Refining Company

Work Order: 1302189

Project: RO Discharge Sampling

Batch ID: 676	39 Instrument ID ICPMS05		Method	SW602	20	(Dissolve	e)			
MBLK	Sample ID: MBLKW5-020813-67639				Units: mg/	L	Analy	sis Date: 2	/11/2013 (5:25 PM
Client ID:	Rur	n ID: ICPMS	05_130211A		SeqNo: 310 :	9576	Prep Date: 2/8	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.006192	0.010								J
Arsenic	U.000192	0.0050								J
Barium	U	0.0050								
Cadmium	U	0.0020								
Calcium	0.2533	0.50								J
Chromium	U	0.0050								
Cobalt	U	0.0050								
Copper	U	0.0050								
Iron	U	0.20								
Lead	U	0.0050								
Manganese	U	0.0050								
Molybdenum	U	0.0050								
Nickel	U	0.0050								
Potassium	U	0.20								
Selenium	U	0.0050								
Silver	U	0.0050								
Uranium	U	0.0050								
Zinc	0.003007	0.0050								J
MBLK	Sample ID: MBLKW5-020813-67639				Units: mg/	L	Analy	sis Date: 2	/12/2013 (2:04 PM
Client ID:	Rur	n ID: ICPMS	05_130212A		SeqNo: 311	0576	Prep Date: 2/8	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	U	0.050								
Sodium	U	0.20								

Client: Navajo Refining Company

Work Order: 1302189

Project: RO Discharge Sampling

Batch ID: 676	39 Instrument ID ICPMS05		Method:	SW602	0		(Dissolve	e)			
LCS	Sample ID: MLCSW5-020813-67639				U	nits: mg/	L	Analys	is Date: 2	/11/2013 0	5:27 PM
Client ID:	Ru	ın ID: ICPMS	05_130211A		Se	qNo: 310	9577	Prep Date: 2/8/	2013	DF: 1	
			;	SPK Ref			Control	RPD Ref		RPD	
Analyte	Result	PQL	SPK Val	Value		%REC	Limit	Value	%RPD	Limit	Qual
Aluminum	0.1117	0.010	0.1		0	112	80-120	0			
Arsenic	0.05058	0.0050	0.05		0	101	80-120	0			
Barium	0.05024	0.0050	0.05		0	100	80-120	0			
Cadmium	0.05148	0.0020	0.05		0	103	80-120	0			
Calcium	5.189	0.50	5		0	104	80-120	0			
Chromium	0.05108	0.0050	0.05		0	102	80-120	0			
Cobalt	0.05227	0.0050	0.05		0	105	80-120	0			
Copper	0.05136	0.0050	0.05		0	103	80-120	0			
Iron	5.088	0.20	5		0	102	80-120	0			
Lead	0.05288	0.0050	0.05		0	106	80-120	0			
Manganese	0.05154	0.0050	0.05		0	103	80-120	0			
Molybdenum	0.04945	0.0050	0.05		0	98.9	80-120	0			
Nickel	0.05042	0.0050	0.05		0	101	80-120	0			
Potassium	5.069	0.20	5		0	101	80-120	0			
Selenium	0.05183	0.0050	0.05		0	104	80-120	0			
Silver	0.05213	0.0050	0.05		0	104	80-120	0			
Sodium	5.221	1.0	5		0	104	80-120	0			
Uranium	0.1001	0.0050	0.1		0	100	80-120	0			
Zinc	0.05315	0.0050	0.05		0	106	80-120	0			
LCS	Sample ID: MLCSW5-020813-67639				U	nits: mg/	L	Analys	is Date: 2	/12/2013 0	2:06 PM
Client ID:	Ru	ın ID: ICPMS	05_130212A		Se	qNo: 311 (0577	Prep Date: 2/8/	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	0.5137	0.050	0.5		0	103	80-120	0			

Client: Navajo Refining Company

Work Order: 1302189

Project: RO Discharge Sampling

Batch ID: 670	Instrument ID ICPMS05		Method:	SW6020		(Dissolve	e)		
MS	Sample ID: 1302162-02DMS				Units: mg/	L	Analysis Date: 2	2/11/2013 (05:51 PM
Client ID:	Ru	ın ID: ICPMS	05_130211A	S	eqNo: 310	9595	Prep Date: 2/8/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value %RPD	RPD Limit	Qual
Aluminum	0.3754	0.010	0.1	0.08538	290	75-125	0		S
Arsenic	0.05166	0.0050	0.05	0.001764	99.8	75-125	0		
Barium	0.1245	0.0050	0.05	0.07333	102	75-125	0		
Boron	1.31	0.050	0.5	0.723	117	75-125	0		
Cadmium	0.05072	0.0020	0.05	0	101	75-125	0		
Calcium	205.4	0.50	5	195.9	189	75-125	0		SEO
Chromium	0.05017	0.0050	0.05	0	100	75-125	0		
Cobalt	0.05197	0.0050	0.05	0.00258	98.8	75-125	0		
Copper	0.05874	0.0050	0.05	0.007833	102	75-125	0		
Iron	5.244	0.20	5	0.08799	103	75-125	0		
Lead	0.05166	0.0050	0.05	0	103	75-125	0		
Manganese	1.043	0.0050	0.05	0.9886	108	75-125	0		0
Molybdenum	0.05065	0.0050	0.05	0.003301	94.7	75-125	0		
Nickel	0.05995	0.0050	0.05	0.01032	99.3	75-125	0		
Potassium	5.185	0.20	5	0.3187	97.3	75-125	0		
Selenium	0.05066	0.0050	0.05	0	101	75-125	0		
Silver	0.04846	0.0050	0.05	0	96.9	75-125	0		
Sodium	80.45	0.20	5	75.22	105	75-125	0		0
Uranium	0.1148	0.0050	0.05	0.01453	201	75-125	0		S
Zinc	0.1201	0.0050	0.05	0.111	18.2	75-125	0		S

Client: Navajo Refining Company

Work Order: 1302189

Project: RO Discharge Sampling

Batch ID: 676	639 l	nstrument ID ICPMS05		Method:	SW6020	-	(Dissolve	e)			
MSD	Sample ID: 130	02162-02DMSD				Units: mg/	L	Analysi	s Date: 2/	11/2013 0	5:54 PM
Client ID:		Run I	D: ICPMS	05_130211A	S	eqNo: 310 9	9596	Prep Date: 2/8/2	2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum		0.8466	0.010	0.1	0.08538	761	75-125	0.3754	77.1	25	SR
Arsenic		0.05059	0.0050	0.05	0.001764	97.7	75-125	0.05166	2.1	25	
Barium		0.1256	0.0050	0.05	0.07333	105	75-125	0.1245	0.876	25	
Boron		1.281	0.050	0.5	0.723	112	75-125	1.31	2.24	25	
Cadmium		0.05061	0.0020	0.05	0	101	75-125	0.05072	0.231	25	
Calcium		198.7	0.50	5	195.9	54.4	75-125	205.4	3.34	25	SEO
Chromium		0.04976	0.0050	0.05	0	99.5	75-125	0.05017	0.817	25	
Cobalt		0.05119	0.0050	0.05	0.00258	97.2	75-125	0.05197	1.53	25	
Copper		0.06255	0.0050	0.05	0.007833	109	75-125	0.05874	6.3	25	
Iron		5.64	0.20	5	0.08799	111	75-125	5.244	7.28	25	
Lead		0.05249	0.0050	0.05	0	105	75-125	0.05166	1.61	25	
Manganese		1.016	0.0050	0.05	0.9886	55.5	75-125	1.043	2.56	25	SO
Molybdenum		0.05104	0.0050	0.05	0.003301	95.5	75-125	0.05065	0.753	25	
Nickel		0.05914	0.0050	0.05	0.01032	97.6	75-125	0.05995	1.36	25	
Potassium		5.175	0.20	5	0.3187	97.1	75-125	5.185	0.195	25	
Selenium		0.04861	0.0050	0.05	0	97.2	75-125	0.05066	4.12	25	
Silver		0.04821	0.0050	0.05	0	96.4	75-125	0.04846	0.523	25	
Sodium		77.87	0.20	5	75.22	52.9	75-125	80.45	3.26	25	SO
Uranium		0.1148	0.0050	0.05	0.01453	201	75-125	0.1148	0.054	25	S
Zinc		0.121	0.0050	0.05	0.111	19.9	75-125	0.1201	0.707	25	S

Client: Navajo Refining Company

Work Order: 1302189

Project: RO Discharge Sampling

Batch ID: 67639	Instrument ID ICPMS05		Method:	SW6020)		(Dissolve	e)			
DUP Samp	le ID: 1302162-02DDUP				U	nits: mg/	L	Analysi	s Date: 2/	11/2013 0	5:49 PN
Client ID:	Run	ID: ICPMS	05_130211A		Sec	No: 310	9594	Prep Date: 2/8/2	2013	DF: 1	
	B. "	DOL		SPK Ref Value		0/ DEO	Control Limit	RPD Ref Value	0/ DDD	RPD Limit	Ougl
Analyte	Result	PQL	SPK Val	value		%REC	Lilling	Value	%RPD		Qual
Aluminum	0.1358	0.010	0	(0	0	0-0	0.08538	45.6	25	R
Arsenic	0.001544	0.0050	0	(0	0	0-0	0.001764	0	25	J
Barium	0.07134	0.0050	0	(0	0	0-0	0.07333	2.75	25	
Boron	0.7208	0.050	0	(0	0	0-0	0.723	0.295	25	
Cadmium	U	0.0020	0	(0	0	0-0	0.000088	0	25	
Chromium	U	0.0050	0	(0	0	0-0	0.000339	0	25	
Cobalt	0.002315	0.0050	0	(0	0	0-0	0.00258	0	25	J
Copper	0.007413	0.0050	0	(0	0	0-0	0.007833	5.51	25	
Iron	0.1153	0.20	0	(0	0	0-0	0.08799	0	25	J
Lead	U	0.0050	0	(0	0	0-0	0.000123	0	25	
Manganese	0.9603	0.0050	0	(0	0	0-0	0.9886	2.9	25	
Molybdenum	0.003106	0.0050	0	(0	0	0-0	0.003301	0	25	J
Nickel	0.0105	0.0050	0	(0	0	0-0	0.01032	1.73	25	
Potassium	0.3152	0.20	0	(0	0	0-0	0.3187	1.11	25	
Selenium	U	0.0050	0	(0	0	0-0	-0.000908	0	25	
Silver	U	0.0050	0	(0	0	0-0	0.000034	0	25	
Sodium	74.01	0.20	0	(0	0	0-0	75.22	1.62	25	
Uranium	0.01412	0.0050	0	(0	0		0.01453	2.91	25	
Zinc	0.1104	0.0050	0	(0	0	0-0	0.111	0.546	25	
DUP Samp	le ID: 1302162-02DDUP				U	nits: mg/	L	Analysi	s Date: 2/	12/2013 0	2:35 PM
Client ID:	Run	ID: ICPMS	05_130212A		Sec	No: 311 0)589	Prep Date: 2/8/2	2013	DF: 10	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	198.5	5.0	0	(0	0	0-0	202.2	1.85	25	
The following same	oles were analyzed in this batch	: 1:	302189-01E	130)218	89-02E	13	02189-03E			

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

Client: Navajo Refining Company

Work Order: 1302189

Project: RO Discharge Sampling

Batch ID: 67652	Instrument ID SV-6		Metho	d: SW827	0						
MBLK Sample ID: S	BLKW2-130207-67652				L	Jnits: µg/L		Analys	sis Date: 2	/8/2013 0 ⁻	1:13 PM
Client ID:	Ru	ın ID: SV-6_1	30208A		Se	qNo: 310	3320	Prep Date: 2/7	/2013	DF: 1	
			0.014.14.1	SPK Ref Value		~~==	Control Limit	RPD Ref Value	0/ 000	RPD Limit	0 1
Analyte	Result	PQL	SPK Val	value		%REC	Lilling	value	%RPD	Liiiit	Qual
1-Methylnaphthalene	U	0.20									
2-Methylnaphthalene	U	0.20									
Benzo(a)pyrene	U	0.20									
Naphthalene	U	0.20									
Surr: 2,4,6-Tribromopher	ool 3.917	0.20	5		0	78.3	34-129	C)		
Surr: 2-Fluorobiphenyl	4.298	0.20	5		0	86	40-125	C)		
Surr: 2-Fluorophenol	3.88	0.20	5		0	77.6	20-120	C)		
Surr: 4-Terphenyl-d14	4.845	0.20	5		0	96.9	40-135	C)		
Surr: Nitrobenzene-d5	4.337	0.20	5		0	86.7	41-120	C)		
Surr: Phenol-d6	4.179	0.20	5		0	83.6	20-120	C)		
LCS Sample ID: S	LCSW2-130207-67652				L	Jnits: µg/L	-	Analys	sis Date: 2	/8/2013 0°	1:33 PM
Client ID:	Ru	ın ID: SV-6_1	30208A		Se	qNo: 310	3321	Prep Date: 2/7	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	4.55	0.20	5		0	91	45-120	C)		
2-Methylnaphthalene	4.623	0.20	5		0	92.5	50-120	C)		
Benzo(a)pyrene	4.718	0.20	5		0	94.4	45-120	C)		
Naphthalene	4.463	0.20	5		0	89.3	45-120	C)		
Surr: 2,4,6-Tribromopher	nol 4.284	0.20	5		0	85.7	34-129	C)		
Surr: 2-Fluorobiphenyl	4.295	0.20	5		0	85.9	40-125	C)		
Surr: 2-Fluorophenol	4.096	0.20	5		0	81.9	20-120	C)		
Surr: 4-Terphenyl-d14	4.973	0.20	5		0	99.5	40-135	C)		
Surr: Nitrobenzene-d5	4.235	0.20	5		0	84.7	41-120	C)		
04											

Client: Navajo Refining Company

Work Order: 1302189

Project: RO Discharge Sampling

Batch ID: 676	52 Instrume	ent ID SV-6		Metho	d: SW827	0						
LCSD	Sample ID: SLCSDW2	2-130207-67652				Į	Jnits: µg/L		Analys	is Date: 2/	8/2013 01	:52 PM
Client ID:		Run ID	: SV-6_1	30208A		Se	qNo: 310	3323	Prep Date: 2/7/	2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnapht	halene	4.365	0.20	5		0	87.3	45-120	4.55	4.13	20	
2-Methylnapht	halene	4.423	0.20	5		0	88.5	50-120	4.623	4.44	20	
Benzo(a)pyren	ne	4.773	0.20	5		0	95.5	45-120	4.718	1.16	20	
Naphthalene		4.285	0.20	5		0	85.7	45-120	4.463	4.07	20	
Surr: 2,4,6-	Tribromophenol	4.279	0.20	5		0	85.6	34-129	4.284	0.118	0	
Surr: 2-Fluo	robiphenyl	4.281	0.20	5		0	85.6	40-125	4.295	0.322	0	
Surr: 2-Fluo	rophenol	4.05	0.20	5		0	81	20-120	4.096	1.12	0	
Surr: 4-Terp	henyl-d14	4.878	0.20	5		0	97.6	40-135	4.973	1.92	0	
Surr: Nitrob	enzene-d5	4.191	0.20	5		0	83.8	41-120	4.235	1.04	0	
Surr: Pheno	ol-d6	4.006	0.20	5		0	80.1	20-120	4.012	0.155	0	

MS	Sample ID: 1302166-02AMS				ı	Units: µg/l	-	Analys	Analysis Date: 2/8/2013 02:35 PM			
Client ID:		Run I	ID: SV-6_1	30208A	Se	eqNo: 310	8326	Prep Date: 2/7	/2013	DF: 1		
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
1-Methyln	naphthalene	4.507	0.20	5	0.041	89.3	45-120	O)			
2-Methyln	naphthalene	4.563	0.20	5	0.06144	90	50-120	0				
Benzo(a)	pyrene	4.668	0.20	5	0	93.4	45-120	0	1			
Naphthale	ene	4.369	0.20	5	0.05768	86.2	45-120	0	1			
Surr: 2,	,4,6-Tribromophenol	4.338	0.20	5	0	86.8	34-129	0	1			
Surr: 2	-Fluorobiphenyl	4.351	0.20	5	0	87	40-125	0	1			
Surr: 2	-Fluorophenol	3.971	0.20	5	0	79.4	20-120	0	1			
Surr: 4	-Terphenyl-d14	5.066	0.20	5	0	101	40-135	0	1			
Surr: N	litrobenzene-d5	4.259	0.20	5	0	85.2	41-120	0	1			
Surr: P	Phenol-d6	3.95	0.20	5	0	79	20-120	O				

Client: Navajo Refining Company

Work Order: 1302189

Project: RO Discharge Sampling

Batch ID: 67652 Instrument ID SV-6 Method: SW8270

MSD Sample ID: 1302166-0	2AMSD			l	Jnits: µg/l	-	Analysis Date: 2/8/2013 02:54 PN			
Client ID:	Run II	D: SV-6_1	30208A	Se	eqNo: 310	8327	Prep Date: 2/7/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	4.55	0.20	5	0.041	90.2	45-120	4.507	0.951	20	
2-Methylnaphthalene	4.617	0.20	5	0.06144	91.1	50-120	4.563	1.17	20	
Benzo(a)pyrene	4.952	0.20	5	0	99	45-120	4.668	5.91	20	
Naphthalene	4.415	0.20	5	0.05768	87.1	45-120	4.369	1.03	20	
Surr: 2,4,6-Tribromophenol	4.292	0.20	5	0	85.8	34-129	4.338	1.06	0	
Surr: 2-Fluorobiphenyl	4.291	0.20	5	0	85.8	40-125	4.351	1.38	0	
Surr: 2-Fluorophenol	3.848	0.20	5	0	77	20-120	3.971	3.15	0	
Surr: 4-Terphenyl-d14	5.26	0.20	5	0	105	40-135	5.066	3.77	0	
Surr: Nitrobenzene-d5	4.13	0.20	5	0	82.6	41-120	4.259	3.08	0	
Surr: Phenol-d6	3.943	0.20	5	0	78.9	20-120	3.95	0.168	0	

The following samples were analyzed in this batch:

Note:

QC BATCH REPORT

Client: Navajo Refining Company

Work Order: 1302189

Project: RO Discharge Sampling

Batch ID: R142338	Instrument ID VOA4		Metho	d: SW82 6	60					
MBLK Sample ID: V	/BLKW-130207-R142338				Units: µg/	L	Analy	/sis Date: 2	/7/2013 0	1:04 PM
Client ID:	Run II	D: VOA4 _	130207A		SeqNo: 310	6182	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	U	1.0								
1,1,2,2-Tetrachloroethane	U	1.0								
1,1,2-Trichloroethane	U	1.0								
1,1-Dichloroethane	U	1.0								
1,1-Dichloroethene	U	1.0								
1,2-Dibromoethane	U	1.0								
1,2-Dichloroethane	U	1.0								
Benzene	U	1.0								
Carbon tetrachloride	U	1.0								
Chloroform	U	1.0								
Ethylbenzene	U	1.0								
Methylene chloride	U	2.0								
Tetrachloroethene	U	1.0								
Toluene	U	1.0								
Trichloroethene	U	1.0								
Vinyl chloride	U	1.0								
Xylenes, Total	U	1.0								
Surr: 1,2-Dichloroethane	-d4 43.22	1.0	50		0 86.4	71-125	i	0		
Surr: 4-Bromofluorobenz	rene 47.27	1.0	50		0 94.5	70-125	i	0		
Surr: Dibromofluorometh	ane 48.09	1.0	50		0 96.2	74-125	i	0		
Surr: Toluene-d8	48.74	1.0	50		0 97.5	78-123		0		

Client: Navajo Refining Company

Work Order: 1302189

Project: RO Discharge Sampling

Batch ID: R142338	Instrument ID VOA4	Method: SW8260	
<u> </u>			

LCS Sample ID: VLCSW-13	0207-R142338				Units: µg/L	-	Analysis Date: 2/7/2013 11:52 AM			
Client ID:	Run II	D: VOA4 _	130207A	Se	eqNo: 310	6180	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	54.12	1.0	50	0	108	80-120	()		
1,1,2,2-Tetrachloroethane	47.37	1.0	50	0	94.7	74-123	()		
1,1,2-Trichloroethane	49.93	1.0	50	0	99.9	80-120	()		
1,1-Dichloroethane	45.83	1.0	50	0	91.7	80-120	()		
1,1-Dichloroethene	53.33	1.0	50	0	107	80-120	()		
1,2-Dibromoethane	54.67	1.0	50	0	109	80-120	()		
1,2-Dichloroethane	47.37	1.0	50	0	94.7	79-120	()		
Benzene	48.2	1.0	50	0	96.4	80-120	()		
Carbon tetrachloride	58.64	1.0	50	0	117	79-120	()		
Chloroform	46.43	1.0	50	0	92.9	80-120	()		
Ethylbenzene	50.46	1.0	50	0	101	80-120	()		
Methylene chloride	47.39	2.0	50	0	94.8	75-125	()		
Tetrachloroethene	55.58	1.0	50	0	111	80-120	()		
Toluene	49.84	1.0	50	0	99.7	80-121	()		
Trichloroethene	54.31	1.0	50	0	109	80-120	()		
Vinyl chloride	48.12	1.0	50	0	96.2	75-125	()		
Xylenes, Total	147.3	1.0	150	0	98.2	80-124	()		
Surr: 1,2-Dichloroethane-d4	40.29	1.0	50	0	80.6	71-125	()		
Surr: 4-Bromofluorobenzene	51.07	1.0	50	0	102	70-125	()		
Surr: Dibromofluoromethane	46.75	1.0	50	0	93.5	74-125	()		
Surr: Toluene-d8	48.46	1.0	50	0	96.9	78-123	()		

Client: Navajo Refining Company

Work Order: 1302189

Project: RO Discharge Sampling

Batch ID: R142338 Ir	nstrument ID VOA4	Method:	SW8260

LCSD Sample ID: VLCSDW-	130207-R142338				U	Jnits: µg/L	-	Analysi	is Date: 2/	7/2013 12	2:16 PI
Client ID:	Run II	D: VOA4 _	130207A		Se	qNo: 310	6181	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
1,1,1-Trichloroethane	53.04	1.0	50		0	106	80-120	54.12	2.03	20	
1,1,2,2-Tetrachloroethane	47.24	1.0	50		0	94.5	74-123	47.37	0.272	20	
1,1,2-Trichloroethane	50.09	1.0	50		0	100	80-120	49.93	0.316	20	
1,1-Dichloroethane	45.24	1.0	50		0	90.5	80-120	45.83	1.3	20	
1,1-Dichloroethene	51.67	1.0	50	1	0	103	80-120	53.33	3.17	20	
1,2-Dibromoethane	53.7	1.0	50		0	107	80-120	54.67	1.8	20	
1,2-Dichloroethane	46.81	1.0	50	1	0	93.6	79-120	47.37	1.19	20	
Benzene	46.92	1.0	50		0	93.8	80-120	48.2	2.7	20	
Carbon tetrachloride	55.21	1.0	50	-	0	110	79-120	58.64	6.03	20	
Chloroform	45.85	1.0	50		0	91.7	80-120	46.43	1.24	20	
Ethylbenzene	49.1	1.0	50		0	98.2	80-120	50.46	2.75	20	
Methylene chloride	46.39	2.0	50		0	92.8	75-125	47.39	2.13	20	
Tetrachloroethene	53.36	1.0	50		0	107	80-120	55.58	4.07	20	
Toluene	48.56	1.0	50		0	97.1	80-121	49.84	2.58	20	
Trichloroethene	52.61	1.0	50		0	105	80-120	54.31	3.17	20	
Vinyl chloride	46	1.0	50		0	92	75-125	48.12	4.5	20	
Xylenes, Total	144.2	1.0	150		0	96.1	80-124	147.3	2.14	20	
Surr: 1,2-Dichloroethane-d4	42.39	1.0	50		0	84.8	71-125	40.29	5.09	20	
Surr: 4-Bromofluorobenzene	51.83	1.0	50		0	104	70-125	51.07	1.47	20	
Surr: Dibromofluoromethane	48.24	1.0	50		0	96.5	74-125	46.75	3.14	20	
Surr: Toluene-d8	48.94	1.0	50		0	97.9	78-123	48.46	0.98	20	

Client: Navajo Refining Company

Work Order: 1302189

Surr: 4-Bromofluorobenzene

Surr: Dibromofluoromethane

Surr: Toluene-d8

Note:

Project: RO Discharge Sampling

Batch ID: R142338	Instrument ID VOA4		Method	SW826	0						
MS Sample ID: 1	1302212-01AMS				ι	Jnits: µg/L		Analys	sis Date: 2	2/7/2013 0	7:57 PM
Client ID:	R	un ID: VOA4_	130207A	A SeqNo: 3106199		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	53.97	1.0	50		0	108	80-120	C)		
1,1,2,2-Tetrachloroethane	45.9	1.0	50		0	91.8	74-123	C)		
1,1,2-Trichloroethane	49.51	1.0	50		0	99	80-120	C)		
1,1-Dichloroethane	44.96	1.0	50		0	89.9	80-120	C)		
1,1-Dichloroethene	54.68	1.0	50		0	109	80-120	C)		
1,2-Dibromoethane	53.74	1.0	50		0	107	80-120	C)		
1,2-Dichloroethane	47.08	1.0	50		0	94.2	79-120	C)		
Benzene	48	1.0	50		0	96	80-120	C)		
Carbon tetrachloride	58.28	1.0	50		0	117	79-120	C)		
Chloroform	45.95	1.0	50		0	91.9	80-120	C)		
Ethylbenzene	49.44	1.0	50		0	98.9	80-120	C)		
Methylene chloride	46.21	2.0	50		0	92.4	75-125	C)		
Tetrachloroethene	54.73	1.0	50		0	109	80-120	C)		
Toluene	49.36	1.0	50		0	98.7	80-121	C)		
Trichloroethene	54.11	1.0	50		0	108	80-120	C)		
Vinyl chloride	49.09	1.0	50		0	98.2	75-125	C)		
Xylenes, Total	144.9	1.0	150		0	96.6	80-124	C)		
Surr: 1,2-Dichloroethane	e-d4 42.45	1.0	50		0	84.9	71-125	C)		

51.15

47.86

48.37

1.0

1.0

1.0

50

50

50

0

0

0

102

95.7

96.7

70-125

74-125

78-123

0

0

Client: Navajo Refining Company

Work Order: 1302189

Project: RO Discharge Sampling

Batch ID: R142338	Instrument ID VOA4	Method:	SW8260
-------------------	--------------------	---------	--------

MSD Sample ID: 1302212-0	1AMSD			ı	Units: µg/l	-	Analysis Date: 2/7/2013 08:21 PM			
Client ID:	Run II	D: VOA4 _	130207A	Se	eqNo: 310	6200	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
1,1,1-Trichloroethane	57.01	1.0	50	0	114	80-120	53.97	5.48	20	
1,1,2,2-Tetrachloroethane	48.94	1.0	50	0	97.9	74-123	45.9	6.42	20	
1,1,2-Trichloroethane	50.75	1.0	50	0	101	80-120	49.51	2.47	20	
1,1-Dichloroethane	48.16	1.0	50	0	96.3	80-120	44.96	6.87	20	
1,1-Dichloroethene	56.88	1.0	50	0	114	80-120	54.68	3.95	20	
1,2-Dibromoethane	56.5	1.0	50	0	113	80-120	53.74	5	20	
1,2-Dichloroethane	51.51	1.0	50	0	103	79-120	47.08	8.98	20	
Benzene	52.19	1.0	50	0	104	80-120	48	8.37	20	
Carbon tetrachloride	63.72	1.0	50	0	127	79-120	58.28	8.92	20	S
Chloroform	49.3	1.0	50	0	98.6	80-120	45.95	7.04	20	
Ethylbenzene	52.5	1.0	50	0	105	80-120	49.44	5.99	20	
Methylene chloride	48.73	2.0	50	0	97.5	75-125	46.21	5.31	20	
Tetrachloroethene	57.75	1.0	50	0	115	80-120	54.73	5.36	20	
Toluene	51.86	1.0	50	0	104	80-121	49.36	4.94	20	
Trichloroethene	58.65	1.0	50	0	117	80-120	54.11	8.06	20	
Vinyl chloride	52.37	1.0	50	0	105	75-125	49.09	6.45	20	
Xylenes, Total	153.8	1.0	150	0	103	80-124	144.9	5.99	20	
Surr: 1,2-Dichloroethane-d4	43	1.0	50	0	86	71-125	42.45	1.3	20	
Surr: 4-Bromofluorobenzene	50.33	1.0	50	0	101	70-125	51.15	1.61	20	
Surr: Dibromofluoromethane	48.55	1.0	50	0	97.1	74-125	47.86	1.44	20	
Surr: Toluene-d8	48.73	1.0	50	0	97.5	78-123	48.37	0.743	20	

The following samples were analyzed in this batch:

1302189-01A	1302189-02A	1302189-03A	
1302189-04A	1302189-05A		

Client: Navajo Refining Company

Work Order: 1302189

Project: RO Discharge Sampling

Batch ID: R142498	Instrument ID VOA4		Metho	d: SW82 6	60					
MBLK Sample ID: V	BLKW2-130208-R142498				Units: µg/	L	Analy	sis Date: 2	/8/2013 1	1:09 PM
Client ID:	Run ID	: VOA4_	130208B		SeqNo: 310	8013	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	U	1.0								
1,1,2,2-Tetrachloroethane	U	1.0								
1,1,2-Trichloroethane	U	1.0								
1,1-Dichloroethane	U	1.0								
1,1-Dichloroethene	U	1.0								
1,2-Dibromoethane	U	1.0								
1,2-Dichloroethane	U	1.0								
Benzene	U	1.0								
Carbon tetrachloride	U	1.0								
Chloroform	U	1.0								
Ethylbenzene	U	1.0								
Methylene chloride	U	2.0								
Tetrachloroethene	U	1.0								
Toluene	U	1.0								
Trichloroethene	U	1.0								
Vinyl chloride	U	1.0								
Xylenes, Total	U	1.0								
Surr: 1,2-Dichloroethane	-d4 49.71	1.0	50		0 99.4	71-125		0		
Surr: 4-Bromofluorobenz	ene 50.66	1.0	50		0 101	70-125		0		
Surr: Dibromofluorometh	ane 49.37	1.0	50		0 98.7	74-125		0		
Surr: Toluene-d8	52.58	1.0	50		0 105	78-123		0		

Client: Navajo Refining Company

Work Order: 1302189

Project: RO Discharge Sampling

Batch ID: R142498	Instrument ID VOA4	Method:	SW8260

LCS Sample ID: VLCSW2-	-130208-R142498				U	nits: µg/L	-	Anal	ysis Date: 2	2/8/2013 0	9:57 PN
Client ID:	Run II	D: VOA4 _	130208B		Sec	qNo: 310 8	3009	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	55.09	1.0	50		0	110	80-120		0		
1,1,2,2-Tetrachloroethane	49.36	1.0	50		0	98.7	74-123		0		
1,1,2-Trichloroethane	51.51	1.0	50		0	103	80-120		0		
1,1-Dichloroethane	51.83	1.0	50		0	104	80-120		0		
1,1-Dichloroethene	54.88	1.0	50		0	110	80-120		0		
1,2-Dibromoethane	54.57	1.0	50	-	0	109	80-120		0		
1,2-Dichloroethane	50.55	1.0	50		0	101	79-120		0		
Benzene	50.32	1.0	50		0	101	80-120		0		
Carbon tetrachloride	50.54	1.0	50		0	101	79-120		0		
Chloroform	50.55	1.0	50	1	0	101	80-120		0		
Ethylbenzene	51.95	1.0	50		0	104	80-120		0		
Methylene chloride	52.11	2.0	50	1	0	104	75-125		0		
Tetrachloroethene	53.98	1.0	50		0	108	80-120		0		
Toluene	52.03	1.0	50	1	0	104	80-121		0		
Trichloroethene	53.32	1.0	50		0	107	80-120		0		
Vinyl chloride	56.32	1.0	50	-	0	113	75-125		0		
Xylenes, Total	153.9	1.0	150		0	103	80-124		0		
Surr: 1,2-Dichloroethane-d4	47.96	1.0	50	-	0	95.9	71-125		0		
Surr: 4-Bromofluorobenzene	53.9	1.0	50		0	108	70-125		0		
Surr: Dibromofluoromethane	49.34	1.0	50	-	0	98.7	74-125		0		
Surr: Toluene-d8	51.2	1.0	50		0	102	78-123		0		

Client: Navajo Refining Company

Work Order: 1302189

Project: RO Discharge Sampling

Batch ID: R142498	Instrument ID VOA4	Method: SW8260
-------------------	--------------------	----------------

LCSD Sample ID: VLCSDW2	2-130208-R142498				L	Jnits: µg/L	-	Analysi	s Date: 2/	8/2013 10):21 PN
Client ID:	Run II	D: VOA4 _	130208B		Se	qNo: 310	3011	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
1,1,1-Trichloroethane	54.6	1.0	50		0	109	80-120	55.09	0.901	20	
1,1,2,2-Tetrachloroethane	49.32	1.0	50		0	98.6	74-123	49.36	0.068	20	
1,1,2-Trichloroethane	50.72	1.0	50		0	101	80-120	51.51	1.54	20	
1,1-Dichloroethane	50.95	1.0	50		0	102	80-120	51.83	1.71	20	
1,1-Dichloroethene	54.92	1.0	50		0	110	80-120	54.88	0.0699	20	
1,2-Dibromoethane	53.64	1.0	50		0	107	80-120	54.57	1.71	20	
1,2-Dichloroethane	50.43	1.0	50		0	101	79-120	50.55	0.233	20	
Benzene	49.36	1.0	50		0	98.7	80-120	50.32	1.93	20	
Carbon tetrachloride	49.16	1.0	50		0	98.3	79-120	50.54	2.78	20	
Chloroform	49.36	1.0	50		0	98.7	80-120	50.55	2.36	20	
Ethylbenzene	50.31	1.0	50		0	101	80-120	51.95	3.2	20	
Methylene chloride	51.14	2.0	50		0	102	75-125	52.11	1.88	20	
Tetrachloroethene	52.07	1.0	50		0	104	80-120	53.98	3.59	20	
Toluene	50.24	1.0	50		0	100	80-121	52.03	3.5	20	
Trichloroethene	51.88	1.0	50		0	104	80-120	53.32	2.73	20	
Vinyl chloride	54.47	1.0	50		0	109	75-125	56.32	3.34	20	
Xylenes, Total	149.4	1.0	150		0	99.6	80-124	153.9	2.94	20	
Surr: 1,2-Dichloroethane-d4	47.27	1.0	50		0	94.5	71-125	47.96	1.45	20	
Surr: 4-Bromofluorobenzene	53.48	1.0	50		0	107	70-125	53.9	0.798	20	
Surr: Dibromofluoromethane	49.25	1.0	50		0	98.5	74-125	49.34	0.193	20	
Surr: Toluene-d8	51.32	1.0	50		0	103	78-123	51.2	0.233	20	

0

Client: Navajo Refining Company

Work Order: 1302189

Surr: Toluene-d8

Note:

Project: RO Discharge Sampling

Batch ID: R142498	Instrument ID VOA4		Method	: SW8260						
MS Sample ID: 1	1302236-06AMS				Units: µg/L		Analys	sis Date: 2	2/9/2013 0	1:35 AM
Client ID:	Ru	n ID: VOA4 _	130208B	S	eqNo: 310 8	3165	Prep Date:		DF: 2	500
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	133700	2,500	125000	0	107	80-120	C	1		
1,1,2,2-Tetrachloroethane	118800	2,500	125000	0	95	74-123	0	1		
1,1,2-Trichloroethane	124000	2,500	125000	0	99.2	80-120	0)		
1,1-Dichloroethane	125300	2,500	125000	0	100	80-120	0	1		
1,1-Dichloroethene	133000	2,500	125000	0	106	80-120	0)		
1,2-Dibromoethane	128600	2,500	125000	0	103	80-120	C	1		
1,2-Dichloroethane	122700	2,500	125000	0	98.1	79-120	0	1		
Benzene	120300	2,500	125000	0	96.3	80-120	0	1		
Carbon tetrachloride	119000	2,500	125000	0	95.2	79-120	0	1		
Chloroform	129400	2,500	125000	8729	96.5	80-120	0			
Ethylbenzene	128100	2,500	125000	4531	98.9	80-120	0	1		
Methylene chloride	126400	5,000	125000	3717	98.1	75-125	0			
Tetrachloroethene	125900	2,500	125000	0	101	80-120	0	1		
Toluene	123700	2,500	125000	0	99	80-121	0			
Trichloroethene	125300	2,500	125000	0	100	80-120	0	1		
Vinyl chloride	134600	2,500	125000	0	108	75-125	0	1		
Xylenes, Total	418500	2,500	375000	49150	98.5	80-124	0	1		
Surr: 1,2-Dichloroethane	<i>e-d4</i> 120700	2,500	125000	0	96.6	71-125	0	1		
Surr: 4-Bromofluorobenz	zene 134800	2,500	125000	0	108	70-125	0	1		
Surr: Dibromofluorometh	nane 125100	2,500	125000	0	100	74-125	0	1		

129500

2,500

125000

0

104

78-123

Client: Navajo Refining Company

Work Order: 1302189

Project: RO Discharge Sampling

Batch ID: R142498	Instrument ID VOA4	Method: SW8260
-------------------	--------------------	----------------

MSD Sample ID: 1302236-0	6AMSD			l	Units: µg/L	-	Analysi	s Date: 2/	9/2013 01	:59 AN
Client ID:	Run I	D: VOA4 _	130208B	Se	eqNo: 310	8166	Prep Date:		DF: 25	00
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
1,1,1-Trichloroethane	126500	2,500	125000	0	101	80-120	133700	5.49	20	
1,1,2,2-Tetrachloroethane	114100	2,500	125000	0	91.3	74-123	118800	3.98	20	
1,1,2-Trichloroethane	121100	2,500	125000	0	96.9	80-120	124000	2.42	20	
1,1-Dichloroethane	119600	2,500	125000	0	95.7	80-120	125300	4.61	20	
1,1-Dichloroethene	126100	2,500	125000	0	101	80-120	133000	5.28	20	
1,2-Dibromoethane	125900	2,500	125000	0	101	80-120	128600	2.14	20	
1,2-Dichloroethane	120200	2,500	125000	0	96.2	79-120	122700	2.05	20	
Benzene	115900	2,500	125000	0	92.7	80-120	120300	3.75	20	
Carbon tetrachloride	114600	2,500	125000	0	91.7	79-120	119000	3.76	20	
Chloroform	126000	2,500	125000	8729	93.8	80-120	129400	2.64	20	
Ethylbenzene	123600	2,500	125000	4531	95.2	80-120	128100	3.62	20	
Methylene chloride	122300	5,000	125000	3717	94.8	75-125	126400	3.31	20	
Tetrachloroethene	121800	2,500	125000	0	97.5	80-120	125900	3.3	20	
Toluene	120100	2,500	125000	0	96.1	80-121	123700	2.94	20	
Trichloroethene	120400	2,500	125000	0	96.3	80-120	125300	3.98	20	
Vinyl chloride	126900	2,500	125000	0	102	75-125	134600	5.88	20	
Xylenes, Total	409000	2,500	375000	49150	96	80-124	418500	2.29	20	
Surr: 1,2-Dichloroethane-d4	119500	2,500	125000	0	95.6	71-125	120700	0.999	20	
Surr: 4-Bromofluorobenzene	135500	2,500	125000	0	108	70-125	134800	0.5	20	
Surr: Dibromofluoromethane	123000	2,500	125000	0	98.4	74-125	125100	1.7	20	
Surr: Toluene-d8	129000	2,500	125000	0	103	78-123	129500	0.346	20	

The following samples were analyzed in this batch:

Note:

1302189-01A

Client: Navajo Refining Company

Work Order: 1302189

Project: RO Discharge Sampling

Batch ID: R142275	Instrument ID ICS2100		Method	d: E300		(Dissolve)			
MBLK Sample ID:	WBLKW2-R142275				Units: mg	/L	Analys	sis Date: 2/	6/2013 11	:17 AN
Client ID:	Run	ID: ICS210	0_130206A		SeqNo: 310	4639	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Fluoride	U	0.10								
Nitrogen, Nitrate (As N)	U	0.10								
Nitrogen, Nitrite (As N)	U	0.10								
Surr: Selenate (surr)	4.316	0.10	5		0 86.3	85-115	0)		
.CS Sample ID:	WLCSW2-R142275				Units: mg	/L	Analys	sis Date: 2/	6/2013 11	:31 AN
Client ID:	Run	ID: ICS210	0_130206A		SeqNo: 310	4640	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Fluoride	3.608	0.10	4		0 90.2	90-110	0)		
Nitrogen, Nitrate (As N)	4.033	0.10	4		0 101	90-110	0)		
Nitrogen, Nitrite (As N)	4.332	0.10	4		0 108	90-110	0)		
Surr: Selenate (surr)	4.436	0.10	5		0 88.7	85-115	0)		
MS Sample ID:	13011010-20BMS				Units: mg/	/1	Analys	sis Date: 2/	6/2013 07	':14 PI
					Ornio. Ing	_			.,	
Client ID:		ID: ICS210	0_130206A		SeqNo: 310		Prep Date:	Date:	DF: 5	
		ID: ICS210	0_130206A SPK Val	SPK Ref Value	•		-	%RPD		
Analyte	Run				SeqNo: 310	4667 Control	Prep Date:	%RPD	DF: 5 RPD	
Client ID: Analyte Fluoride Nitrogen, Nitrate (As N)	Run Result	PQL	SPK Val	Value 0.12	SeqNo: 310	4667 Control Limit	Prep Date: RPD Ref Value	%RPD	DF: 5 RPD	
Analyte Fluoride Nitrogen, Nitrate (As N)	Run Result 8.773	PQL 0.50	SPK Val	Value 0.12	%REC 5 86.5	4667 Control Limit 80-120	Prep Date: RPD Ref Value	%RPD	DF: 5 RPD	Qua
analyte Fluoride Jitrogen, Nitrate (As N)	Run Result 8.773 10.03	PQL 0.50 0.50	SPK Val 10 10	Value 0.12	%REC 5 86.5 0 100	4667 Control Limit 80-120 80-120	Prep Date: RPD Ref Value 0	%RPD	DF: 5 RPD	Qua H
Analyte Fluoride Nitrogen, Nitrate (As N) Nitrogen, Nitrite (As N) Surr: Selenate (surr)	Result 8.773 10.03 10.57	PQL 0.50 0.50 0.50	SPK Val 10 10	Value 0.12	%REC 5 86.5 0 100 0 106	4667 Control Limit 80-120 80-120 80-120 85-115	Prep Date: RPD Ref Value 0 0 0	%RPD	DF: 5 RPD Limit	Qua H H
Analyte Fluoride Nitrogen, Nitrate (As N) Nitrogen, Nitrite (As N) Surr: Selenate (surr) MSD Sample ID:	Result 8.773 10.03 10.57 21.26	PQL 0.50 0.50 0.50	SPK Val 10 10 10 25	Value 0.12	%REC 5 86.5 0 100 0 106 0 85.1	4667 Control Limit 80-120 80-120 80-120 85-115	Prep Date: RPD Ref Value 0 0 0	%RPD	DF: 5 RPD Limit	Qua H H
Analyte Fluoride Nitrogen, Nitrate (As N) Nitrogen, Nitrite (As N) Surr: Selenate (surr) MSD Sample ID: Client ID:	Result 8.773 10.03 10.57 21.26	PQL 0.50 0.50 0.50 0.50	SPK Val 10 10 10 25	Value 0.12	%REC 5 86.5 0 100 0 106 0 85.1 Units: mg	4667 Control Limit 80-120 80-120 80-120 85-115	Prep Date: RPD Ref Value 0 0 0 Analys	%RPD	DF: 5 RPD Limit	Qua H H
Analyte Fluoride Nitrogen, Nitrate (As N) Nitrogen, Nitrite (As N) Surr: Selenate (surr) MSD Sample ID: Client ID: Analyte	Result 8.773 10.03 10.57 21.26 13011010-20BMSD Run	PQL 0.50 0.50 0.50 0.50	SPK Val 10 10 10 25 0_130206A	Value 0.12 SPK Ref	%REC 5 86.5 0 100 0 106 0 85.1 Units: mg. SeqNo: 310 %REC	4667 Control Limit 80-120 80-120 80-120 85-115 /L 4669 Control	Prep Date: RPD Ref Value 0 0 0 Analys Prep Date: RPD Ref	%RPD	DF: 5 RPD Limit 6/2013 07 DF: 5 RPD	Qua H H
Analyte Fluoride Nitrogen, Nitrate (As N) Nitrogen, Nitrite (As N) Surr: Selenate (surr) MSD Sample ID: Client ID: Analyte Fluoride	Result 8.773 10.03 10.57 21.26 13011010-20BMSD Run Result	PQL 0.50 0.50 0.50 0.50	SPK Val 10 10 10 25 0_130206A SPK Val	Value 0.12 SPK Ref Value 0.12	%REC 5 86.5 0 100 0 106 0 85.1 Units: mg. SeqNo: 310 %REC	4667 Control Limit 80-120 80-120 80-120 85-115 //L 4669 Control Limit	Prep Date: RPD Ref Value 0 0 0 Analys Prep Date: RPD Ref Value	%RPD sis Date: 2/ %RPD 4.99	DF: 5 RPD Limit 6/2013 07 DF: 5 RPD Limit	Qua H H
Analyte Fluoride Nitrogen, Nitrate (As N) Nitrogen, Nitrite (As N) Surr: Selenate (surr)	Result 8.773 10.03 10.57 21.26 13011010-20BMSD Run Result 9.222	PQL 0.50 0.50 0.50 0.50 PQL 0.50	SPK Val 10 10 10 25 0_130206A SPK Val 10	Value 0.12 SPK Ref Value 0.12	%REC 5 86.5 0 100 0 106 0 85.1 Units: mg. SeqNo: 310 %REC 5 91	4667 Control Limit 80-120 80-120 80-120 85-115 /L 4669 Control Limit 80-120	Prep Date: RPD Ref Value 0 0 0 Analys Prep Date: RPD Ref Value 8.773	%RPD sis Date: 2/ %RPD 4.99 4.12	DF: 5 RPD Limit 6/2013 07 DF: 5 RPD Limit	Qua H H C:29 Pl
Analyte Fluoride Nitrogen, Nitrate (As N) Nitrogen, Nitrite (As N) Surr: Selenate (surr) MSD Sample ID: Client ID: Analyte Fluoride Nitrogen, Nitrate (As N)	Result 8.773 10.03 10.57 21.26 13011010-20BMSD Run Result 9.222 10.45	PQL 0.50 0.50 0.50 0.50 ID: ICS210 PQL 0.50 0.50	SPK Val 10 10 25 0_130206A SPK Val 10 10	Value 0.12 SPK Ref Value 0.12	%REC 5 86.5 0 100 0 106 0 85.1 Units: mg. SeqNo: 310 %REC 5 91 0 105	4667 Control Limit 80-120 80-120 80-120 85-115 /L 4669 Control Limit 80-120 80-120	Prep Date: RPD Ref Value 0 0 0 Analys Prep Date: RPD Ref Value 8.773 10.03	%RPD sis Date: 2/ %RPD 4.99 4.12 2.65	DF: 5 RPD Limit 6/2013 07 DF: 5 RPD Limit 20 20	Qua H H 7:29 Pl

Navajo Refining Company

Work Order: 1302189

Client:

RO Discharge Sampling Project:

QC BATCH REPORT

Batch ID: R1	42545 Instrument	ID Balance1		Metho	d: M2540	С	((Dissolve)			
MBLK	Sample ID: WBLK-02081	3-R142545				Ur	nits: mg/ l	L __	Analys	is Date: 2/	8/2013 04	:15 PN
Client ID:		Run I	D: BALAN	CE1_13020	8E	Seq	No: 310 9	9325	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Total Dissolv	ved Solids (Residue, Fil	U	10									
LCS	Sample ID: WLCS-02081	3-R142545				Ur	nits: mg/ l	L	Analys	is Date: 2/	8/2013 04	:15 PN
Client ID:		Run I	D: BALAN	CE1_13020	8E	Seq	No: 310 9	9326	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissolv	ved Solids (Residue, Fil	940	10	1000		0	94	85-115	0			
DUP	Sample ID: 1302121-01F	DUP				Ur	nits: mg/ l	<u> </u>	Analys	is Date: 2/	8/2013 04	:15 PN
Client ID:		Run I	D: BALAN	CE1_13020	8E	Seq	No: 310 9	9329	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Total Dissolv	ved Solids (Residue, Fil	496	10	0		0	0	0-0	498	0.402	20	
DUP	Sample ID: 1302189-01G	DUP				Ur	nits: mg/ l	L	Analys	is Date: 2/	8/2013 04	:15 PN
Client ID: MV	W-116	Run I	D: BALAN	CE1_13020	8E	Seq	No: 310 9	9492	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Total Dissalu	ved Solids (Residue, Fil	3598	10	0		0	0	0-0	3652	1.49	20	
TOTAL DISSOIN												

Client: Navajo Refining Company

Work Order: 1302189

Project: RO Discharge Sampling

Fluoride	Batch ID: R142615	Instrument ID ICS2100		Method	d: E300			(Dissolve)			
Result PQL SPK Val	MBLK Sample ID:	WBLKW1-R142615				U	nits: mg/	L	Analys	is Date: 2/	12/2013 1	0:37 AN
Palayte Result PQL SPK Val Value %REC Limit RECOMPTION R	Client ID:	Run I): ICS210	0_130212A		Sec	qNo: 311 (0343	Prep Date:		DF: 1	
Nitrogen Nitrate As N	Analyte	Result	POI	SPK Val			%RFC			%RPD		Qual
Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (As N) Nitrogen, Nitrate (A	·			01 17 741			701120			701 11 12		
Nitrogen Nitrite (As N)												J
Surr. Selenate (surr) 4.937 0.10 5 0 96.7 85-115 0	• , ,											0
Result R				5		0	98.7	85-115	0			
Result R	_CS Sample ID:	WLCSW1-R142615				U	nits: mg/	L	Analys	is Date: 2/	12/2013 1	0:52 AN
Result PQL SPK Val Value %REC Limit Value %RPD Limit Limit Value %RPD Limit	Client ID:	Run I): ICS210	0_130212A		Sec	qNo: 311 (0344	Prep Date:		DF: 1	
Nitrogen, Nitrate (As N)	Analyte	Result	PQL	SPK Val			%REC			%RPD		Qual
Nitrogen, Nitrate (As N)	Fluoride	3.832	0.10	4		0	95.8	90-110	0			
Surr: Selenate (surr) 5.024 0.10 5 0 100 85-115 0	Nitrogen, Nitrate (As N)	4.379	0.10	4		0	109	90-110	0			
MS Sample ID: 1302189-01GMS Client ID: MW-116 Run ID: ICS2100_130212A SeqNo: 3110358 Prep Date: DF: 1 Analysis Date: 2/12/2013 12: SPK Ref Value Result PQL SPK Val SPK Ref Value SPK Ref Valu	-	4.304	0.10	4		0	108	90-110	0			
Client ID: MW-116 Run ID:	Surr: Selenate (surr)	5.024	0.10	5		0	100	85-115	0			
Analyte Result PQL SPK Val Value Value RPD Ref Value RPD R	MS Sample ID:	1302189-01GMS				U	nits: mg/	L	Analys	is Date: 2/	12/2013 1	2:58 PI
Result PQL SPK Val Value %REC Limit Value %RPD Limit	Client ID: MW-116	Run IE): ICS210	0_130212A		Sec	qNo: 311 0	0358	Prep Date:		DF: 1	
Nitrogen, Nitrate (As N) 3.165 0.10 2 1.367 89.9 80-120 0 Nitrogen, Nitrite (As N) 2.338 0.10 2 0 117 80-120 0 Surr: Selenate (surr) 4.387 0.10 5 0 87.7 85-115 0 MSD Sample ID: 1302189-01GMSD Units: mg/L Analysis Date: 2/12/2013 01: Client ID: MW-116 Run ID: ICS2100_130212A SeqNo: 3110360 Prep Date: DF: 1 Analyte Result PQL SPK Val SPK Val Value %REC Limit Value %RPD Ref Value %RPD Limit Fluoride 2.747 0.10 2 1.307 72 80-120 2.761 0.508 20 Nitrogen, Nitrate (As N) 3.201 0.10 2 1.367 91.7 80-120 3.165 1.13 20 Nitrogen, Nitrite (As N) 2.324 0.10 2 0 116 80-120 2.338 0.601 20	Analyte	Result	PQL	SPK Val			%REC			%RPD		Qual
Nitrogen, Nitrate (As N) 3.165 0.10 2 1.367 89.9 80-120 0 Nitrogen, Nitrite (As N) 2.338 0.10 2 0 117 80-120 0 Surr: Selenate (surr) 4.387 0.10 5 0 87.7 85-115 0 MSD Sample ID: 1302189-01GMSD Units: mg/L Analysis Date: 2/12/2013 01: Client ID: MW-116 Run ID: ICS2100_130212A SeqNo: 3110360 Prep Date: DF: 1 Analyte Result PQL SPK Val SPK Val Value %REC Limit Value %RPD Ref Value %RPD Limit Fluoride 2.747 0.10 2 1.307 72 80-120 2.761 0.508 20 Nitrogen, Nitrate (As N) 3.201 0.10 2 1.367 91.7 80-120 3.165 1.13 20 Nitrogen, Nitrite (As N) 2.324 0.10 2 0 116 80-120 2.338 0.601 20	-luoride	2.761	0.10	2	1.30	07	72.7	80-120	0			S
Surr: Selenate (surr) 4.387 0.10 5 0 87.7 85-115 0 MSD Sample ID: 1302189-01GMSD Units: mg/L Analysis Date: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/20	Nitrogen, Nitrate (As N)	3.165	0.10		1.36	67	89.9	80-120	0			Н
MSD Sample ID: 1302189-01GMSD Units: mg/L Analysis Date: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2013 01: 2/12/2	Nitrogen, Nitrite (As N)	2.338	0.10	2		0	117	80-120	0			Н
Client ID: MW-116 Run ID: ICS2100_130212A SeqNo: 3110360 Prep Date: DF: 1 Analyte Result PQL SPK Val Value Value RPD Ref Value RPD Ref Value RPD Limit Fluoride 2.747 0.10 2 1.307 72 80-120 2.761 0.508 20 Nitrogen, Nitrate (As N) 3.201 0.10 2 1.367 91.7 80-120 3.165 1.13 20 Nitrogen, Nitrite (As N) 2.324 0.10 2 0 116 80-120 2.338 0.601 20	Surr: Selenate (surr)	4.387	0.10	5		0	87.7	85-115	0			
Analyte Result PQL SPK Val SPK Ref Value Control Limit RPD Ref Value RPD Limit Fluoride 2.747 0.10 2 1.307 72 80-120 2.761 0.508 20 Nitrogen, Nitrate (As N) 3.201 0.10 2 1.367 91.7 80-120 3.165 1.13 20 Nitrogen, Nitrite (As N) 2.324 0.10 2 0 116 80-120 2.338 0.601 20	MSD Sample ID:	1302189-01GMSD				U	nits: mg/	L	Analys	is Date: 2/	12/2013 0	1:12 PN
Analyte Result PQL SPK Val Value %REC Limit Value %RPD Limit Fluoride 2.747 0.10 2 1.307 72 80-120 2.761 0.508 20 Nitrogen, Nitrate (As N) 3.201 0.10 2 1.367 91.7 80-120 3.165 1.13 20 Nitrogen, Nitrite (As N) 2.324 0.10 2 0 116 80-120 2.338 0.601 20	Client ID: MW-116	Run IE): ICS210	0_130212A		Sec	qNo: 311 0	0360	Prep Date:		DF: 1	
Nitrogen, Nitrate (As N) 3.201 0.10 2 1.367 91.7 80-120 3.165 1.13 20 Nitrogen, Nitrite (As N) 2.324 0.10 2 0 116 80-120 2.338 0.601 20	Analyte	Result	PQL	SPK Val			%REC			%RPD		Qual
Nitrogen, Nitrite (As N) 2.324 0.10 2 0 116 80-120 2.338 0.601 20		2.747	0.10	2	1.30	07	72	80-120	2.761	0.508	20	S
	Nitrogen, Nitrate (As N)	3.201	0.10	2	1.36	67	91.7	80-120	3.165	1.13	20	Н
Surr: Selenate (surr) 4.498 0.10 5 0 90 85-115 4.387 2.5 20	Nitrogen, Nitrite (As N)	2.324	0.10	2		0	116	80-120	2.338	0.601	20	Н
	Surr: Selenate (surr)	4.498	0.10	5		0	90	85-115	4.387	2.5	20	

Client: Navajo Refining Company

Work Order: 1302189

Project: RO Discharge Sampling

Batch ID: R	1142650 Instrument ID UV-2450		Method	: M4500	CN E&G	(Dissolve)			
MBLK	Sample ID: WBLKW1-021213-R142650				Units: mg/	′L	Analys	sis Date: 2/	/12/2013 1	11:45 AM
Client ID:	Run I	D: UV-245	60_130212D		SeqNo: 311	1136	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	U	0.020								
LCS	Sample ID: WLCSW1-021213-R142650				Units: mg/	'L	Analys	sis Date: 2/	/12/2013 1	11:45 AM
Client ID:	Run I	D: UV-245	60_130212D		SeqNo: 311	1137	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide	0.162	0.020	0.2		0 81	80-120	О	1		
LCSD	Sample ID: WLCSDW1-021213-R14265	0			Units: mg/	′L	Analys	sis Date: 2/	/12/2013 1	11:45 AM
Client ID:	Run I	D: UV-245	60_130212D		SeqNo: 311	1147	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
	Result 0.166				·				Limit	Qual
Cyanide		PQL	SPK Val		%REC	Limit 80-120	Value 0.162		Limit 20	
Cyanide MS	0.166 Sample ID: 1302217-01BMS	PQL 0.020	SPK Val		%REC 0 83	Limit 80-120 /L	Value 0.162	2.44	Limit 20	
Analyte Cyanide MS Client ID: Analyte	0.166 Sample ID: 1302217-01BMS	PQL 0.020	SPK Val		%REC 0 83 Units: mg/	Limit 80-120 /L	Value 0.162 Analys	2.44	Limit 20 /12/2013 1	
Cyanide MS Client ID:	0.166 Sample ID: 1302217-01BMS Run I	PQL 0.020 D: UV-245	SPK Val 0.2 60_130212D	Value SPK Ref	%REC 0 83 Units: mg/ SeqNo: 311 %REC	80-120 /L 1146 Control	Value 0.162 Analys Prep Date: RPD Ref	2.44 sis Date: 2/	Limit 20 /12/2013 1 DF: 1 RPD	11:45 AM

Navajo Refining Company

Work Order: 1302189

Client:

Project: RO Discharge Sampling

QC BATCH REPORT

Batch ID: R	142723 Instrument	ID Balance1		Method	d: M2540	С	((Dissolve)			
MBLK	Sample ID: WBLK-02121	13-R142723				U	nits: mg/ l	L __	Analys	sis Date: 2/	12/2013 1	0:15 AM
Client ID:		Run I	D: BALAN	CE1_13021	2C	Sec	No: 311 2	2460	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissol	ved Solids (Residue, Fil	U	10									
LCS	Sample ID: WLCS-02121	3-R142723				U	nits: mg/ l	L	Analys	sis Date: 2/	12/2013 1	0:15 AM
Client ID:		Run I	D: BALAN	CE1_13021	2C	Sec	No: 311 2	2461	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissol	ved Solids (Residue, Fil	964	10	1000		0	96.4	85-115	0			
DUP	Sample ID: 1302159-010	DUP				U	nits: mg/ l	L	Analys	sis Date: 2/	12/2013 1	0:15 AM
Client ID:		Run I	D: Balan	CE1_13021	2C	Sec	No: 311 2	2436	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Total Dissol	ved Solids (Residue, Fil	230	10	0		0	0	0-0	216	6.28	20	
DUP	Sample ID: 1302276-01K	(DUP				U	nits: mg/ l	L	Analys	sis Date: 2/	12/2013 1	0:15 AM
Client ID:		Run I	D: BALAN	CE1_13021	2C	Sec	No: 311 2	2993	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
								0-0	1960	0	20	
	ved Solids (Residue, Fil	1960	10	0		0	0	0-0	1900	U	20	

Client: Navajo Refining Company

Work Order: 1302189

Project: RO Discharge Sampling

Batch ID: R1	142773	Instrument ID ICS3K2		Metho	d: E300			(Dissolve)			
MBLK	Sample ID:	WBLKW1-R142773				U	nits: mg/	L	Analys	sis Date: 2/	14/2013 1	2:37 AM
Client ID:		Run	ID: ICS3K2	2_130214B		Sec	No: 311 ;	3452	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride		U	0.50									
Sulfate		U	0.50									
Surr: Sele	enate (surr)	5.088	0.10	5		0	102	85-115	0	1		
LCS	Sample ID:	WLCSW1-R142773				U	nits: mg/	L	Analys	sis Date: 2/	14/2013 1	2:59 AM
Client ID:		Run	ID: ICS3K2	2_130214B		Sec	No: 311 ;	3454	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride		18.08	0.50	20		0	90.4	90-110	0			
Sulfate		18.57	0.50	20		0	92.9	90-110	0	1		
Surr: Sele	enate (surr)	5.138	0.10	5		0	103	85-115	0	ı		
MS	Sample ID:	1302276-01GMS				U	nits: mg/	L	Analys	sis Date: 2/	14/2013 0	6:46 AM
Client ID:		Run	ID: ICS3K2	2_130214B		Sec	qNo: 311 :	3475	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride		749.4	0.50	10	762	.7	-133	80-120	0			SEO
Sulfate		160.2	0.50	10	154	.2	59.6	80-120	0			SEO
Surr: Sele	enate (surr)	5.296	0.10	5		0	106	85-115	0	l 		
MSD	Sample ID:	1302276-01GMSD				U	nits: mg/	L	Analys	sis Date: 2/	14/2013 0	7:07 AM
Client ID:		Run	ID: ICS3K2	2_130214B		Sec	No: 311 ;	3476	Prep Date:		DF: 1	
Client ID:					SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
		Result	PQL	SPK Val								
Analyte		Result			762	7	-137	80-120	749 4	0.0533	20	SEO
Analyte Chloride		749	0.50	10	762 154		-137 58.6	80-120 80-120	749.4 160.2		20 20	SEO SEO
Analyte Chloride Sulfate	enate (surr)				154		-137 58.6 106	80-120 80-120 <i>85-115</i>	749.4 160.2 5.296	0.065	20	SEO SEO

Date: 19-Feb-13 **ALS Environmental**

Client: Navajo Refining Company **QUALIFIERS,** RO Discharge Sampling **Project:**

ACRONYMS, UNITS WorkOrder: 1302189

Qualifier	Description
<u>Quanner</u> *	<u>Description</u>
·	Value exceeds Regulatory Limit
a	Not accredited
В	Analyte detected in the associated Method Blank above the Reporting Limit
Е	Value above quantitation range
Н	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
Acronym	<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
Units Reported	Description

mg/L Milligrams per Liter

Sample Receipt Checklist

Client Name:	NAVAJO REFINING			Date/Time	Received:	06-Feb-13 0	<u>8:40</u>	
Work Order:	<u>1302189</u>			Received b	y: <u>.</u>	<u>JBA</u>		
Checklist compl	leted by Lahnnie B. Dllen eSignature		12-Feb-13 Date	Reviewed by:	Patricia eSignature	L. Lynch	?	19-Feb-13 Date
Matrices: Carrier name:	water FedEx Priority Overnight							
Shipping contain	ner/cooler in good condition?		Yes	¹ No □	Not Preser	nt 🗌		
Custody seals in	ntact on shipping container/coole	r?	Yes 🔻	No 🗆	Not Preser	nt 🗆		
Custody seals in	ntact on sample bottles?		Yes	No 🗆	Not Preser	nt 🔽		
Chain of custod	y present?		Yes 🔻	No 🗌				
Chain of custod	y signed when relinquished and i	received?	Yes 🔻	No 🗆				
Chain of custod	y agrees with sample labels?		Yes 🔻	No 🗆				
Samples in prop	per container/bottle?		Yes 🔽	No 🗆				
Sample contain	ers intact?		Yes 🔻	No 🗆				
Sufficient sample	le volume for indicated test?		Yes 🔻	No 🗆				
All samples rece	eived within holding time?		Yes 🔻	No 🗆				
Container/Temp	Blank temperature in compliand	e?	Yes 🔻	No 🗆				
Temperature(s)	/Thermometer(s):		1.6 C,1.0	C,1.1 C,1.3 /uc	<u>IR 1</u>			
Cooler(s)/Kit(s):			3747/304	0/3306/4185				
	ole(s) sent to storage:		2/6/13 17				\neg	
	als have zero headspace?		Yes ▶		No VOA vials	submitted l		
	eptable upon receipt?		Yes ▼		N/A L			
pH adjusted? pH adjusted by:			Yes L	No ✓	N/A L			
Login Notes:	1302189-01;-02; & -03 Radi	um fraction re-lo	gged in WO 1	302192-01;-02 & -	03 respectively			
	.=======:	:						
Client Contacted	d:	Date Contacted	l:	Person	Contacted:			
Contacted By:		Regarding:						
Comments:								
CorrectiveAction	n:							
	1						0001	4 . (4



Cincinnati, OH +1 513 733 5336

Everett, WA +1 425 356 2600 Fort Collins, CO +I 970 490 1511

Holland, MI +1 616 399 6070

Chain of Custody Form

Page \ of \

coc ID: 72327

1302189

NAVAJO REFINING: Navajo Refining Company

Enviro	nmental			Å	LS Project	Manager:						44 9		ge Sa		g		
C	Sustomer Information		Proje	ect Informat	17, 17, 17, 17, 17, 17, 17, 17, 17, 17,	er, competion in course and designate												
Purchase Order Project Name				RO Discharge/Sampling A														
Work Order		Project Num	nber 12	8823			В	GRO (8015M)										
Company Name	Navajo Refining Company	Bill To Comp	any Na	vajo Refining (Company		С											
Send Report To	Robert Cornbs	Invoice /	Attn Ro	bert Combs	***************************************		D											
Address	501 East Main	Addr	20 A 5 C 4 C 5 C 5 C 5 C	501 East Main				LL S										
City/State/Zip	Artesia, NM 88211	City/State/	/Zip Art	esia, NM 882	111		F G	Total Metals (6020/7860) RORA 8 Dissolved Metals (6020/7000) RCRA 8										
Phone	(575) 748-6733		rust (Sektual) Geografikasi	(5) 748-6733		·····	H	TDS		iate setts	(0020)	1000) 10	OIM 0					
Fax	(575) 746-5421	200 C.	parameters.	5) 746-5421			1			Radi	نست			~~~				
e-Mail Address		e-Mail Addr	ess		TO THE REAL PROPERTY OF THE		J					HOY SH	a Dist)	Anio	175, C	zhions	, Cjanide	
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	A	В	C	D	E	F	G	H	l I	J	Hold	
1 M	0-116	2-3-13	1315	water	MIX	16					-	X	X	X	X	X	Extra Battles	
2\$ M(N-112	2-4-13	1040	water	Mix	11	X	X	X	X	X	*						
3																		
4																		
5	- Contractor Food Addition																	
6																		
7																		
8																		
9																		
10			TO SHOW THE PROPERTY OF THE PR															
Sampler(s) Please Pri		Shipment	t Method	Requ		ound Time: (0				her MK Dav	<u> </u> S	24 Hou		lesults l	Due Da	ite:		
Relinquished by C	Date: 2-5-/3	Time: OP 30	Received by			2/1/2	Notes			100,000 0111		And the state of the state of	ayayarı yeşi	d Filtere	≥d	**************************************		
Relinquished by: Date: Time: Regeli		Received by (La	aboratory):		14'	Cooler ID Cooler T			er Temp. QC Package: (Check One B			ox Belo	ox Below)					
Logged by (Laboratory); Date: Time: Check Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-				aboratory):) _a 7-Other	8-4°C	9-5035	_3 ⊂	Level II Std QC Level III Std QC/Raw Data Level IV SW846/CLP Other / EDD						RP CheckList				

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.



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

Houston, TX +1 281 530 5656

Middletown, PA +1 717 944 5541 Spring City, PA +1 610 948 4903 Salt Lake City, UT +1 801 266 7700

South Charleston, WV +1 304 356 3168 +1 717 505 5280

York, PA

COC ID: 72225

Enviro	nmental		Takes			I S Project			ko psyléri	Vesassárektas	Makeo mo	ALC MA	ale (Need)	an males	98496-486	i I Siktimi, ass	o o salaka a demok ^a i Pro
Customer Information			Pı	ALS Project Manager: Project Information				ALS Work Order #: Parameter/Method Request for Analysis									
Purchase Order Project Name				RO Disc				A									
Work Order		Project Numbe	193. Pr	128823				В	····	RO (8015	-					·	
Company Name	Navajo Refining Company	Bill To Company	1000	Navajo R	efinina	Company	TOURS IT STANDARD AND ADDRESS OF THE STANDARD AND ADDRESS	c		RO (8015							***************************************
Send Report To	Robert Combs	Invoice Attu	7484	Robert C				D		₹O (8016					***************************************	<u>.i.</u>	
Address	501 East Main	Address		501 East				E		·····		IM GW Lis	t			<u> </u>	
								F	То	tal Metal	s (6020 ,	7000) RC	10 10 -/	1 -019	1 5	<u>.</u>	
City/State/Zip	Artesia, NM 88211	City/State/Zip)	Artesia, I	VM 882	211		G	Dis	solved N	letals (6	3020/7000) RCRA	8	<u></u>	XT	
Phone	(575) 748-6733	Phone	3	(575) 741	a-6733	**************************************		н	Æ	s Q	1:						
Fax	(575) 746-5421	Fax		(575) 740	3-5421				Radium Maisture								
e-Mail Address	e-Mail Address						J	"Fingerprint (PTAMO/Sp Grav, Sim Dist) Cations, Anions (ns Cyanis			
No.	Sample Description	Date	Time	N.	latrix	Pres.	# Bottles	Α	В	C	D	E J	G	H			Hold
1 45 M	W-119	2/5/13	HS.	25 m	rater	Mix	图门					X	X	X	×	×	Hold Extras
2 6 M	N-118	215/13	142	5 W	340	Mix	15		-			X	X	· ×	X	X	
3			~~~														
4			····						-								
5								ļ								-	
6		A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 / A 1 /															
7			1777 70000 44 540000								1						
8							-										
9																	
10				4				-								1	
Sampler(s) Please Pri	nt & Sign 3	Shipment Me	ethod			ired Turnaro ✓ Std 10 \/	K Days] 5 W	K Days		K Days	, 21	Tour	Results		ıte:	
Enc Dec	905en 2515 Date:	1600	13/	y (Laborato		200	1302	Moto≤:		.,		ssolved M					
	<u> </u>					·		l Coc	oler ID	Coole	r Temp,	QC Packa	age: (Che		lox Belo	~~~	RP CheckList
Logged by (Laboratory): Preservative Key:	Date: 1-HCl 2-HNO ₃ 3-H ₂ SO ₂ 4-I			y (Laborato	it is			31	14%]] [evel il Si evel il Si evel iV Si	d QC/Ra			RP Level IV
	1-HCl 2-HNO₃ 3-H₂SO₄ 4-I	NaOH 5-Na ₂ S ₂ O ₃	6-Nah	1504	7-Other	8-4°C	9-5035	reini					ther / ED	D			

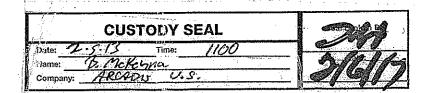
Note: 1. Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

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 Environm

ECHECONOLICE:	Package Express US Airbill Tracking BO13 7025 2083	ne 0215	ក្រុមព្រះក្រុងមក្សា <u>ប</u>
1	From Date 2/5/13	4 Express Package Service *Townst locations. NOTE Service order has changed Plonso select carofully.	Packages up to 150 lbs. For packages over 150 lbs. use the Fedex Express Freight US Albait.
	Sender's Name 281 787-1234		or 3 Business Days edex 2Day A.M. coed business moring.* uurdey Dakrey NOT avalloblo.
	Address 2929 Sign (24) K Sign C 300	FedEx Priority Overnight Next business counting: Friday shipments will be dishered on Monday unless SATURDAY Delivery is selected.	dEx 2Day cond business affermoon.* Thursday shipmonts the delivered on Monday unless SATURBAY Pray is salected. dEx Express Saver
	City Ston State X ZIP / CM Z	Selandary Delivery NOT evaluated. Set 5 Packaging - Declared value (Irral \$500.	rd business day;" unday Defining NOT avollable.
	Your Internal Billing Reference	FedEx Envelope* FedEx Pak*	FedEx FedEx Other
3	To Recipient's Name CLIENT SERVICES Phone 281 530-5656	6 Special Handling and Delivery Signature 0 SATURDAY Delivery NOT evailable for FedEx Standard Overnight, FedEx 20 by A.M., or FedEx Exp	ress Saver.
	Company ALS 1 ABTRATTIEV GROUP HOLD Weekday Feds between address 10.450 STANCLIFF RD GDF DIO TESTINGUES AND ADDRESS AND ADDRE	No Signature Required Peckage may be left without Obtaining a signature for delivery. Does this shipment contain dangerous goods?	Indirect Signature In one is evaluable at recipient's address map sign for delivery, for residential deliveries only. Free applies.
	Address () () () () () (A T ()	One box must be checked. No Yes As per stacked Shipper's Declaration not required. Dangerous goods including dy ine) cannot be shipped in Feeltz packaging or placed in a Feeltz Express Drop Box.	Dry loe Dry loe Dry loe X x kg Cargo Aircraft Only
	City HOUSTEIN State TX ZIP 77099-4338	7 Payment Bill to: Enter FedEx Acct. No. or Credit Car Sender Acct. No. or Credit Car Rectipient	Obtain recip. Card Card Cash/Check
	0455309602	Total Packages Total Weight the first the firs	Oresis Certif Auch
L		Rev. Date 2/12 - Part J163133 - @1994-2012 FedEx - PRINTED IN U.S.A. SRS	Same a double of the first of t



ובחבלירחווו ויחחימחנבמבא ויחחילםסיססס



O I I C. AITAIL	Form Fig. 1. Service To meal locations. NOTE Service order has changed. Phase select cardiuly. NOTE Service order has changed. Phase select cardiuly. To meal locations. To meal locat
Express US A. 1 From Date 2/5//3 Phone 2/5//3/Phone 2/5/ 7/5/-12/3/4	North Business Day Fedex 2Day A.M. Second business norming. Salurday Debrery NOT aveilable. Salurday Debrery NOT aveilable.
Sender's Name	Mordary inference of the principal of th
Address State X ZIP 7704Z	5 Packaging *Declared volue finds \$200 FedEx FedEx Tube Othe
2 Your Internal Billing Reference	6 Special Handling and Delivery Signature Options SATURDAY Delivery NOT evailable for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Savet. Direct Signature Direct Signature Someone at recipions address, sameone at another for each other for address, sameone at another for address, and address, address, sameone at another for address, sameone at another for address, and address,
3 To Recipient's CLIECT SERVICES Phone Phone Name	Characteristic a sensitive for dewer.
Company Company Dect/Roor/Suita/Room HOLD Starmings Hoth S	Obtain racip.
Address Use this line for the HOLD location address or for continuation of your shipping address. State ZIP	7 Payment Bill to: Enter FedEx Acrt. No. or Credit Card No. below. Sender Sender Acrt to in Section Recipient Third Party Credit Card Cash/Ct
CIV HOUSTON SOME OFFICER	Total Packages Total Weight Total Packages Total Weight To # Fackages Total Weight
8013 8012 5537	**TOUR SUDING IS Enriched to USSIGN UPPERS THE PRINTED IN U.S.A. SHS **Rev. Date 2/12 - Part #153134 - ©1994 - 2012 FedEx - PRINTED IN U.S.A. SHS



10450 Stancliff Rd., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5887

Na ite: Co: ime: - mpany:

1 From

Date

Sender's

Company

Address

To

Recipient's

Company

Address

Address

Name



Rev. Date 1/12 - Part #157002 + @2012 FedEx - PRINTED IN U.S.A. SRF

They liability is limited to US\$100 unless you do clare a biother value. See the current FedEx Service Guide for details

£1. 3

644



S Environmental 10450 Stancill Rd Suite 27 Houston, Texas 77099 Tel. 41 281 530 5656 Fax. +1 281 530 5887

CUSTODY SEAL Date:

Name: Company:

48 of 49



		Packan	۵	5 FedEx						
	Express	Packagi US Air	bill	FedEx Tracking Number	80	13	801	.2	557	0'
From Date 2	7511	3								4
Sender's Name	Eric	<u> </u>	(qe/s			Phone	521	7/	97-	1734 _[
Company	, ARC	ADIS	<u> </u>							
Address	292	9 ()	ic pa	rk'	Y.	<u>r</u>	50:	te.	Dept/Ro	Ox/Suite/Room
City	-hous				State	TX	ZIP	77(<u>)47</u>	· ·
Your In	ternal Billing	Reference								
To Recipien Name	rs olite	NT BEA	VICES	-		Phone	28 i	513	() m 5.) <u>658</u>
Compan	y 41.3	labore	NORY	GROA	<u> </u>					
Address		STAM	Section 2	90		210		H Fe Fe	OLD Weel dex location at OUIRED, NOT dex First Over	cday ddress available for
Address						Depu/H	oodSukedRoom	Fe Fe	OLD Satur dEx location add QUIRED. Availa dEx Prioray Ova dEx 2Day to selo	Me CNLY for [
	o for the HOLD focation	n address or for contin	uation of your stops	olng eddress.	State	TX	ZIP 7		•	338

0455550776



_	/ jen (0215	
	4 Express Package Service *To most NOTE: Service order has changed. Please select can	, · · · · ·
	Next Business Day	2 or 3 Business Days
54	Feet E. First Ogbros Att the state of the st	FedEx 2Day A.M. Second business noming.* Saturday Osinvoy NOT available.
-	FedEx Priority Overnight Next business morning. "Friday shipmens will be delevered on Moodby unless SATURDAY Delivery is selected.	FetiEx 2Day Second business attempore.* Thursday stripments with be defined on Monday unless SATURIDAY Definery is selected.
arn 	FedEx Standard Overnight Next business attempon.* Saturday Delivery NOT available.	FedEx Express Saver Third business day: Saturday Belivery NDT available.
	5 Packaging *Declared value limit \$900.	
_	FedEx Envelope* FedEx Pak*	☐ FedEx ☐ FedEx ☐ Other
-	6 Special Handling and Delivery Si	gnature Options
	SATURDAY Delivery NOT available for FedEx Standard Overnight, FedEx 2Day A	Indirect Signature
	1 Deckare may be between 1 1 Someon	Signature a at recipient's address a trecipient's address, someone at a neighboring address, new spin for oldivery, for residential deliveries unity. Fee applies.
	Does this shipment contain dangerous goo	ds?
	One box must be checked. Yes As por etached Shopper's Declaration. Shopper's Declaration.	Divines on the
	Dangerous goods (including dry ice) cannot be shipped in FedEx pac or placed in a FedEx Express Brop Blox.	Largo Aircraft Only
;		No. or Credit Card No. below. Obtain recip. Acct. No.
	Sender Acct No in Section A Recipient	Third Party Credit Card Cash/Check
i	WWW. TOWN	
	Total Packages Total Weight bs.	Credit Card Auch
	†Bur Sability is Knited to US\$100 unless you declare a higher value. Se	e the current FedEx Service Guide for details.



Da Νε С¢

ALS Enuironmental 10450 Stanciiff Ad., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5887

CUSTODY SEAL	Seal Broken By:
te: 4313 Time: 1100	Date:
препу:	— Jage,
49 of 49	

Rev. Date 2/12 • Port #163134 • @1954-2012 FadEx • PRINTED IN U.S.A. SRS



28-Feb-2013

Robert Combs Navajo Refining Company PO Box 159 Artesia, NM 88211

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

Re: RO Discharge Sampling Work Order: 1302192

Dear Robert,

ALS Environmental received 6 samples on 05-Feb-2013 through 06-Feb-2013 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 38.

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

Sincerely,

Electronically approved by: Jumoke M. Lawal

Sonie West

Sonia West Project Manager TNI LABORATORY

Certificate No: T104704231-12-10

ALS Environmental

Date: 28-Feb-13

Client: Navajo Refining Company
Project: RO Discharge Sampling

Work Order: 1302192

Work Order Sample Summary

Lab Samp II	Client Sample ID	<u>Matrix</u>	Tag Number	Collection Date	Date Received	<u>Hold</u>
1302192-01	MW-116	Water		2/3/2013 13:15	2/6/2013 08:40	
1302192-02	MW-119	Water		2/5/2013 13:15	2/6/2013 08:40	
1302192-03	MW-118	Water		2/5/2013 14:25	2/6/2013 08:40	
1302192-05	MW-117	Water		2/3/2013 10:00	2/5/2013 09:15	
1302192-06	MW-114	Water		2/3/2013 11:30	2/5/2013 09:15	
1302192-07	MW-115	Water		2/3/2013 12:30	2/5/2013 09:15	

ALS Environmental Date: 28-Feb-13

Client: Navajo Refining Company
Project: RO Discharge Sampling

Work Order: 1302192

Case Narrative

The analyses for Radium 226 and Radium 228 were subcontracted to ALS Environmental in Ft. Collins, CO.

ALS Environmental Date: 28-Feb-13

Client: Navajo Refining Company

Project: RO Discharge Sampling Work Order: 1302192
Sample ID: MW-116 Lab ID: 1302192-01

 Sample ID:
 MW-116
 Lab ID:
 1302192-0

 Collection Date:
 2/3/2013 01:15 PM
 Matrix:
 WATER

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached012/28/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling Work Order: 1302192

 Sample ID:
 MW-119
 Lab ID:
 1302192-02

 Collection Date:
 2/5/2013 01:15 PM
 Matrix:
 WATER

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 28-Feb-13

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached012/28/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling Work Order: 1302192

 Sample ID:
 MW-118
 Lab ID:
 1302192-03

 Collection Date:
 2/5/2013 02:25 PM
 Matrix:
 WATER

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 28-Feb-13

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached012/28/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling Work Order: 1302192

 Sample ID:
 MW-117
 Lab ID:
 1302192-05

 Collection Date:
 2/3/2013 10:00 AM
 Matrix:
 WATER

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 28-Feb-13

MISCELLANEOUS ANALYSIS
Method: NA

Method: NA

Analyst: SUB

1 2/28/2013

ALS Environmental Date: 28-Feb-13

Client: Navajo Refining Company

Project: RO Discharge Sampling Work Order: 1302192
Sample ID: MW-114 Lab ID: 1302192-06

 Sample ID:
 MW-114
 Lab ID:
 1302192

 Collection Date:
 2/3/2013 11:30 AM
 Matrix:
 WATER

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached012/28/2013

ALS Environmental Date: 28-Feb-13

Client: Navajo Refining Company

Project: RO Discharge Sampling Work Order: 1302192

 Sample ID:
 MW-115
 Lab ID:
 1302192-07

 Collection Date:
 2/3/2013 12:30 PM
 Matrix:
 WATER

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached012/28/2013

Date: 28-Feb-13 **ALS Environmental**

Client: Navajo Refining Company **QUALIFIERS,** RO Discharge Sampling **Project:** ACRONYMS, UNITS

WorkOrder: 1302192

01'6'	Description
Qualifier	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
В	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
Н	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
Acronym	<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
	Described On antituding Limit
PQL	Practical Quantitation Limit
PQL SD	Serial Dilution
_	-
SD	Serial Dilution

Sample Receipt Checklist

Client Name:	NAVAJO REFINING		Date/Time F	<u>3 00:00</u>	
Work Order:	1302192		Received by	y: PMG	
Checklist comp	oleted by Lohnnie B. Dolen eSignature	12-Feb-13 Date	Reviewed by:	eSignature	Date
Matrices: Carrier name:	water FedEx Priority Overnight				
Shipping conta	iner/cooler in good condition?	Yes	✓ No □	Not Present	
Custody seals	intact on shipping container/coole	r? Yes	✓ No □	Not Present	
Custody seals	intact on sample bottles?	Yes	□ No □	Not Present 🗹	
Chain of custoo	dy present?	Yes	✓ No □		
Chain of custoo	dy signed when relinquished and	received? Yes	✓ No □		
Chain of custoo	dy agrees with sample labels?	Yes	✓ No □		
Samples in pro	per container/bottle?	Yes	✓ No □		
Sample contain	ners intact?	Yes	✓ No □		
Sufficient samp	ole volume for indicated test?	Yes	✓ No □		
All samples red	ceived within holding time?	Yes	✓ No □		
Container/Tem	p Blank temperature in compliand	e? Yes	✓ No □		
Temperature(s)/Thermometer(s):	1.2 C,	1.4 C,1.0 C,1.6 C/uc	<u>IR 1</u>	
Cooler(s)/Kit(s)):	3323/7	119/3040/3747		
Date/Time sam	nple(s) sent to storage:		17:00 & 2/6/13 17:00		
	ials have zero headspace?	Yes		No VOA vials submitted	
	eptable upon receipt?	Yes		N/A \square	
pH adjusted? pH adjusted by	<i>r</i> :	Yes -	□ No ✓	N/A	
Login Notes:	Two separate arrival dates;	These samples were initially	y in WO 1302138 & 1	302189 for Radium anal	<u>yses</u>
Client Contacte	ed:	Date Contacted:	Person	Contacted:	
Contacted By:		Regarding:			
Comments:					
CorrectiveAction	on:				
					SRC Page 1 of 1



Everett, WA +1 425 356 2600 Fort Collins, CO +1 970 490 1511

Holland, MI +1 616 399 6070

Chain of Custody Form

coc ID: 72329

1302192

NAVAJO REFINING: Navajo Refining Company

						ALS Project Manager:						<u>.</u>		Pro	ject: F	RO Di	schar	ge Sa	amplir	ng
1	Customer Informa	ation				Proje	ct Informa		ze wanage											
Purchase Order				Project	Name	Ţ	Discharge/S			A	VC									
Work Order				Project N	umber		3823			В		*								
Company Name	Navajo Refining (Company		Bill To Cor	491.54		vajo Refining	Canana												
Send Report To	Robert Combs			wiek 1 Aug 191 - 1985.	e Attn			Company		C										
	501 East Main	Committee of the Commit		mvoic	e Aun		pert Combs			D	OF	RO (801	5M)					· · · · · · · · · · · · · · · · · · ·		
Address			Į.	Ad	Idress	501	East Main			E										
City/State/Zip	Adamia kika 000									F	Tot	al Meta	ıls (6026	3/7000)	RERA		-8~9	Lis	<u> </u>	
	Artesia, NM 882	111		City/Stat	te/Zip	Arte	esia, NM 882	211		G	Dis	solved	Metals (6020/7	000) R	CRA 8	J)		
Phone	(575) 748-15733		r g	Phone (575) 748-6733								TDS								
Fax	(575) 746-5421		Š.		Fax	(57	5) 746-5421				A4e	isture -	· C.							
e-Mail Address				e-Mail Ad	dress					Ü	Fing	erprint	C C	erric			Rac	400	. An	Work
No.	Sample Descriptio	11 13 E 1 V 2 1 V 2 1 V 2 1 V 2 1 V 2 1 V 2 1 V 2 1 V 2 1 V 2 1 V 2 V 2	(i. 2 - 1)	Date	Ti	me	Matrix	Pres.	# Bottles	∂ A°	β	C	D		, O	G	_Ca∙ H	tion	5. J.	Hold
12 ROI	Discharg	3e	2.	3-13	09	<i>7</i> 0	water	Hix	1/94	2			1.5	8 78. 250	X	X	X	V	10.000.000	i ioius,
2 g HV	U - 117	J		3-13		00]	18	-								X	+	
3				2 10	'0	00	water	MIX	10		1				X	X	×	X	X	-
4					-	·				-	-		Ì							
5		79. 19.41 A								<u> </u>	ļ								ļ <u>.</u>	
6					1					ļ										
17.6 17.6				***						ļ										
54.4 K. 1					ļ															
8										***************************************										
9		***************************************																		
10																				
Sampler(s) Please Pri Ben Mekg		1/1/2		Shipme	nt Metho	d	Requ	ired Turnard	ound Time: (Check I	Box) 🧽	- I OII	ner i			Re	sults [Due Da	te:	l echnistra de la compania
Relinquished by:	ma o s	Date:	Time:	* 13 m	Receive	d by	<u>) </u>	✓ Std 10 V	VK Days [4 Hour		Section of the sectio			
Relinquished by:	y come	Date: 14/13	/¿	345	-	7 7	poratory);			Notes:			TAT, Di	ssolved	Metal	s Field	Filtere	d		
					L.	1	2 . 5 - 13	091	5.	Coo	ler ID	Coole	r Temp.	QC Pa		(Check		ox Belov		RP CheckList
-ogged by (Laboratory):		Date:	Time:		Checke	f by (Lat	oratory):			33	23.		2000] _		III Std	QC/Rav	y Data	TRI	RP Level IV
	随机 网络克拉克斯克斯克斯加亚克勒 化二甲烷	Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-N																		

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.

Copyright 2011 by ALS Environmental.



Everett, WA +1 425 356 2600

Fort Collins, CO +1 970 490 1511

Holland, MI +1 616 399 6070

Chain of Custody Form

Page 🚶 _of _ coc id: 72328 Houston, TX +1 281 530 5656

Spring City, PA +1 610 948 4903

South Charleston, WV +1 304 356 3168

Salt Lake City, UT +1 801 266 7700 Middletown, PA +1 717 944 5541

York, PA +1 717 505 5280

Environmental					26.00	ALS Project Manager:					r: ALS Work Order #; \3\2\7\8\\									
С	ustomer Informatio	n			Proje	ect Informa	ation				Para			hod P						
Purchase Order			F	Project Na	me R	Discharge	Sampling		A	VOC	(8260)	NW G	31V List	t						
Work Order			Pro	oject Numl	ber 12	8823			В	GRC	(8015	M)								
Company Name	Navajo Refining Con	npany	Bill	To Compa	any Na	vajo Refinin	g Company		С	DRO	(8015	M)								
Send Report To	Robert Combs		23 13 13 44	Invoice A	ittn Ro	bert Combs			D	ORC	(8015	M)								
	501 East Main		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1		W	11 East Main			E	LL S	VOC (E	3270) 1	AM GN	/ List						
Address				Addre	ess				F	Total	Metals	(603(17000)	RORA	8 Lc	১ শেব	Li st	-		
City/State/Zip	Artesia, NM 88211		c	ity/State/	Zip Ar	tesia, NM 8	8211		G	Total Metals (6020/7000) RCRA 8 Long List Dissolved Metals (6020/7000) RCRA 8										
Phone	(575) 748-6733			Phone (575) 748-6733						TDS										
Fax	(575) 746-5421		3.44	Fax (575) 746-5421						Maio	ture (7~~0	nide	,						
e-Mail Address			e-l	Mail Addre	ess	. 4 - 6			ű	Einec	eprint (rav, Shr	n-D ist)	Rad	ر پیدر ن	Anion	s.Cetions	
o.	Sample Description	ing of the English	Dε	ite	Time	Matrix	Pres.	# Bottles		В	C	_D∜	, E	F	G	, H	8 1 0	J	Hold	
The Mu	U-114		2-3	5-13	1130	water	Mix	16							X	X	×	X	Extra Butles	
1 to Mu 2 to Mu	U-115		2-3	-13	1230	face (er Mix	16							X	X	×	X	11	
3							,													
4						•														
5																			,	
6				-																
7																				
8	,																		-,	
9	W. W. S.																			
0					U									9						
Sampler(s) Please Pr	rinte Sign	Marie de la companya		Shipmen	t Method	.R	equired Turnar	ound Time: WK Days	Check	Box)	ં	her		Torus	P	esults	Due Da	te:		
felinquished by:	2001620	Date: 6/4/13	Time:	~	Received by:		✓ Std 10	WK Days	Notes	IK Days	10 Day	TAT.	Dissolv	ed Met	als Fie	ld Filte	red	0.000.000	og og til etti vasti extlik ne	
Relinquished by:	Sergersen	Date:	Time:	بي	Received by	(Laboratory):	3. 09	۰ گا		oler ID	Coole	r Temp	. QC	Package Lev	vel II Sto	I QC		TI [RRP CheckLis	
ogged by (Laboratory):		Date: Time: Checked by (Lat				Laboratory):	oratory):			79.				∃ Lev	vel IV S	W84.6/C	aw Date LP	Ti	RRP Level IV	
Preservative Kev	ative Kev: 1-HCI 2-HNO. 3-H.SO. 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-50							9-5035			4	特质点		OII	ner / EC	D			<u>. </u>	

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.



Everett, WA +1 425 356 2600

Fort Collins, CO +1 970 490 1511

Holland, MI +1 616 399 6070

Chain of Custody Form

__of __

Houston, TX +1 281 530 5656 Spring City, PA +1 610 948 4903

South Charleston, WV +1 304 356 3168

Salt Lake City, UT

York, PA +1 717 505 5280

Middletown, PA +1 717 944 5541 +1 801 265 7700

Enviro	nmental		 	N. 1. N. N. 1. 1 794.	COCID: 7			aggi gasta sita	-1 2009 N		63.0	147					
	Customer Information		F	Project Infor	ALS Projec	t wanager	\$ NO. 92		Pa	ramel		Work		27, 27	Analy	sis	
Purchase Order		Project N	<u> </u>	RO Discharg			A	'VO		O) NW			· · · · · · · ·		, meny		1-107-2-748 A-TARRES (Mr. 1884 1-108 1
Work Order		Project Nu	mber	128823			В	GR	O (801	5M)	***************************************				, <u>, , , , , , , , , , , , , , , , , , ,</u>		CONTRACTOR OF STREET,
Company Name	Navajo Refining Company	Bill To Com	pany	Navajo Refin	ing Company		c	DR	O (801	5M)				***************************************			
Send Report To	Robert Combs	Invoice	Attn	Robert Comi			D	OR	O (801	5M)							
	501 East Main		501 East Main E														***************************************
Address		Ado	ress	ess,					Total Metals (60207000) RORAS LONG LIST								
City/State/Zip	Artesia, NM 88211	City/State	e/Zip	Zip Artesia, NM 86211					Dissolved Metals (6020/7000) RCRA 8								PE-7-2007W44 5VA. Liberton
Phone	(575) 748-6733	P	none	Н	TDS												
Fax	(575) 746-5421		Fax	90 (42) 1 1 1 1 1 1 1 1 1						Radi				•		······································	
e-Mail Address		e-Mail Ado	ress	***************************************			J	Eine	emriol		2/5, 6		askist)	Anio	ns, Ca	hons	Czanid
No.	Sample Description		Tim	e Matri	ix Pres.	# Bottles	A	В	[⊕] C	D.	· E	F	G	H		J	Hold
11 M	W-116	2-3-13	1315	s wat	er MIX	16						X	X	X	X	X	Extra
28 H	W-112	2-4-13	104	- 1 .	er Mix	11	X	X	X	X	X	寒					
/3]
4																	
5																	
6							To Comment										
7							Annual of Annual										
.8:															į		
9				•													
10							A Printing VV and										
Sampler(s) Please Pr		Shipme	nt Method)/	Required Turnal			100		100/ Chr.	ys 🗀] 24 Hoi			Due Da	te:	
Relinguished by 2		Time:	Received			2/4/9	Notes	Z-1-	10 Day	y TAT.	Dissolv	ed Met	als Fiel	d Filter	∍d		
Relinquished by:	Date:	Time:	Regeived	by (Laboratory):		(ler ID		ler Temp	o. <u>ac</u>	Packag	e: (Chec	k One E	3ox Belo		RP CheckLl
Logged by (Leboratory):	Date:	Time:	Checked	by (Laboratory):			30	<u> </u>		(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)		Lev	rei III Sto rei IV SV	QC/Ra			RP Level IV
Preservative Key:	1-HCI 2-HNO ₃ 3-H ₂ SO ₄ 4-N	NaOH ⇒ 5-Na₂S₂C	6-N	aHSO ₄ 7-0	other 8-4°C	9-5035	49.75	J. 1857 By			[3]		er / EDI				

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.

Copyright 2011 by ALS Environmental.



Holland, MI +1 616 399 6070 Everett, WA +1 425 356 2600

Fort Collins, CO +1 970 490 1511

Chain of Custody Form

Houston, TX +1 281 530 5656

Spring City, PA +1 610 948 4903

South Charleston, WV +1 304 356 3168

York, PA

Middletown, PA +1 717 944 5541 Salt Lake City, UT +1 801 266 7700 +1 717 505 5280

coc ID: 72325

Enviro	nmental	ALS Project Manager:				er: ALS Work Order #:											
C	Customer Information		Proje	ct Informati	on				Pai	amet	er/Me	thod	Reque	st for	Analy	sis	
Purchase Order		Project Name	RO	Discharge/Sa	mpling		Α	VO	(8260) NW (3W Lis	ŧ					;
Work Order		Project Number	128	823	NOTE I THE TEXT THE PURPLE WHICH APPLICATE HE AND APPLICATION		В	GR	O (8015	iM)							
Company Name	Navajo Refining Company	Bill To Company	Nav	ajo Refining C	ompany		С	DRO	O (8015	M)				***************************************			AVE TO PERFORM AND ADDRESS OF THE PERFORMANCE AND ADDRESS OF T
Send Report To	Robert Combs	Invoice Attn	Rob	ert Combs			D	QR	O (8015	iM)							
Address	501 East Main	Address	501	East Main			Ε	LL S	SVOC (8270)	NM GV	V List					
Audiess		Address					F	Tota	i Metal	s (602	9 /7000) Reig	** /_	ong	1 35		
City/State/Zip	Artesia, NM 88211	City/State/Zip	Arte	sia, NM 8821	1	TOOLS FITTER OF THE STATE OF TH	G	Dissolved Metals (6020/7000) RCRA 8									
Phone	(575) 748-6733	Phone	one (575) 748-6733						Radium								
Fax	(575) 746-5421	Fax	(575	5) 746-5421	1	Moi	sture		-\	***********							
e-Mail Address		e-Mail Address	Mail Address							(17414)	NG, G	Pav, Si	n Dist)	Catio	o/1≤ ,	Anior	ns Cyanic
No.	Sample Description	Principle of the second	ime	Matrix	Pres.	# Bottles	Α	В	С	D	E	F	G	Н	ા	J	Hold
1 5 M	W-119	2/5/13	<u> </u>	water	Hix	屬门						X	×	X	×	x	Hold Extras
2 of 38 M	N-118	215/13 4	\\ \	wher	Mix	15						X	X	入	X	X	
3																	
4																	
5																	
6																	
7																	
8																	
9	<u> </u>																
10																	
Sampler(s) Please Pr	int & Sign 3	Shipment Met	hod	1980/8687	ired Turnaro ☑ Std 10 W	生的结果用于比较级			OI 2 \	ner VK Day	r gr. s (7) [] 24 Ho		esults C	oue Da	te:	
Relinguished by C	2050 Date 2515	Date Time: Received by										ed Met	als Field	l Filtere	d		
Relinquished by:	Date:	Time: Becei	Beceived by (Laboratory):					ler ID	Cool	r Temp	15 1 mm - 11 mm		e: (Chec		ox Belov		RP CheckList
Logged by (Laboratory):	Date:	Time: Check	ecked by (Laboratory):				3"	14%		i, ž		Lev		QC/Rav			RP Level IV
Preservative Key:	6-NaHSO ₄ 7-Other 8-4°C 9-5035					-	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1				el IV SV er / EDD		•		,		
or on the day the defined hot is the	(1) A MARTIN AND RESTRICT OF THE PROGRESS AND A STATE OF THE PROGRESS AND ADMINISTRATION OF THE PROGRESS AND ADMI	2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-Na ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C															

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.

Copyright 2011 by ALS Environm



10450 Stancliff Rd., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5887

	e fact		,
Pate: 건 CUSTODY SEAL Name: 14/13 Time: 1400			
Name: 14/13 Time: 14/00		Seaf Broken By:	·
Compan Fric Resserses	1, 195	<u> </u>	
ARCADIS O		7-5-13-	

F	Express	Package US Airbill	FedEx Tracking Number	8013	8012	5560	
	rom 112			de la company	100 60	1000	ĺ
9	Date 214/17						į
	Sender's Eyic	Berge	(sen	Phone	281 78	7 1234	/
!	Company ARC	ADIS					
:	Address 292	9 Bc	is par	k S.	21/2	SOO Bept/Floor/Suite/Floor	-
	city thous	4on	Si	tate TX	ZIP)	T\$]	-
2.	Your Internal Billing I	Reference					



10450 Stancliff Rd., Suite 210 Houston, Texas 77099 Jel. +1 281 530 5856 Fax. +1 281 530 5887

CUSTO	OY SEAL

te: dame: Eric Re Seal Broken By:

2-51

		, , , , , , , , , , , , , , , , , , , ,
Fed X. Pack	age \irbill Fedex BDI	L3 7714 1240
	\IrDIII Number	
From 2/4/18		
Sender's T	escer	Phone 2 x 78 7 1 2
Company ARCAT		
Address = 2979	1 Provock	NIA 300
city H 1<12	State	Dept/Floor/Suite/
Your Internal Billing Reference	· · · · · · · · · · · · · · · · · · ·	The state of the s

	그는 사용 美麗 사람들은 사람들이 되었다. 그는 사람들은 사람들은 사람들은 사람들이 되었다. 그는 사람들은 사람들은 사람들은 사람들이 되었다.		
100000000000000000000000000000000000000	Package Fackage US Airbill Tracking BO13 7025 2083	Fair 0215	Reappents Goov
1	From Date 7/5/13	4 Express Package Service • Yo mes NOTE Service order has changed. Ploase select cos	tlocadeax Packages up to 150 lbs. For packages over 150 lbs. use the follow Freder Express Freight US Aubilt.
	Reserved to the second	Next Business Day	2 or 3 Business Days
	Sender's Flore Fhone 281 787-1234	FedEx First Overnight Earkest next business morning delivery to select locations. Friday shipments wall be delivered on Moraley unless SATURDAY Delivery is selected.	FedEx 2Day A.M. Second business morning.* Saturday Delivery NOT evaluable.
	Me and a second		w.
	Company // I \ C I C	FedEx Priority Overnight Next business morning.* Friday shipments will be delivered on Monday unloss SATURDAY Delivery is solocited.	FedEx 2Day Second business attenden." Thursday shipments wat be befored on Monday unloss SATURDAY Detroy's selected.
	Address 2929 (Sc. Call Suit Company Room Dept. Room Suite Room Dept. Room Suite Room	FedEx Standard Overnight Next business afternoon.* Sabarday DeSway NOT available.	FedEx Express Saver Whit hashess day. Saturday Delayory NOT available.
	City Ston State 1 ZIP 77017	5 Packaging *Declared value litrid \$500.	-
2	Your Internal Billing Reference	FedEx Envelope* FedEx Pak*	FedEx FedEx Other
3	To	6 Special Handling and Delivery Sig	nature Options
	Recipients Name CLIENT SERVICES Phone 281 530-5656	SATURDAY Delivery NOT evailable for FedEx Standard Overnight, FedEx 20ay A.	A, or FedEx Express Savet
	Company ALS LABORATORY GROUP	No Signature Required Peckage may be left without chaining a signature for delivery.	Signature Indirect Signature If no one is everable at recipient's eddress, someone et a neighboring oddress, sy sign for defivory. For address, my sign for defivory. For
	HOLD Weekday Fulfishteston address Address to the Section Section Asserts Free Transport Common costs on the Section Asserts Free Transport Common Co	Does this shipment contain dangerous good	residential deliveries only. Fee applies.
	We cannot deliver to P.O. boxes or P.O. ZIP codes. Dept/Floor/Suita/Rosan	One box must be checked. Yes Yes Shaper's Day	daration Dry Ice
	HULD Saturday Felifix bestion address Address Address	No As per attached Shipper's Declaration. Shipper's Declaration not required. Oangerous goods (including dryke) cannot be shipped in FecEx pack or placed in a FedEx Express Drop Box.	— prince 2 p
	Use this line for the HOLD location address or for continuation of your shipping address.	7 Payment Bill to:	
	City HOUSTON State TX ZIP 77099-4338	Enter FedEx Acct N	o. or Credit Card No. below Obtain recip Accl. No
	0455309602	Sender Act No. in Section Recipient	Chird Party . Credit Card Cash/Check
		Total Packages Total Weight	Credit Card Acth

	y Ž.	A .i			
		CUST	ODY S	EAL	
3 4)	ate: 2	5.13	Time:	1100	
jan j	ame:	12 McKen	na	2	 2116117
C	ompany:	MKINEN.	<u>د ۱۰۰۰ - ۲</u>	Fig.	

Our liability is landed to US\$100 unless you declare a higher value. See the current FedEx Service Guide for details.

Hev. Date 2/12 - Part #163134 - @1994-2012 FadEx - PRINTED IN U.S.A. SRS



8013 7025 2083

Fee Dackage Package US Airbill Feeling BOL3 BOL2 5537	NOTE Service order has changed.
1 From Date 2/5//3 Sender's FGC Segel Sen Phone 28/ 787-1284	Second business norm
Address State ZIP TCAZ	Next bused of sample state of the sample state
2 Your Internal Billing Reference 3 To Recipients CLIEST SERVICES Phone 251 530-3656	6 Special Handling and Delivery Signature Options SATURDAY Delivery NOT available for Fredax Signature Overnight. Fredax 2Day A.M., or Fredax Pareness Saver. No Signature Required Pactogo may be left without on the Control of Signature Someope at inclosing saddrest seathers, for each of the Control of Signature and Signa
Company ALS LABORATORY ORDUR Address ADA SO STANDARY ORDUR Address ADA SO STANDARY ORDURA Dept./Floor/Suker/hours Dept./Floor/Suker/hours Address ADA SO STANDARY ORDURA Dept./Floor/Suker/hours Address ADA SO STANDARY ORDURA Dept./Floor/Suker/hours Address ADA SO STANDARY ORDURA Fig. To Code S. REST DEPT. ADA STANDARY ORDURA Fig. To Code S. REST DEPT. ADA STANDARY ORDURA Fig. To Code S. REST DEPT. ADA STANDARY ORDURA Fig. To Code S. REST DEPT. ADA STANDARY ORDURA Fig. To Code S. REST DEPT. ADA STANDARY ORDURA Fig. To Code S. REST DEPT. ADA STANDARY ORDURA Fig. To Code S. REST DEPT. ADA STANDARY ORDURA Fig. To Code S. REST DEPT. ADA STANDARY ORDURA Fig. To Code S. REST DEPT. ADA STANDARY ORDURA Fig. To Code S. REST DEPT. ADA STANDARY ORDURA Fig. To Code S. REST DEPT. ADA STANDARY ORDURA Fig. To Code S. REST DEPT. ADA STANDARY ORDURA Fig. To Code S. REST DEPT. ADA STANDARY ORDURA Fig. To Code S. REST DEPT. ADA STANDARY ORDURA Fig. To Code S. REST DEPT. ADA STANDARY ORDURA Fig. To Code S. REST DEPT. ADA STANDARY ORDURA Fig. To Code S. REST DEPT. ADA STANDARY ORDURA Fig. To Code S. REST DEPT. ADA STANDARY ORDURA FIG. TO CODE STANDARY ORDURA FIG.	Does this shipment contain dangerous groups: One box must be checked. Yes Yes Yes Yes Shipper's Declaration not required. Dry log Ony log, Quin 1945 Dangerous goods Including dry ling learned be shipped in feeter packaging or spaced in a feeter pures. Dup Box. Obtain racip.
We cannot deliver to P.O. botas or the Continuation of your shipping address. Address Use this line for the HOLD location address or for continuation of your shipping address. City O 4 9 5 5 5 0 0 7 7	7 Payment Birt ID. Enter FedEx Anot. No. or Credit Card No. Decision Sender Acct. No. or Credit Card No. Decision Acct. No. or Credit Card Card Card Card Card Card Card Card
	10ur Eablitry in furnited to USS-00 unless you declare a higher value. See the current Fedia Service beidde for declass. Rev. Date 2/12 - Part #153134 + 01994-2012 FedEa - PRINTED IN U.S.A. SRS
8013 8012 5537	

10450 Stancliff Rd., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5887

Na ite: Coi ime:

CUSTODY SEAL

- mpany:

FECEX	NEW Package
Express	US Airbill



Feeting BO22 1536 6851

From Date	4 Express Package Service • To most locations. NOTE: Service order has changed. Please select carefully. To most locations. To most locations. Packages up to 150 lbs. For packages up to 150 lbs.
Sender's Name Phone Phone	Next Business Day 2 or 3 Business Days
Company	FedEx Priority Overnight Next business morning-1 Friedry shipments will be delivered an Monday unless SATURIDAY Delivery is selected. FedEx 2Day Second business aftermoon.* Thursday shipments will be delivered an Monday unless SATURIDAY Delivery is selected. FedEx 2Day Second business aftermoon.* Thursday shipments will be delivered an Manday unless SATURIDAY Delivery is selected.
Address Dept/Poor/Suls/Norm	FedEx Standard Overnight Next business afternoon. Saturday Delivery NOT available. FedEx Express Saver Third business day. Saturday Delivery NOT available.
City State \ X ZIP	5 Packaging *Declared value limit 5000.
Your Internal Billing Reference	FedEx Envelope* FedEx Pak* FedEx FedEx Tube Other
To	6 Special Handling and Delivery Signature Options
Recipients Name Phone 281 530-565	SATURDAY Delivery ROT available for Foots Standard Overnight, Foots 20ay A.M., or Foots Express Saver.
Company AS LOS (TOS)	No Signature Required Proctage may be left without Someone at recipient's address may signate deterry. For applica. Indirect Signature If no one is available at recipient's address address, common at a neighboring address, may sign for deterry.
Address HOLD Weekday Feets location address REQUIRED. NOT available for Feets First Overright.	Does this shipment contain dangerous goods? One box must be checked.
We cannot deliver to P.O. boxes or P.O. ZIP codes. Gept/Floor/Suite/Room HOLD Saturday	No Yes Asper attached Shopper's Declaration Dry Ice Dr
City State ZIP 7	7 Payment Bill to: Sender Sender Obtain recip. Acct. No. or Crodit Card No. below. Acct. No.
8022 1536 6851	Total Packages Total Weight Credit Card Cash/Check Total Packages Total Weight Credit Card Auch The Sability's Inhand to USS 100 unless you declare a Trigher value. See the current FedEn Service Guide for details. Rev. Date 1/12 - Pan #167002 - ©2012 FedEn + PRINTED IN U.S.A. SRF

0200

ALS Environmental 10450 Stancim Rd 53 te 27 Houston, Texas 77095 Tel. 1 281 530 5856 Fax. +1 281 530 5867

CUSTODY SEAL Date: 📆 🔞 Name: Company:

-		
222	Package Surbill Package Bol3 Bol2 5570	for, 1215
1	From Date 2/6/15	4 Express Package Service *To most locations. NOTE: Service order has changed, Please select carefully.
	Sender's Est Sergersen Phone 28/ 787-123-	Next Business Day 2 or 3 Business Feder First Cybrofight Confederate the process promote the professional and processing the process proces
	Company ARCADIS	FedEx Priority Overnight Next business morning "Fidday objected will be defined on Monday unless SATURIDAY Delivery is selected. FedEx 2Day Second business and will be delivered on the deliver
	Address 2929 Var park 1 Doite 200	FedEx Standard Overnight Near business eternoon. Saturday Delivery NOT available. FedEx Express Taird business day. Sururday Delivery N
	City In State TX ZIP 1/047	5 Packaging * Declared value finit SSO. FedEx Envelope* FedEx Pak* FedEx Box
3	Your Internal Billing Reference To	6 Special Handling and Delivery Signature Options
J	Recipients OLIENT SERVICES Phone 28: 530-5655	SATURDAY Delivery NOT available for FedEx Standard Overnight, FedEx 20ay A.M., or FedEx Express Saves
	Company ALS LABSPATORY GROUP	No Signature Required Package may be lett without of obtaining a signature for delivery. Fee applies may sign for delivery. Fee applies.
	Address Address PD. SIP Codes. Hit D Weekday FedSx location address REGISTRO. NOT available for FedSx location address REGISTRO. NOT available for FedSx from the Code FedSx from the C	Does this shipment contain dangerous goods? One box must be checked. Yes — Yes — Onvice
	We cannot deliver to P.U. boxes of P.U. Cir coats. Address Address Use this fine for the HOLO location address or for continuation of your shipping address.	No YES As par stanched As par a tracked
	City State Section address or for contemparation by your simpling duriness. State 3 ZIP 77099-4838	7 Payment Bill to: Enter FedEx Acct. No. or Credit Card No. below. Sender Acct. No. or Credit Card No. below.
		Acct No.in Section A Recipient Third Party C

0455550774



			#* *	/	
•					
•					
				*	
	**************************************	,		٠.	

MUH2

FedEx 2Day A.M.
Second business morning.*
Saturday Delivery NOT available.

FedEx Express Saver
Third business day."
Saturday Delivery NOT available.

Dry ice

*Our Sobiay is limited to USSYOD unless you declare a higher value. See the current FooEx Service Guide ha details.

Rev. Date 2/12 • Peri /153134 • @1994-2012 FedEx • PRINTED IN U.S.A. SRS

Credit Card

FedEx 2Day
Second business afternoon.* Thursday shipmen
will be delivered on Monday unless SATURDAY
Defivery is selected.

☐ FedEx Tube

Cargo Aircraft Only

Indirect Signature
If no one is greatable at recipient's
address, someone et a neighborir
address may sign for delivery. For
residential deliveries only. For app

Obtain recip. Acct. No.

Cash/Check

611

Packages up to 150 lbs. for packages over 150 lbs. use the fedEx Express Freight US Airhill.

, Other



ALS Environmental 10450 Standiff Ed., Suite 210 Houston, Texas 7,7099 Tel. +1 281 530 5656 Fax. +1 281 530 5887

Da	
Nε	
Ct	

CUCTODY OF AL	
CUSTODY SEAL	Seal Broken By:
mo: 1000	Date:
inpany:	



February 28, 2013

Ms. Sonia West ALS Environmental 10450 Stancliff Rd, Suite 210 Houston, TX 77099

Re: ALS Workorder: 13-02-163

Project Name: None Submitted

Project Number: 1302192

Dear Ms. West:

Six water samples were received from ALS Environmental on February 14, 2013. The samples were scheduled for the following analyses:

Radium-226 Radium-228

The results for these analyses are contained in the enclosed report.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental Jeff Kujawa Project Manager

JRK/mic

Enclosure (s): Report

ALS is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

	License or Certification
Accreditation Body	Number
Alaska (AK)	UST-086
Alaska (AK)	CO00078
Arizona (AZ)*	AZ0742
California (CA)	06251CA
Colorado (CO)	CO00078
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO00078
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Maryland (MD)	285
Missouri	175
Nevada (NV)	CO000782008A
New Jersey (NJ)**	CO003
North Dakota (ND)	R-057
Oklahoma	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241-09-1
Utah (UT)	CO00078
Washington	C1280



1302163

Radium-228:

The samples were analyzed for the presence of ²²⁸Ra by low background gas flow proportional counting of ²²⁸Ac, which is the ingrown progeny of ²²⁸Ra, according to the current revision of SOP 724.

All acceptance criteria were met.

Radium-226:

The samples were prepared and analyzed according to the current revision of SOP 783.

All acceptance criteria were met.

Sample Number(s) Cross-Reference Table

OrderNum: 1302163

Client Name: ALS Environmental

Client Project Name: 1302192

Client Project Number:

Client PO Number: 10-1302192

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
1302192-01A (MW-116)	1302163-1		WATER	03-Feb-13	13:15
1302192-02A (MW-119)	1302163-2		WATER	05-Feb-13	13:15
1302192-03A (MW-118)	1302163-3		WATER	05-Feb-13	14:25
1302192-05A (MW-117)	1302163-4		WATER	03-Feb-13	10:00
1302192-06A (MW-114)	1302163-5		WATER	03-Feb-13	11:30
1302192-07A (MW-115)	1302163-6		WATER	03-Feb-13	12:30



Subcontractor:

ALS Environmental

225 Commerce Drive

Fort Collins, CO 80524

erce Drive

TEL: (800) 443-1511

FAX: Acct#: (970) 490-1522

Page 1 of 1

CHAIN-OF-CUSTODY RECORD

Date:

13-Feb-13

COC ID: 13351

Due Date 21-Feb-13

1302163 Salesperson Mala H. Belmonte Customer Information Project Information Parameter/Method Request for Analysis Purchase Order 10-1302192 Project Name 1302192 A Radium 226 228 Sub to ALS Ft. Collins Work Order Project Number В Company Name ALS Group USA, Corp. Bill To Company ALS Group USA, Corp. C Send Report To Sonia West Inv Attn Accounts Payable D Address 10450 Stancliff Rd, Suite 210 Address 10450 Stancliff Rd, Suite 210 Ε F City/State/Zip Houston, Texas 77099-4338 City/State/Zip Houston, Texas 77099-4338 G Phone (281) 530-5656 Phone (281) 530-5656 Н Fax (281) 530-5887 Fax (281) 530-5887 1 eMail Address Sonia.West@alsglobal.com eMail CC J jumoke.lawal@alsglobal.com Sample ID Matrix Collection Date 24hr Bottle A В.: D. F. E. · C G o ∂H 1302192-01A (MW-116) Water 3/Feb/2013 13:15 (2) 1LPHNO3 X (I) 1302192-02A (MW-119) Water 5/Feb/2013 13:15 (2) 1LPHNO3 Χ 10000 10000 1302192-03A (MW-118) Water 5/Feb/2013 14:25 (2) 1LPHNO3 Χ 1302192-05A (MW-117) Water 3/Feb/2013 10:00 (2) 1LPHNO3 X 1302192-06A (MW-114) Water 3/Feb/2013 11:30 (2) 1LPHNO3 X 1302192-07A (MW-115) Water 3/Feb/2013 12:30 (2) 1LPHNO3 Х

Comments: WO 13	02192 - Please analyze for Rad	lium 226/228			
MAR	/ 12 KB /3	PROKY			
Relinguished by:	Date/Time	Received by:	Date/Time	Cooler IDs	Report/QC Level
Relinquished by:	Date/Time	Reclived by: Namai Bri	Date/Time DUQU) 02-1443	_	

26 of 3



ALS Environmental - Fort Collins CONDITION OF SAMPLE UPON RECEIPT FORM

Client: AIS-TX Work	corder No: 130	2163	3	
Project Manager:	Initials: KG			- 13
Does this project require any special handling in addition to standard ALS pr		·•	YES	(NO)
2. Are custody seals on shipping containers intact?	oodarog.	NONE	(VES	NO
3. Are Custody seals on sample containers intact?		NONE	YES	NO
Is there a COC (Chain-of-Custody) present or other representative do	cuments?		(YES	NO
5. Are the COC and bottle labels complete and legible?			YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no.	of samples, no. of			
containers, matrix, requested analyses, etc.)			(YES)	NO
7. Were airbills / shipping documents present and/or removable?	~ `~` 	DROP OFF	(YES)	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excludi	ng volatiles)	N/A	(YES)	NO
9. Are all aqueous non-preserved samples pH 4-9?		(N/A)	YES	NO
10. Is there sufficient sample for the requested analyses?			(YES)	NO
Were all samples placed in the proper containers for the requested and	alyses?	_	YES	NO
12. Are all samples within holding times for the requested analyses?			(YES)	NO
13. Were all sample containers received intact? (not broken or leaking, e	tc.)		(YES)	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx headspace free? Size of bubble: < green pea > green	CN/S, radon) en pea	N/A	YES	NO
15. Do any water samples contain sediment? Amount of sediment: dusting moderate heavy	Amount	N/A	YES	NO
16. Were the samples shipped on ice?		<u></u>	(YES)	NO
10.14.6.0000		(RAD)	(YES)	NO
	r: #2 (#4 [*])	CONLY	(TES)	NO
Cooler #:				
Temperature (°C): 3.2				
No. of custody seals on cooler:				
Acceptance Information External μR/hr reading: / 2				
Background μR/hr reading: 13				
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? (Y		•		
Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO AN	Y QUESTION ABOVE, EX	CEPT#1 A	ND #16.	
·				
		·		
If applicable, was the client contacted? YES / NO (Contact:		_ Date/Tir	me:	
Project Manager Signature / Date: 2	-14-12			
		_		
// *IR Gun #2: Oakton, SN 2992250020 Form 201r24.xls (06/04/2012) *IR Gun #4: Oakton, SN 2372220101				1

Page 1 of

ef: pl/bf/jbs ep: Environmental

Date: 13Feb13 Wgt: 43.47 LBS

SHIPPING: SPECIAL: HANDL ING: 0.00 TOTAL:

93.39 9.34 0.00 102.73

DV:

Sycs: PRIORITY OVERNIGHT TRCK: 4340 2174 2849

1302163

ORIGIN ID: SGRA (281) 530-5856 SHIPPING DEPT ALS LABORATORY GROUP 10450 STANCLIFF SUITE 210 HOUSTON, TX 77098 UNITED STATES US

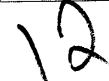
SHIP DATE: 13FEB13 ACTWGT: 43.5 LB CAD: 300130/CAFE2606

BILL SENDER

ROY FRENCH **ALS ENVIRONMENTAL**



225 COMMERCE DRIVE



FORT COLLINS CO 80524 (970) 490- 1511 DEPT: ENVIRONMENTAL



FedEx Express

TRK# 4340 2174 2849

THU - 14 FEB A2 PRIORITY OVERNIGHT

NA FTCA

80524 co-us DEN

21/40 21148-434 MII 2 U4/12



Legal Location:

SAMPLE SUMMARY REPORT

Matrix: WATER

Client: ALS Environmental Date: 28-Feb-13

 Project:
 1302192
 Work Order:
 1302163

 Sample ID:
 1302192-01A (MW-116)
 Lab ID:
 1302163-1

Collection Date: 2/3/2013 13:15 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
RA-226 BY RADON EMANA	TION - METHOD 903.1		PAI 783		Prep Date: 2/15/2 0	013 PrepBy: PJW
Ra-226	ND (+/- 0.17)	U	0.32	pCi/l	NA	2/27/2013 15:18
Carr: BARIUM	88		40-110	%REC	NA	2/27/2013 15:18
RADIUM-228 ANALYSIS BY	GFPC		PAI 724		Prep Date: 2/15/20	D13 PrepBy: EKG
Ra-228	ND (+/- 0.29)	U	0.55	pCi/l	NA	2/21/2013 11:13
Carr: BARIUM	88		40-110	%REC	NA	2/21/2013 11:13

SAMPLE SUMMARY REPORT

Client: ALS Environmental Date: 28-Feb-13

 Project:
 1302192
 Work Order:
 1302163

 Sample ID:
 1302192-02A (MW-119)
 Lab ID:
 1302163-2

Legal Location: Matrix: WATER

Collection Date: 2/5/2013 13:15 Percent Moisture:

Analyses	Result	Qual	Report Limit U	J nits	Dilution Factor	Date Analyzed
RA-226 BY RADON EMANAT	TION - METHOD 903.1		PAI 783		Prep Date: 2/15/2013	PrepBy: PJW
Ra-226	ND (+/- 0.17)	U	0.25	pCi/l	NA	2/27/2013 15:18
Carr: BARIUM	88.2		40-110	%REC	NA	2/27/2013 15:18
RADIUM-228 ANALYSIS BY	GFPC		PAI 724		Prep Date: 2/15/2013	PrepBy: EKG
Ra-228	ND (+/- 0.26)	U	0.52	pCi/l	NA	2/21/2013 11:13
Carr: BARIUM	88.2		40-110	%REC	NA	2/21/2013 11:13

SAMPLE SUMMARY REPORT

Client: ALS Environmental Date: 28-Feb-13

 Project:
 1302192
 Work Order:
 1302163

 Sample ID:
 1302192-03A (MW-118)
 Lab ID:
 1302163-3

Legal Location: Matrix: WATER

Collection Date: 2/5/2013 14:25 Percent Moisture:

Analyses	Result	Qual	Report Limit (U nits	Dilution Factor	Date Analyzed
RA-226 BY RADON EMANATION - ME	THOD 903.1		PAI 783		Prep Date: 2/15/2013	PrepBy: PJW
Ra-226	0.38 (+/- 0.24)	Y1,LT	0.21	pCi/l	NA	2/27/2013 15:18
Carr: BARIUM	101	Y1	40-110	%REC	NA	2/27/2013 15:18
RADIUM-228 ANALYSIS BY GFPC			PAI 724		Prep Date: 2/15/2013	PrepBy: EKG
Ra-228	0.87 (+/- 0.33)	Y1,LT	0.49	pCi/l	NA	2/21/2013 11:13
Carr: BARIUM	101	Y1	40-110	%REC	NA	2/21/2013 11:13

SAMPLE SUMMARY REPORT

Client: ALS Environmental Date: 28-Feb-13

 Project:
 1302192
 Work Order:
 1302163

 Sample ID:
 1302192-05A (MW-117)
 Lab ID:
 1302163-4

Legal Location: Matrix: WATER
Collection Date: 2/3/2013 10:00 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
RA-226 BY RADON EMANA	TION - METHOD 903.1		PAI 783		Prep Date: 2/15/ 2	2013 PrepBy: PJW
Ra-226	0.54 (+/- 0.3)	LT	0.09	pCi/l	NA	2/27/2013 15:18
Carr: BARIUM	95.6		40-110	%REC	NA	2/27/2013 15:18
RADIUM-228 ANALYSIS BY	GFPC		PAI 724		Prep Date: 2/15/ 2	2013 PrepBy: EKG
Ra-228	0.89 (+/- 0.34)	LT	0.48	pCi/l	NA	2/21/2013 11:13
Carr: BARIUM	95.6		40-110	%REC	NA	2/21/2013 11:13

SAMPLE SUMMARY REPORT

Client: ALS Environmental Date: 28-Feb-13

 Project:
 1302192
 Work Order:
 1302163

 Sample ID:
 1302192-06A (MW-114)
 Lab ID:
 1302163-5

Legal Location: Matrix: WATER

Collection Date: 2/3/2013 11:30 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
RA-226 BY RADON EMANATION	ON - METHOD 903.1		PAI 783		Prep Date: 2/15/201 :	B PrepBy: PJW
Ra-226	0.43 (+/- 0.27)	LT	0.23	pCi/l	NA	2/27/2013 15:18
Carr: BARIUM	96		40-110	%REC	NA	2/27/2013 15:18
RADIUM-228 ANALYSIS BY GR	PC .		PAI 724		Prep Date: 2/15/2013	PrepBy: EKG
Ra-228	0.74 (+/- 0.31)	LT	0.49	pCi/l	NA	2/21/2013 11:13
Carr: BARIUM	96		40-110	%REC	NA	2/21/2013 11:13

SAMPLE SUMMARY REPORT

Client: ALS Environmental Date: 28-Feb-13

 Project:
 1302192
 Work Order:
 1302163

 Sample ID:
 1302192-07A (MW-115)
 Lab ID:
 1302163-6

Legal Location: Matrix: WATER

Collection Date: 2/3/2013 12:30 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
RA-226 BY RADON EMANA	TION - METHOD 903.1		PAI 783		Prep Date: 2/15/20	013 PrepBy: PJW
Ra-226	ND (+/- 0.17)	U	0.23	pCi/l	NA	2/27/2013 15:18
Carr: BARIUM	99.4		40-110	%REC	NA	2/27/2013 15:18
RADIUM-228 ANALYSIS BY	GFPC		PAI 724		Prep Date: 2/15/20	PrepBy: EKG
Ra-228	ND (+/- 0.25)	U	0.52	pCi/l	NA	2/21/2013 11:13
Carr: BARIUM	99.4		40-110	%REC	NA	2/21/2013 11:13

SAMPLE SUMMARY REPORT

Client: ALS Environmental Date: 28-Feb-13

Project: 1302192 **Work Order:** 1302163

Sample ID: 1302192-07A (MW-115) Lab ID: 1302163-6
Legal Location: Matrix: WATER

Collection Date: 2/3/2013 12:30 Percent Moisture:

Report Dilution

Analyses Result Qual Limit Units Factor Date Analyzed

Explanation of Qualifiers

Radiochemistry:

U or ND - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

G - Sample density differs by more than 15% of LCS density.

D - DER is greater than Control Limit

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested

MDC.

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).

U or ND - Indicates that the compound was analyzed for but not detected.

E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.

M - Duplicate injection precision was not met.

N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.

Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.

* - Duplicate analysis (relative percent difference) not within control limits.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.

- B Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.
- E Analyte concentration exceeds the upper level of the calibration range.
- J Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).
- A A tentatively identified compound is a suspected aldol-condensation product.
- X The analyte was diluted below an accurate quantitation level.
- * The spike recovery is equal to or outside the control criteria used.
- + The relative percent difference (RPD) equals or exceeds the control criteria.

Diesel Range Organics:

ALS Environmental -- FC
LIMS Version: 6.630

ALS Environmental -- FC

SAMPLE SUMMARY REPORT

Client: ALS Environmental Date: 28-Feb-13

Project: 1302192 **Work Order:** 1302163

Sample ID: 1302192-07A (MW-115) Lab ID: 1302163-6 Legal Location: Matrix: WATER

Collection Date: 2/3/2013 12:30 Percent Moisture:

Report Dilution
Analyses Result Qual Limit Units Factor Date Analyzed

- G A pattern resembling gasoline was detected in this sample.
- D A pattern resembling diesel was detected in this sample.
- M A pattern resembling motor oil was detected in this sample.
- C A pattern resembling crude oil was detected in this sample.
- 4 A pattern resembling JP-4 was detected in this sample.
- 5 A pattern resembling JP-5 was detected in this sample.
- H Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.
- L Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.
- Z This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
- gasoline - JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

ALS Environmental -- FC

LIMS Version: 6.630

ALS Environmental -- FC

Client: ALS Environmental

Work Order: 1302163 **Project:** 1302192

Date: 2/28/2013 8:22:

QC BATCH REPORT

Batch ID: R	RE130215-2-2	Instrument ID:	Alpha Scin		Method:	Ra-226 by	Radon I	Emanation - Me			
LCS	Sample ID: RE13021	15-2				Units: pCi/	Ί	Analys	is Date: 2/	27/2013 1	5:41
Client ID:		Ru	un ID: RE130 2	215-2A				Prep Date: 2/15	5/2013	DF: NA	
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qual
Ra-226		27.7 (+/- 7)	0.2	30		92.3	67-120				P,Y1
Carr: BAF	RIUM	32180		31720		101	40-110				Y1
LCSD	Sample ID: RE13021	15-2				Units: pCi/	Ί	Analys	is Date: 2/	27/2013 1	5:41
Client ID:		Ru	un ID: RE130 2	215-2A				Prep Date: 2/15	5/2013	DF: N	4
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qual
Ra-226		26.1 (+/- 6.7)	0.4	30		87.2	67-120	27.7	0.16	2.13	P,Y1
Carr: BAF	RIUM	32670		31720		103	40-110	32180			Y1
МВ	Sample ID: RE13021	15-2				Units: pCi/	1	Analys	is Date: 2	27/2013 1	5:18
Client ID:		Ru	un ID: RE130 2	215-2A				Prep Date: 2/15	5/2013	DF: N	4
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qual
Ra-226		ND	0.3								U
Carr: BAF	RIUM	30860		31720		97.3	40-110				
The follow	ving samples were ana	lyzed in this bate		302163-1 302163-4		02163-2 02163-5		302163-3 302163-6			

QC BATCH REPORT

Client: ALS Environmental Work Order: 1302163

Project: 1302163

Batch ID: R	RA130215-1-2	Instrument ID:	: LB4100-B		Method:	Radium-2	28 Analy	sis by GFPC			
LCS	Sample ID: RA130215	-1				Units: pCi	l	Analysi	s Date: 2 /	/21/2013 1	1:13
Client ID:		Ru	un ID: RA130	215-1A				Prep Date: 2/15	/2013	DF: N A	A
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qual
Ra-228		11 (+/- 2.6)	0.5	10.19		108	70-130				P,Y1
Carr: BAF	RIUM	32180		31720		101	40-110				Y1
LCSD	Sample ID: RA130215	-1				Units: pCi	1	Analysi	s Date: 2 /	/21/2013 1	1:13
Client ID:		Ru	un ID: RA130	215-1A				Prep Date: 2/15	/2013	DF: N A	A
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qual
Ra-228		10.7 (+/- 2.5)	0.5	10.19		105	70-130	11	0.095	2.13	P,Y1
Carr: BAF	RIUM	32670		31720		103	40-110	32180			Y1
МВ	Sample ID: RA130215	-1				Units: pCi	l	Analysi	s Date: 2 /	/21/2013 1	1:13
Client ID:		Rı	un ID: RA130	215-1A				Prep Date: 2/15	/2013	DF: N A	4
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qual
Ra-228		ND	0.49								U
Carr: BAF	RIUM	30860		31720		97.3	40-110				
The follow	ving samples were analy	zed in this bate		302163-1 302163-4		02163-2 02163-5		302163-3 302163-6			



18-Feb-2013

Robert Combs Navajo Refining Company PO Box 159 Artesia, NM 88211

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

Re: RO Discharge Sampling Work Order: 1302213

Dear Robert,

ALS Environmental received 31 samples on 06-Feb-2013 08:40 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 ÎÎ.

Sonie West

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

Sincerely,

Electronically approved by: Sonia West

Sonia West Project Manager TNI TABORATORY

Certificate No: T104704231-12-10

ALS Environmental

Date: 18-Feb-13

Client: Navajo Refining Company
Project: RO Discharge Sampling

Work Order: 1302213

Work Order Sample Summary

Lab Samp II	Client Sample ID	<u>Matrix</u>	Tag Number	Collection Date	Date Received	Hold
1302213-01	MW-118 (1)	Soil		2/4/2013 09:20	2/6/2013 08:40	
1302213-02	MW-118 (3)	Soil		2/4/2013 09:30	2/6/2013 08:40	
1302213-03	MW-118 (5)	Soil		2/4/2013 10:00	2/6/2013 08:40	
1302213-04	MW-118 (7)	Soil		2/4/2013 09:40	2/6/2013 08:40	
1302213-05	MW-118 (9)	Soil		2/4/2013 10:00	2/6/2013 08:40	
1302213-06	MW-118 (10)	Soil		2/4/2013 10:10	2/6/2013 08:40	
1302213-07	MW-118 (12)	Soil		2/4/2013 14:45	2/6/2013 08:40	
1302213-08	MW-118 (14)	Soil		2/4/2013 14:47	2/6/2013 08:40	
1302213-09	MW-118 (15)	Soil		2/4/2013 14:50	2/6/2013 08:40	
1302213-10	MW-118 (17)	Soil		2/4/2013 14:53	2/6/2013 08:40	
1302213-11	MW-118 (19)	Soil		2/4/2013 14:40	2/6/2013 08:40	
1302213-12	MW-118 (20)	Soil		2/4/2013 14:52	2/6/2013 08:40	
1302213-13	MW-118 (22)	Soil		2/4/2013 14:37	2/6/2013 08:40	
1302213-14	MW-118 (24)	Soil		2/4/2013 14:37	2/6/2013 08:40	
1302213-15	MW-118 (25)	Soil		2/4/2013 14:35	2/6/2013 08:40	
1302213-16	MW-119 (1)	Soil		2/4/2013 11:05	2/6/2013 08:40	
1302213-17	MW-119 (3)	Soil		2/4/2013 11:15	2/6/2013 08:40	
1302213-18	MW-119 (5)	Soil		2/4/2013 11:20	2/6/2013 08:40	
1302213-19	MW-119 (7)	Soil		2/4/2013 11:30	2/6/2013 08:40	
1302213-20	MW-119 (9)	Soil		2/4/2013 11:35	2/6/2013 08:40	
1302213-21	MW-119 (10)	Soil		2/4/2013 11:45	2/6/2013 08:40	
1302213-22	MW-119 (12)	Soil		2/4/2013 16:05	2/6/2013 08:40	
1302213-23	MW-119 (14)	Soil		2/4/2013 16:06	2/6/2013 08:40	
1302213-24	MW-119 (15)	Soil		2/4/2013 16:08	2/6/2013 08:40	
1302213-25	MW-119 (17)	Soil		2/4/2013 16:15	2/6/2013 08:40	
1302213-26	MW-119 (19)	Soil		2/4/2013 16:14	2/6/2013 08:40	
1302213-27	MW-119 (20)	Soil		2/4/2013 16:11	2/6/2013 08:40	
1302213-28	MW-119 (22)	Soil		2/4/2013 16:17	2/6/2013 08:40	
1302213-29	MW-119 (24)	Soil		2/4/2013 16:18	2/6/2013 08:40	
1302213-30	MW-119 (25)	Soil		2/4/2013 16:20	2/6/2013 08:40	
1302213-31	TRIP BLANK 011813-17	Water		2/4/2013	2/6/2013 08:40	

ALS Environmental

Date: 18-Feb-13

Client: Navajo Refining Company
Project: RO Discharge Sampling

Project: RO Discharge Sampling Case Narrative

Work Order: 1302213

Your samples received for Radium 226 and Radium 228 are reported on ALS workorder 1302192.

Your samples MW-118 (15), MW-118 (15), MW-118 (20), MW-118 (25), MW-119 (1), MW-119 (5), MW-119 (10), MW-119 (15) and MW-119 (25) were analyzed for Total Metals 6020 at a dilution due to matrix effects. The lowest possible dilution was performed.

Batch 67688, Total Metals 6020, Sample 1302251-01B: MS/MSD and DUP are for an unrelated sample.

Batch 67741, Semivolatile Organics 8270, Sample 1302175-02B: MS/MSD is for an unrelated sample.

Client: Navajo Refining Company

Project: RO Discharge Sampling **Sample ID:** MW-118 (1)

Collection Date: 2/4/2013 09:20 AM

Work Order: 1302213

Lab ID: 1302213-01

Date: 18-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Meth	nod: SW8015M		Prep: SW35	41 / 2/8/13	Analyst: KMB
TPH (Oil Range)	U		0.67	4.6	mg/Kg-dry	1	2/14/2013 15:16
TPH (Diesel Range)	U		0.67	2.3	mg/Kg-dry	1	2/14/2013 15:16
Surr: 2-Fluorobiphenyl	60.8			60-135	%REC	1	2/14/2013 15:16
GASOLINE RANGE ORGANICS - SW8	015C	Meth	nod: SW8015				Analyst: KKP
Gasoline Range Organics	U		0.027	0.067	mg/Kg-dry	1	2/8/2013 16:02
Surr: 4-Bromofluorobenzene	88.1			70-130	%REC	1	2/8/2013 16:02
MERCURY - SW7471B		Meth	nod: SW7471A		Prep: SW74	71A / 2/13/13	Analyst: OFO
Mercury	40.1		0.37	4.61	μg/Kg-dry	1	2/13/2013 13:58
METALS		Meth	nod: SW6020		Prep: SW30	50A / 2/8/13	Analyst: ALR
Aluminum	14,300		23	117	mg/Kg-dry	100	2/11/2013 19:53
Arsenic	4.08		0.12	0.585	mg/Kg-dry	1	2/8/2013 23:54
Barium	105		0.094	0.585	mg/Kg-dry	1	2/8/2013 23:54
Boron	7.25		3.3	5.85	mg/Kg-dry	2	2/12/2013 18:05
Cadmium	0.353	J	0.058	0.585	mg/Kg-dry	1	2/8/2013 23:54
Calcium	55,400		1,200	5,850	mg/Kg-dry	100	2/11/2013 19:53
Chromium	14.1		0.11	0.585	mg/Kg-dry	1	2/8/2013 23:54
Cobalt	4.33		0.082	0.585	mg/Kg-dry	1	2/8/2013 23:54
Copper	21.3		0.12	0.585	mg/Kg-dry	1	2/8/2013 23:54
Iron	9,280		12	58.5	mg/Kg-dry	1	2/8/2013 23:54
Lead	295		5.8	58.5	mg/Kg-dry	100	2/11/2013 19:53
Manganese	261		12	58.5	mg/Kg-dry	100	2/11/2013 19:53
Molybdenum	0.627		0.18	0.585	mg/Kg-dry	1	2/8/2013 23:54
Nickel	9.10		0.11	0.585	mg/Kg-dry	1	2/8/2013 23:54
Potassium	3,020		15	58.5	mg/Kg-dry	1	2/8/2013 23:54
Selenium	0.652		0.21	0.585	mg/Kg-dry	1	2/8/2013 23:54
Silver	U		0.094	0.585	mg/Kg-dry	1	2/8/2013 23:54
Sodium	152		13	58.5	mg/Kg-dry	1	2/8/2013 23:54
Uranium	U		0.58	0.585	mg/Kg-dry	1	2/8/2013 23:54
Zinc	37.5		0.29	0.585	mg/Kg-dry	1	2/8/2013 23:54
LOW-LEVEL SEMIVOLATILES		Meth	nod: SW8270		Prep: SW35	41 / 2/11/13	Analyst: LG
1-Methylnaphthalene	U		2.1	8.8	μg/Kg-dry	1	2/12/2013 11:33
2-Methylnaphthalene	U		2.1	8.8	μg/Kg-dry	1	2/12/2013 11:33
Benzo(a)pyrene	U		2.1	8.8	μg/Kg-dry	1	2/12/2013 11:33
Naphthalene	U		2.1	8.8	μg/Kg-dry	1	2/12/2013 11:33
Surr: 2,4,6-Tribromophenol	44.7			36-126	%REC	1	2/12/2013 11:33
Surr: 2-Fluorobiphenyl	55.7			43-125	%REC	1	2/12/2013 11:33

Client: Navajo Refining Company
Project: RO Discharge Sampling

Sample ID: MW-118 (1) **Collection Date:** 2/4/2013 09:20 AM

Work Order: 1302213

Lab ID: 1302213-01 **Matrix:** SOIL

Date: 18-Feb-13

Analyses	Result	Qual MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 2-Fluorophenol	54.9		37-125	%REC	1	2/12/2013 11:33
Surr: 4-Terphenyl-d14	68.3		32-125	%REC	1	2/12/2013 11:33
Surr: Nitrobenzene-d5	54.0		37-125	%REC	1	2/12/2013 11:33
Surr: Phenol-d6	54.1		40-125	%REC	1	2/12/2013 11:33
VOLATILES - SW8260C		Method: SW8260				Analyst: WLR
1,1,1-Trichloroethane	U	2.3	6.7	μg/Kg-dry	1	2/8/2013 12:40
1,1,2,2-Tetrachloroethane	U	0.67	6.7	μg/Kg-dry	1	2/8/2013 12:40
1,1,2-Trichloroethane	U	2.7	6.7	μg/Kg-dry	1	2/8/2013 12:40
1,1-Dichloroethane	U	0.67	6.7	μg/Kg-dry	1	2/8/2013 12:40
1,1-Dichloroethene	U	2.0	6.7	μg/Kg-dry	1	2/8/2013 12:40
1,2-Dibromoethane	U	0.94	6.7	μg/Kg-dry	1	2/8/2013 12:40
1,2-Dichloroethane	U	0.81	6.7	μg/Kg-dry	1	2/8/2013 12:40
Benzene	U	0.81	6.7	μg/Kg-dry	1	2/8/2013 12:40
Carbon tetrachloride	U	1.6	6.7	μg/Kg-dry	1	2/8/2013 12:40
Chloroform	U	2.4	6.7	μg/Kg-dry	1	2/8/2013 12:40
Ethylbenzene	U	1.2	6.7	μg/Kg-dry	1	2/8/2013 12:40
Methylene chloride	U	3.4	13	μg/Kg-dry	1	2/8/2013 12:40
Tetrachloroethene	U	1.3	6.7	μg/Kg-dry	1	2/8/2013 12:40
Toluene	U	0.94	6.7	μg/Kg-dry	1	2/8/2013 12:40
Trichloroethene	U	2.2	6.7	μg/Kg-dry	1	2/8/2013 12:40
Vinyl chloride	U	1.3	2.7	μg/Kg-dry	1	2/8/2013 12:40
Xylenes, Total	U	3.5	20	μg/Kg-dry	1	2/8/2013 12:40
Surr: 1,2-Dichloroethane-d4	100		70-128	%REC	1	2/8/2013 12:40
Surr: 4-Bromofluorobenzene	95.6		73-126	%REC	1	2/8/2013 12:40
Surr: Dibromofluoromethane	99.7		71-128	%REC	1	2/8/2013 12:40
Surr: Toluene-d8	99.5		73-127	%REC	1	2/8/2013 12:40
ANIONS - EPA 300.0 (1993)		Method: E300		Prep: E300	/ 2/13/13	Analyst: JKP
Chloride	34.0	2.4	6.08	mg/Kg-dry	1	2/13/2013 18:49
Fluoride	5.27	0.37	1.22	mg/Kg-dry	1	2/13/2013 18:49
Nitrogen, Nitrate (As N)	U	0.37	1.22	mg/Kg-dry	1	2/13/2013 18:49
Nitrogen, Nitrite (As N)	U	0.37	1.22	mg/Kg-dry	1	2/13/2013 18:49
Sulfate	3,100	24	60.8	mg/Kg-dry	10	2/14/2013 12:33
Surr: Selenate (surr)	91.6		85-115	%REC	1	2/13/2013 18:49
Surr: Selenate (surr)	89.7		85-115	%REC	10	2/14/2013 12:33
CYANIDE		Method: SW9014		Prep: SW90	10C / 2/14/13	Analyst: EDG
Cyanide	U	0.75	2.50	mg/Kg-dry	1	2/14/2013 15:00
MOISTURE		Method: SW3550				Analyst: KAH
Percent Moisture	25.7	0.010	0.0100	wt%	1	2/13/2013 14:45

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-118 (3) **Collection Date:** 2/4/2013 09:30 AM

Work Order: 1302213

Lab ID: 1302213-02

Date: 18-Feb-13

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 22.9
 0.010
 0.0100
 wt%
 1
 2/13/2013 14:45

Client: Navajo Refining Company
Project: RO Discharge Sampling

Sample ID: MW-118 (5)

Collection Date: 2/4/2013 10:00 AM

Work Order: 1302213

Lab ID: 1302213-03

Date: 18-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Meth	od: SW7471 A		Prep: SW74	71A / 2/13/13	Analyst: OFO
Mercury	7.39		0.42	5.12	μg/Kg-dry	1	2/13/2013 14:00
METALS		Meth	od: SW6020		Prep: SW30	50A / 2/8/13	Analyst: ALR
Aluminum	8,560		29	143	mg/Kg-dry	100	2/11/2013 19:58
Arsenic	3.53		0.14	0.715	mg/Kg-dry	1	2/8/2013 23:59
Barium	85.6		0.11	0.715	mg/Kg-dry	1	2/8/2013 23:59
Boron	7.21		4.0	7.15	mg/Kg-dry	2	2/12/2013 18:10
Cadmium	0.130	J	0.071	0.715	mg/Kg-dry	1	2/8/2013 23:59
Calcium	115,000		1,400	7,150	mg/Kg-dry	100	2/11/2013 19:58
Chromium	8.08		0.13	0.715	mg/Kg-dry	1	2/8/2013 23:59
Cobalt	2.15		0.10	0.715	mg/Kg-dry	1	2/8/2013 23:59
Copper	3.19		0.14	0.715	mg/Kg-dry	1	2/8/2013 23:59
Iron	5,220		14	71.5	mg/Kg-dry	1	2/8/2013 23:59
Lead	3.67		0.071	0.715	mg/Kg-dry	1	2/8/2013 23:59
Manganese	62.9		0.14	0.715	mg/Kg-dry	1	2/8/2013 23:59
Molybdenum	0.416	J	0.21	0.715	mg/Kg-dry	1	2/8/2013 23:59
Nickel	4.78		0.13	0.715	mg/Kg-dry	1	2/8/2013 23:59
Potassium	1,610		19	71.5	mg/Kg-dry	1	2/8/2013 23:59
Selenium	0.286	J	0.26	0.715	mg/Kg-dry	1	2/8/2013 23:59
Silver	U		0.11	0.715	mg/Kg-dry	1	2/8/2013 23:59
Sodium	248		16	71.5	mg/Kg-dry	1	2/8/2013 23:59
Uranium	0.953		0.71	0.715	mg/Kg-dry	1	2/8/2013 23:59
Zinc	13.5		0.36	0.715	mg/Kg-dry	1	2/8/2013 23:59
ANIONS - EPA 300.0 (1993)		Meth	od: E300		Prep: E300 /	2/13/13	Analyst: JKP
Chloride	56.9		3.1	7.67	mg/Kg-dry	1	2/13/2013 19:04
Fluoride	4.29		0.46	1.53	mg/Kg-dry	1	2/13/2013 19:04
Nitrogen, Nitrate (As N)	U		0.46	1.53	mg/Kg-dry	1	2/13/2013 19:04
Nitrogen, Nitrite (As N)	U		0.46	1.53	mg/Kg-dry	1	2/13/2013 19:04
Sulfate	10,700		31	76.7	mg/Kg-dry	10	2/14/2013 12:47
Surr: Selenate (surr)	91.9			85-115	%REC	1	2/13/2013 19:04
Surr: Selenate (surr)	88.0			85-115	%REC	10	2/14/2013 12:47
CYANIDE		Meth	od: SW9014		Prep: SW90	10C / 2/14/13	Analyst: EDG
Cyanide	U		0.85	2.83	mg/Kg-dry	1	2/14/2013 15:00
MOISTURE		Meth	od: SW3550				Analyst: KAH
Percent Moisture	34.8		0.010	0.0100	wt%	1	2/13/2013 14:45

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-118 (7) **Collection Date:** 2/4/2013 09:40 AM

Work Order: 1302213

Lab ID: 1302213-04

Date: 18-Feb-13

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 29.3
 0.010
 0.0100
 wt%
 1
 2/13/2013 14:45

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302213

 Sample ID: MW-118 (9)
 Lab ID: 1302213-05

Collection Date: 2/4/2013 10:00 AM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 18-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 30.4
 0.010
 0.0100
 wt%
 1
 2/13/2013 14:45

Client: Navajo Refining Company

Project: RO Discharge Sampling **Sample ID:** MW-118 (10)

Collection Date: 2/4/2013 10:10 AM

Work Order: 1302213

Lab ID: 1302213-06

Date: 18-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Meth	od: SW7471A		Prep: SW74	71A / 2/13/13	Analyst: OFO
Mercury	3.51	J	0.41	5.00	μg/Kg-dry	1	2/13/2013 14:02
METALS		Meth	od: SW6020		Prep: SW30	50A / 2/8/13	Analyst: ALR
Aluminum	7,230		25	127	mg/Kg-dry	100	2/11/2013 20:03
Arsenic	2.53		0.13	0.635	mg/Kg-dry	1	2/9/2013 00:04
Barium	84.0		0.10	0.635	mg/Kg-dry	1	2/9/2013 00:04
Boron	4.16	J	3.6	6.35	mg/Kg-dry	2	2/12/2013 18:15
Cadmium	0.172	J	0.064	0.635	mg/Kg-dry	1	2/9/2013 00:04
Calcium	187,000		1,300	6,350	mg/Kg-dry	100	2/11/2013 20:03
Chromium	7.53		0.11	0.635	mg/Kg-dry	1	2/9/2013 00:04
Cobalt	1.81		0.089	0.635	mg/Kg-dry	1	2/9/2013 00:04
Copper	3.38		0.13	0.635	mg/Kg-dry	1	2/9/2013 00:04
Iron	4,430		13	63.5	mg/Kg-dry	1	2/9/2013 00:04
Lead	6.52		0.13	1.27	mg/Kg-dry	2	2/12/2013 00:06
Manganese	98.8		0.13	0.635	mg/Kg-dry	1	2/9/2013 00:04
Molybdenum	0.464	J	0.19	0.635	mg/Kg-dry	1	2/9/2013 00:04
Nickel	4.37		0.11	0.635	mg/Kg-dry	1	2/9/2013 00:04
Potassium	1,530		17	63.5	mg/Kg-dry	1	2/9/2013 00:04
Selenium	0.344	J	0.23	0.635	mg/Kg-dry	1	2/9/2013 00:04
Silver	U		0.10	0.635	mg/Kg-dry	1	2/9/2013 00:04
Sodium	158		14	63.5	mg/Kg-dry	1	2/9/2013 00:04
Uranium	U		0.64	0.635	mg/Kg-dry	1	2/9/2013 00:04
Zinc	13.7		0.32	0.635	mg/Kg-dry	1	2/9/2013 00:04
ANIONS - EPA 300.0 (1993)		Meth	od: E300		Prep: E300 /	2/13/13	Analyst: JKP
Chloride	74.6		2.7	6.83	mg/Kg-dry	1	2/13/2013 19:18
Fluoride	3.80		0.41	1.37	mg/Kg-dry	1	2/13/2013 19:18
Nitrogen, Nitrate (As N)	U		0.41	1.37	mg/Kg-dry	1	2/13/2013 19:18
Nitrogen, Nitrite (As N)	U		0.41	1.37	mg/Kg-dry	1	2/13/2013 19:18
Sulfate	3,020		27	68.3	mg/Kg-dry	10	2/14/2013 13:02
Surr: Selenate (surr)	93.0			85-115	%REC	1	2/13/2013 19:18
Surr: Selenate (surr)	89.3			85-115	%REC	10	2/14/2013 13:02
CYANIDE		Meth	od: SW9014		Prep: SW90	10C / 2/14/13	Analyst: EDG
Cyanide	U		0.80	2.67	mg/Kg-dry	1	2/14/2013 15:00
MOISTURE		Meth	od: SW3550				Analyst: KAH
Percent Moisture	29.3		0.010	0.0100	wt%	1	2/13/2013 14:45

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302213

 Sample ID: MW-118 (12)
 Lab ID: 1302213-07

Collection Date: 2/4/2013 02:45 PM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 18-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 28.9
 0.010
 0.0100
 wt%
 1
 2/13/2013 14:45

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-118 (14) **Collection Date:** 2/4/2013 02:47 PM

Work Order: 1302213

Lab ID: 1302213-08

Date: 18-Feb-13

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 39.4
 0.010
 0.0100
 wt%
 1
 2/13/2013 14:45

Client: Navajo Refining Company
Project: RO Discharge Sampling

Sample ID: MW-118 (15) **Collection Date:** 2/4/2013 02:50 PM

Work Order: 1302213

Lab ID: 1302213-09

Date: 18-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Metl	hod: SW7471	1	Prep: SW74	71A / 2/13/13	Analyst: OFO
Mercury	1.30	J	0.38	4.63	μg/Kg-dry	1	2/13/2013 14:04
METALS		Metl	hod: SW6020		Prep: SW30	50A / 2/8/13	Analyst: ALR
Aluminum	2,930		25	127	mg/Kg-dry	100	2/11/2013 20:08
Arsenic	0.760	J	0.63	3.17	mg/Kg-dry	5	2/12/2013 00:21
Barium	8.93		0.51	3.17	mg/Kg-dry	5	2/12/2013 00:21
Boron	U		8.9	15.8	mg/Kg-dry	5	2/12/2013 18:20
Cadmium	0.335	J	0.32	3.17	mg/Kg-dry	5	2/12/2013 00:21
Calcium	245,000		1,300	6,330	mg/Kg-dry	100	2/11/2013 20:08
Chromium	3.62		0.57	3.17	mg/Kg-dry	5	2/12/2013 00:21
Cobalt	0.487	J	0.44	3.17	mg/Kg-dry	5	2/12/2013 00:21
Copper	U		0.63	3.17	mg/Kg-dry	5	2/12/2013 00:21
Iron	1,620		63	317	mg/Kg-dry	5	2/12/2013 00:21
Lead	2.99	J	0.32	3.17	mg/Kg-dry	5	2/12/2013 00:21
Manganese	36.3		0.63	3.17	mg/Kg-dry	5	2/12/2013 00:21
Molybdenum	U		0.19	0.633	mg/Kg-dry	1	2/9/2013 00:09
Nickel	1.58	J	0.57	3.17	mg/Kg-dry	5	2/12/2013 00:21
Potassium	561		16	63.3	mg/Kg-dry	1	2/9/2013 00:09
Selenium	1.49	J	1.1	3.17	mg/Kg-dry	5	2/12/2013 00:21
Silver	U		0.10	0.633	mg/Kg-dry	1	2/9/2013 00:09
Sodium	90.4		14	63.3	mg/Kg-dry	1	2/9/2013 00:09
Uranium	U		0.63	0.633	mg/Kg-dry	1	2/9/2013 00:09
Zinc	6.21		1.6	3.17	mg/Kg-dry	5	2/12/2013 00:21
ANIONS - EPA 300.0 (1993)		Metl	hod: E300		Prep: E300 /	2/13/13	Analyst: JKP
Chloride	52.0		2.4	6.08	mg/Kg-dry	1	2/13/2013 19:33
Fluoride	8.59		0.36	1.22	mg/Kg-dry	1	2/13/2013 19:33
Nitrogen, Nitrate (As N)	U		0.36	1.22	mg/Kg-dry	1	2/13/2013 19:33
Nitrogen, Nitrite (As N)	U		0.36	1.22	mg/Kg-dry	1	2/13/2013 19:33
Sulfate	777		2.4	6.08	mg/Kg-dry	1	2/13/2013 19:33
Surr: Selenate (surr)	95.6			85-115	%REC	1	2/13/2013 19:33
CYANIDE		Metl	hod: SW9014		Prep: SW90	10C / 2/14/13	Analyst: EDG
Cyanide	U		0.75	2.51	mg/Kg-dry	1	2/14/2013 15:00
MOISTURE		Metl	hod: SW3550				Analyst: KAH
Percent Moisture	27.2		0.010	0.0100	wt%	1	2/13/2013 14:45

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302213

 Sample ID: MW-118 (17)
 Lab ID: 1302213-10

Collection Date: 2/4/2013 02:53 PM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 18-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 30.7
 0.010
 0.0100
 wt%
 1
 2/13/2013 14:45

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-118 (19) **Collection Date:** 2/4/2013 02:40 PM

Work Order: 1302213

Lab ID: 1302213-11

Date: 18-Feb-13

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 28.0
 0.010
 0.0100
 wt%
 1
 2/13/2013 14:45

Client: Navajo Refining Company

Project: RO Discharge Sampling **Sample ID:** MW-118 (20)

Collection Date: 2/4/2013 02:52 PM

Work Order: 1302213

Lab ID: 1302213-12

Date: 18-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Meth	nod: SW7471 A	1	Prep: SW74	71A / 2/13/13	Analyst: OFO
Mercury	0.827	J	0.34	4.13	μg/Kg-dry	1	2/13/2013 14:06
METALS		Meth	nod: SW6020		Prep: SW30	50A / 2/8/13	Analyst: ALR
Aluminum	3,230		24	118	mg/Kg-dry	100	2/11/2013 20:13
Arsenic	1.02	J	0.59	2.94	mg/Kg-dry	5	2/12/2013 00:26
Barium	6.44		0.47	2.94	mg/Kg-dry	5	2/12/2013 00:26
Boron	U		8.2	14.7	mg/Kg-dry	5	2/12/2013 00:26
Cadmium	0.457	J	0.29	2.94	mg/Kg-dry	5	2/12/2013 00:26
Calcium	249,000		1,200	5,880	mg/Kg-dry	100	2/11/2013 20:13
Chromium	3.22		0.53	2.94	mg/Kg-dry	5	2/12/2013 00:26
Cobalt	0.982	J	0.41	2.94	mg/Kg-dry	5	2/12/2013 00:26
Copper	0.614	J	0.59	2.94	mg/Kg-dry	5	2/12/2013 00:26
Iron	1,960		59	294	mg/Kg-dry	5	2/12/2013 00:26
Lead	3.71		0.29	2.94	mg/Kg-dry	5	2/12/2013 00:26
Manganese	58.4		0.59	2.94	mg/Kg-dry	5	2/12/2013 00:26
Molybdenum	U		0.88	2.94	mg/Kg-dry	5	2/12/2013 00:26
Nickel	2.51	J	0.53	2.94	mg/Kg-dry	5	2/12/2013 00:26
Potassium	603		76	294	mg/Kg-dry	5	2/12/2013 00:26
Selenium	1.38	J	1.1	2.94	mg/Kg-dry	5	2/12/2013 00:26
Silver	U		0.47	2.94	mg/Kg-dry	5	2/12/2013 00:26
Sodium	73.1	J	65	294	mg/Kg-dry	5	2/12/2013 00:26
Uranium	U		2.9	2.94	mg/Kg-dry	5	2/12/2013 00:26
Zinc	6.61		1.5	2.94	mg/Kg-dry	5	2/12/2013 00:26
ANIONS - EPA 300.0 (1993)		Meth	nod: E300		Prep: E300 /	2/13/13	Analyst: JKP
Chloride	66.2		2.2	5.49	mg/Kg-dry	1	2/13/2013 19:48
Fluoride	7.71		0.33	1.10	mg/Kg-dry	1	2/13/2013 19:48
Nitrogen, Nitrate (As N)	U		0.33	1.10	mg/Kg-dry	1	2/13/2013 19:48
Nitrogen, Nitrite (As N)	U		0.33	1.10	mg/Kg-dry	1	2/13/2013 19:48
Sulfate	681		2.2	5.49	mg/Kg-dry	1	2/13/2013 19:48
Surr: Selenate (surr)	96.6			85-115	%REC	1	2/13/2013 19:48
CYANIDE		Meth	nod: SW9014		Prep: SW90	10C / 2/14/13	Analyst: EDG
Cyanide	U		0.69	2.29	mg/Kg-dry	1	2/14/2013 15:00
MOISTURE		Meth	nod: SW3550				Analyst: KAH
Percent Moisture	17.9		0.010	0.0100	wt%	1	2/13/2013 14:45

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-118 (22) **Collection Date:** 2/4/2013 02:37 PM

Work Order: 1302213

Lab ID: 1302213-13

Date: 18-Feb-13

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 26.9
 0.010
 0.0100
 wt%
 1
 2/13/2013 14:45

Client: Navajo Refining Company

Project:RO Discharge SamplingWork Order: 1302213Sample ID:MW-118 (24)Lab ID: 1302213-

 Sample ID:
 MW-118 (24)
 Lab ID:
 1302213-14

 Collection Date:
 2/4/2013 02:37 PM
 Matrix:
 SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 18-Feb-13

 MOISTURE
 Method: \$W3550
 Analyst: KAH

 Percent Moisture
 21.7
 0.010
 0.0100
 wt%
 1
 2/13/2013 14:45

Client: Navajo Refining Company

Project: RO Discharge Sampling **Sample ID:** MW-118 (25)

Collection Date: 2/4/2013 02:35 PM

Work Order: 1302213

Lab ID: 1302213-15 **Matrix:** SOIL

Date: 18-Feb-13

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Meth	od: SW8015M		Prep: SW35	41 / 2/8/13	Analyst: KMB
TPH (Oil Range)	U		0.63	4.3	mg/Kg-dry	1	2/11/2013 21:17
TPH (Diesel Range)	U		0.63	2.1	mg/Kg-dry	1	2/11/2013 21:17
Surr: 2-Fluorobiphenyl	60.1			60-135	%REC	1	2/11/2013 21:17
GASOLINE RANGE ORGANICS - SW80150	;	Meth	od: SW8015				Analyst: KKP
Gasoline Range Organics	U		0.025	0.063	mg/Kg-dry	1	2/8/2013 16:21
Surr: 4-Bromofluorobenzene	91.9			70-130	%REC	1	2/8/2013 16:21
MERCURY - SW7471B		Meth	od: SW7471A		Prep: SW74	71A / 2/13/13	Analyst: OFO
Mercury	2.80	J	0.34	4.23	μg/Kg-dry	1	2/13/2013 14:08
METALS		Meth	od: SW6020		Prep: SW30	50A / 2/8/13	Analyst: ALR
Aluminum	9,540		24	119	mg/Kg-dry	100	2/11/2013 20:17
Arsenic	3.21		0.24	1.19	mg/Kg-dry	2	2/12/2013 00:30
Barium	32.6		0.19	1.19	mg/Kg-dry	2	2/12/2013 00:30
Boron	U		3.3	5.95	mg/Kg-dry	2	2/12/2013 18:25
Cadmium	0.220	J	0.12	1.19	mg/Kg-dry	2	2/12/2013 00:30
Calcium	99,200		1,200	5,950	mg/Kg-dry	100	2/11/2013 20:17
Chromium	9.08		0.21	1.19	mg/Kg-dry	2	2/12/2013 00:30
Cobalt	2.15		0.17	1.19	mg/Kg-dry	2	2/12/2013 00:30
Copper	4.53		0.24	1.19	mg/Kg-dry	2	2/12/2013 00:30
Iron	7,200		24	119	mg/Kg-dry	2	2/12/2013 00:30
Lead	4.81		0.12	1.19	mg/Kg-dry	2	2/12/2013 00:30
Manganese	95.7		0.24	1.19	mg/Kg-dry	2	2/12/2013 00:30
Molybdenum	0.545	J	0.36	1.19	mg/Kg-dry	2	2/12/2013 00:30
Nickel	7.10		0.21	1.19	mg/Kg-dry	2	2/12/2013 00:30
Potassium	1,740		31	119	mg/Kg-dry	2	2/12/2013 00:30
Selenium	0.724	J	0.43	1.19	mg/Kg-dry	2	2/12/2013 00:30
Silver	U		0.19	1.19	mg/Kg-dry	2	2/12/2013 00:30
Sodium	226		26	119	mg/Kg-dry	2	2/12/2013 00:30
Uranium	U		1.2	1.19	mg/Kg-dry	2	2/12/2013 00:30
Zinc	22.8		0.59	1.19	mg/Kg-dry	2	2/12/2013 00:30
LOW-LEVEL SEMIVOLATILES		Meth	od: SW8270		Prep: SW35	41 / 2/11/13	Analyst: LG
1-Methylnaphthalene	U		2.0	8.3	μg/Kg-dry	1	2/12/2013 11:53
2-Methylnaphthalene	U		2.0	8.3	μg/Kg-dry	1	2/12/2013 11:53
Benzo(a)pyrene	2.6	J	2.0	8.3	μg/Kg-dry	1	2/12/2013 11:53
Naphthalene	U		2.0	8.3	μg/Kg-dry	1	2/12/2013 11:53
Surr: 2,4,6-Tribromophenol	69.2			36-126	%REC	1	2/12/2013 11:53
Surr: 2-Fluorobiphenyl	76.3			43-125	%REC	1	2/12/2013 11:53

Client: Navajo Refining Company
Project: RO Discharge Sampling

Sample ID: MW-118 (25)

Collection Date: 2/4/2013 02:35 PM

Work Order: 1302213

Lab ID: 1302213-15

Date: 18-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 2-Fluorophenol	62.6			37-125	%REC	1	2/12/2013 11:53
Surr: 4-Terphenyl-d14	93.7			32-125	%REC	1	2/12/2013 11:53
Surr: Nitrobenzene-d5	74.3			37-125	%REC	1	2/12/2013 11:53
Surr: Phenol-d6	69.9			40-125	%REC	1	2/12/2013 11:53
VOLATILES - SW8260C		Meth	nod: SW8260				Analyst: WLR
1,1,1-Trichloroethane	U		2.2	6.3	μg/Kg-dry	1	2/8/2013 14:11
1,1,2,2-Tetrachloroethane	U		0.63	6.3	μg/Kg-dry	1	2/8/2013 14:11
1,1,2-Trichloroethane	U		2.5	6.3	μg/Kg-dry	1	2/8/2013 14:11
1,1-Dichloroethane	U		0.63	6.3	μg/Kg-dry	1	2/8/2013 14:11
1,1-Dichloroethene	U		1.9	6.3	μg/Kg-dry	1	2/8/2013 14:11
1,2-Dibromoethane	U		0.89	6.3	μg/Kg-dry	1	2/8/2013 14:11
1,2-Dichloroethane	U		0.76	6.3	μg/Kg-dry	1	2/8/2013 14:11
Benzene	U		0.76	6.3	μg/Kg-dry	1	2/8/2013 14:11
Carbon tetrachloride	U		1.5	6.3	μg/Kg-dry	1	2/8/2013 14:11
Chloroform	U		2.3	6.3	μg/Kg-dry	1	2/8/2013 14:11
Ethylbenzene	U		1.1	6.3	μg/Kg-dry	1	2/8/2013 14:11
Methylene chloride	U		3.2	13	μg/Kg-dry	1	2/8/2013 14:11
Tetrachloroethene	U		1.3	6.3	μg/Kg-dry	1	2/8/2013 14:11
Toluene	U		0.89	6.3	μg/Kg-dry	1	2/8/2013 14:11
Trichloroethene	U		2.0	6.3	μg/Kg-dry	1	2/8/2013 14:11
Vinyl chloride	U		1.3	2.5	μg/Kg-dry	1	2/8/2013 14:11
Xylenes, Total	U		3.3	19	μg/Kg-dry	1	2/8/2013 14:11
Surr: 1,2-Dichloroethane-d4	98.8			70-128	%REC	1	2/8/2013 14:11
Surr: 4-Bromofluorobenzene	94.5			73-126	%REC	1	2/8/2013 14:11
Surr: Dibromofluoromethane	100			71-128	%REC	1	2/8/2013 14:11
Surr: Toluene-d8	97.6			73-127	%REC	1	2/8/2013 14:11
MOISTURE		Meth	nod: SW3550				Analyst: KAH
Percent Moisture	21.0		0.010	0.0100	wt%	1	2/13/2013 14:45

Client: Navajo Refining Company

Project: RO Discharge Sampling **Sample ID:** MW-119 (1)

Collection Date: 2/4/2013 11:05 AM

Work Order: 1302213

Lab ID: 1302213-16

Date: 18-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Met	hod: SW8015M		Prep: SW35	41 / 2/8/13	Analyst: KMB
TPH (Oil Range)	1.1	J	0.64	4.4	mg/Kg-dry	1	2/14/2013 15:40
TPH (Diesel Range)	U		0.64	2.2	mg/Kg-dry	1	2/14/2013 15:40
Surr: 2-Fluorobiphenyl	60.1			60-135	%REC	1	2/14/2013 15:40
GASOLINE RANGE ORGANICS - SW807	15C	Met	hod: SW8015				Analyst: KKP
Gasoline Range Organics	U		0.026	0.064	mg/Kg-dry	1	2/8/2013 16:40
Surr: 4-Bromofluorobenzene	89.9			70-130	%REC	1	2/8/2013 16:40
MERCURY - SW7471B		Met	hod: SW7471A		Prep: SW74	71A / 2/13/13	Analyst: OFO
Mercury	20.7		0.35	4.36	μg/Kg-dry	1	2/13/2013 14:10
METALS		Met	hod: SW6020		Prep: SW30	50A / 2/8/13	Analyst: ALR
Aluminum	13,800		24	119	mg/Kg-dry	100	2/11/2013 20:32
Arsenic	3.39		0.24	1.19	mg/Kg-dry	2	2/12/2013 00:40
Barium	89.9		0.19	1.19	mg/Kg-dry	2	2/12/2013 00:40
Boron	6.94		3.3	5.94	mg/Kg-dry	2	2/12/2013 18:30
Cadmium	0.483	J	0.12	1.19	mg/Kg-dry	2	2/12/2013 00:40
Calcium	77,800		1,200	5,940	mg/Kg-dry	100	2/11/2013 20:32
Chromium	13.0		0.21	1.19	mg/Kg-dry	2	2/12/2013 00:40
Cobalt	4.37		0.17	1.19	mg/Kg-dry	2	2/12/2013 00:40
Copper	12.1		0.24	1.19	mg/Kg-dry	2	2/12/2013 00:40
Iron	8,910		24	119	mg/Kg-dry	2	2/12/2013 00:40
Lead	61.0		0.12	1.19	mg/Kg-dry	2	2/12/2013 00:40
Manganese	131		0.24	1.19	mg/Kg-dry	2	2/12/2013 00:40
Molybdenum	0.593	J	0.36	1.19	mg/Kg-dry	2	2/12/2013 00:40
Nickel	9.34		0.21	1.19	mg/Kg-dry	2	2/12/2013 00:40
Potassium	3,310		31	119	mg/Kg-dry	2	2/12/2013 00:40
Selenium	1.18	J	0.43	1.19	mg/Kg-dry	2	2/12/2013 00:40
Silver	U		0.19	1.19	mg/Kg-dry	2	2/12/2013 00:40
Sodium	149		26	119	mg/Kg-dry	2	2/12/2013 00:40
Uranium	U		1.2	1.19	mg/Kg-dry	2	2/12/2013 00:40
Zinc	56.8		0.59	1.19	mg/Kg-dry	2	2/12/2013 00:40
LOW-LEVEL SEMIVOLATILES		Met	hod: SW8270		Prep: SW35	41 / 2/11/13	Analyst: LG
1-Methylnaphthalene	U		2.1	8.5	μg/Kg-dry	1	2/12/2013 15:34
2-Methylnaphthalene	U		2.1	8.5	μg/Kg-dry	1	2/12/2013 15:34
Benzo(a)pyrene	U		2.1	8.5	μg/Kg-dry	1	2/12/2013 15:34
Naphthalene	U		2.1	8.5	μg/Kg-dry	1	2/12/2013 15:34
Surr: 2,4,6-Tribromophenol	45.6			36-126	%REC	1	2/12/2013 15:34
Surr: 2-Fluorobiphenyl	48.1			43-125	%REC	1	2/12/2013 15:34

Client: Navajo Refining Company
Project: RO Discharge Sampling

Sample ID: MW-119 (1)

Collection Date: 2/4/2013 11:05 AM

Work Order: 1302213

Lab ID: 1302213-16

Date: 18-Feb-13

Matrix: SOIL

Analyses	Result	Qual MI	Report DL Limit	Units	Dilution Factor	Date Analyzed
Surr: 2-Fluorophenol	41.4		37-125	%REC	1	2/12/2013 15:34
Surr: 4-Terphenyl-d14	74.6		32-125	%REC	1	2/12/2013 15:34
Surr: Nitrobenzene-d5	45.7		37-125	%REC	1	2/12/2013 15:34
Surr: Phenol-d6	43.2		40-125	%REC	1	2/12/2013 15:34
VOLATILES - SW8260C		Method: SW	8260			Analyst: WLR
1,1,1-Trichloroethane	U		2.2 6.4	μg/Kg-dry	1	2/8/2013 14:34
1,1,2,2-Tetrachloroethane	U	(0.64 6.4	μg/Kg-dry	1	2/8/2013 14:34
1,1,2-Trichloroethane	U		2.6 6.4	μg/Kg-dry	1	2/8/2013 14:34
1,1-Dichloroethane	U	(0.64 6.4	μg/Kg-dry	1	2/8/2013 14:34
1,1-Dichloroethene	U		1.9 6.4	μg/Kg-dry	1	2/8/2013 14:34
1,2-Dibromoethane	U	(0.90 6.4	μg/Kg-dry	1	2/8/2013 14:34
1,2-Dichloroethane	U	(0.77 6.4	μg/Kg-dry	1	2/8/2013 14:34
Benzene	U	(0.77 6.4	μg/Kg-dry	1	2/8/2013 14:34
Carbon tetrachloride	U		1.5 6.4	μg/Kg-dry	1	2/8/2013 14:34
Chloroform	U		2.3 6.4	μg/Kg-dry	1	2/8/2013 14:34
Ethylbenzene	U		1.2 6.4	μg/Kg-dry	1	2/8/2013 14:34
Methylene chloride	U		3.2 13	μg/Kg-dry	1	2/8/2013 14:34
Tetrachloroethene	U		1.3 6.4	μg/Kg-dry	1	2/8/2013 14:34
Toluene	U	(0.90 6.4	μg/Kg-dry	1	2/8/2013 14:34
Trichloroethene	U		2.1 6.4	μg/Kg-dry	1	2/8/2013 14:34
Vinyl chloride	U		1.3 2.6	μg/Kg-dry	1	2/8/2013 14:34
Xylenes, Total	U		3.3 19	μg/Kg-dry	1	2/8/2013 14:34
Surr: 1,2-Dichloroethane-d4	99.9		70-128	%REC	1	2/8/2013 14:34
Surr: 4-Bromofluorobenzene	94.7		73-126	%REC	1	2/8/2013 14:34
Surr: Dibromofluoromethane	99.6		71-128	%REC	1	2/8/2013 14:34
Surr: Toluene-d8	98.5		73-127	%REC	1	2/8/2013 14:34
MOISTURE		Method: SW	3550			Analyst: KAH
Percent Moisture	22.3	0.	010 0.0100	wt%	1	2/13/2013 14:45

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-119 (3) **Collection Date:** 2/4/2013 11:15 AM

Work Order: 1302213

Lab ID: 1302213-17

Date: 18-Feb-13

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 22.9
 0.010
 0.0100
 wt%
 1
 2/13/2013 14:45

Client: Navajo Refining Company
Project: RO Discharge Sampling

Sample ID: MW-119 (5)

Collection Date: 2/4/2013 11:20 AM

Work Order: 1302213

Lab ID: 1302213-18

Date: 18-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed	
MERCURY - SW7471B		Meth	nod: SW7471A		Prep: SW7471A / 2/13/13		Analyst: OFO	
Mercury	7.31		0.37	4.50	μg/Kg-dry	1	2/13/2013 13:46	
METALS		Meth	nod: SW6020	W6020 Prep: SW3050A / 2/8/13		50A / 2/8/13	Analyst: ALR	
Aluminum	13,300		22	109	mg/Kg-dry	100	2/11/2013 20:37	
Arsenic	4.21		0.22	1.09	mg/Kg-dry	2	2/12/2013 00:45	
Barium	108		0.17	1.09	mg/Kg-dry	2	2/12/2013 00:45	
Boron	5.63		3.0	5.43	mg/Kg-dry	2	2/12/2013 18:35	
Cadmium	0.295	J	0.11	1.09	mg/Kg-dry	2	2/12/2013 00:45	
Calcium	103,000		1,100	5,430	mg/Kg-dry	100	2/11/2013 20:37	
Chromium	11.1		0.20	1.09	mg/Kg-dry	2	2/12/2013 00:45	
Cobalt	3.77		0.15	1.09	mg/Kg-dry	2	2/12/2013 00:45	
Copper	5.81		0.22	1.09	mg/Kg-dry	2	2/12/2013 00:45	
Iron	8,220		22	109	mg/Kg-dry	2	2/12/2013 00:45	
Lead	6.75		0.11	1.09	mg/Kg-dry	2	2/12/2013 00:45	
Manganese	204		0.22	1.09	mg/Kg-dry	2	2/12/2013 00:45	
Molybdenum	0.743	J	0.33	1.09	mg/Kg-dry	2	2/12/2013 00:45	
Nickel	8.08		0.20	1.09	mg/Kg-dry	2	2/12/2013 00:45	
Potassium	2,680		28	109	mg/Kg-dry	2	2/12/2013 00:45	
Selenium	0.895	J	0.39	1.09	mg/Kg-dry	2	2/12/2013 00:45	
Silver	U		0.17	1.09	mg/Kg-dry	2	2/12/2013 00:45	
Sodium	131		24	109	mg/Kg-dry	2	2/12/2013 00:45	
Uranium	U		1.1	1.09	mg/Kg-dry	2	2/12/2013 00:45	
Zinc	27.1		0.54	1.09	mg/Kg-dry	2	2/12/2013 00:45	
ANIONS - EPA 300.0 (1993)		Meth	nod: E300		Prep: E300 / 2/13/13		Analyst: JKP	
Chloride	29.2		2.4	6.06	mg/Kg-dry	1	2/13/2013 20:02	
Fluoride	12.3		0.36	1.21	mg/Kg-dry	1	2/13/2013 20:02	
Nitrogen, Nitrate (As N)	U		0.36	1.21	mg/Kg-dry	1	2/13/2013 20:02	
Nitrogen, Nitrite (As N)	U		0.36	1.21	mg/Kg-dry	1	2/13/2013 20:02	
Sulfate	1,680		24	60.6	mg/Kg-dry	10	2/14/2013 13:17	
Surr: Selenate (surr)	95.3			85-115	%REC	1	2/13/2013 20:02	
Surr: Selenate (surr)	90.2			85-115	%REC	10	2/14/2013 13:17	
CYANIDE		Method: SW9014		Prep: SW9010C / 2/14/13		Analyst: EDG		
Cyanide	U		0.71	2.36	mg/Kg-dry	1	2/14/2013 15:00	
MOISTURE		Meth	nod: SW3550				Analyst: KAH	
Percent Moisture	23.0		0.010	0.0100	wt%	1	2/13/2013 14:45	

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-119 (7) **Collection Date:** 2/4/2013 11:30 AM

Work Order: 1302213

Lab ID: 1302213-19

Date: 18-Feb-13

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

 MOISTURE
 Method: \$W3550
 Analyst: KAH

 Percent Moisture
 24.4
 0.010
 0.0100
 wt%
 1
 2/13/2013 14:45

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302213

 Sample ID: MW-119 (9)
 Lab ID: 1302213-20

Collection Date: 2/4/2013 11:35 AM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 18-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 17.9
 0.010
 0.0100
 wt%
 1
 2/13/2013 14:45

Client: Navajo Refining Company

Project: RO Discharge Sampling **Sample ID:** MW-119 (10)

Collection Date: 2/4/2013 11:45 AM

Work Order: 1302213 Lab ID: 1302213-21

Matrix: SOIL

Date: 18-Feb-13

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Meth	od: SW7471A		Prep: SW74	71A / 2/13/13	Analyst: OFO
Mercury	9.12		0.38	4.69	μg/Kg-dry	1	2/13/2013 14:12
METALS		Method: SW6020		Prep: SW30	50A / 2/8/13	Analyst: ALR	
Aluminum	9,390		25	126	mg/Kg-dry	100	2/11/2013 20:41
Arsenic	6.34		0.25	1.26	mg/Kg-dry	2	2/12/2013 00:49
Barium	50.7		0.20	1.26	mg/Kg-dry	2	2/12/2013 00:49
Boron	6.02	J	3.5	6.30	mg/Kg-dry	2	2/12/2013 18:40
Cadmium	0.167	J	0.13	1.26	mg/Kg-dry	2	2/12/2013 00:49
Calcium	89,200		1,300	6,300	mg/Kg-dry	100	2/11/2013 20:41
Chromium	9.37		0.23	1.26	mg/Kg-dry	2	2/12/2013 00:49
Cobalt	3.84		0.18	1.26	mg/Kg-dry	2	2/12/2013 00:49
Copper	4.42		0.25	1.26	mg/Kg-dry	2	2/12/2013 00:49
Iron	7,850		25	126	mg/Kg-dry	2	2/12/2013 00:49
Lead	6.14		0.13	1.26	mg/Kg-dry	2	2/12/2013 00:49
Manganese	252		0.25	1.26	mg/Kg-dry	2	2/12/2013 00:49
Molybdenum	0.858	J	0.38	1.26	mg/Kg-dry	2	2/12/2013 00:49
Nickel	9.28		0.23	1.26	mg/Kg-dry	2	2/12/2013 00:49
Potassium	2,500		33	126	mg/Kg-dry	2	2/12/2013 00:49
Selenium	0.644	J	0.45	1.26	mg/Kg-dry	2	2/12/2013 00:49
Silver	U		0.20	1.26	mg/Kg-dry	2	2/12/2013 00:49
Sodium	134		28	126	mg/Kg-dry	2	2/12/2013 00:49
Uranium	U		1.3	1.26	mg/Kg-dry	2	2/12/2013 00:49
Zinc	21.7		0.63	1.26	mg/Kg-dry	2	2/12/2013 00:49
ANIONS - EPA 300.0 (1993)		Method: E300		Prep: E300 / 2/13/13		Analyst: JKP	
Chloride	22.6		2.4	6.07	mg/Kg-dry	1	2/13/2013 20:17
Fluoride	5.94		0.36	1.21	mg/Kg-dry	1	2/13/2013 20:17
Nitrogen, Nitrate (As N)	U		0.36	1.21	mg/Kg-dry	1	2/13/2013 20:17
Nitrogen, Nitrite (As N)	U		0.36	1.21	mg/Kg-dry	1	2/13/2013 20:17
Sulfate	1,080		2.4	6.07	mg/Kg-dry	1	2/13/2013 20:17
Surr: Selenate (surr)	93.5			85-115	%REC	1	2/13/2013 20:17
CYANIDE		Meth	od: SW9014		Prep: SW90	10C / 2/14/13	Analyst: EDG
Cyanide	U		0.77	2.58	mg/Kg-dry	1	2/14/2013 15:00
MOISTURE		Meth	od: SW3550				Analyst: KAH
Percent Moisture	24.8		0.010	0.0100	wt%	1	2/13/2013 15:25

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-119 (12)

Collection Date: 2/4/2013 04:05 PM

Motrix: SOII

Collection Date: 2/4/2013 04:05 PM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 18-Feb-13

Work Order: 1302213

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 14.7
 0.010
 0.0100
 wt%
 1
 2/13/2013 15:25

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302213

 Sample ID: MW-119 (14)
 Lab ID: 1302213-23

Collection Date: 2/4/2013 04:06 PM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 18-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 15.2
 0.010
 0.0100
 wt%
 1
 2/13/2013 15:25

Client: Navajo Refining Company

Project: RO Discharge Sampling
Sample ID: MW-119 (15)

Collection Date: 2/4/2013 04:08 PM

Work Order: 1302213

Date: 18-Feb-13

Lab ID: 1302213-24

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Met	hod: SW7471	\	Prep: SW74	71A / 2/13/13	Analyst: OFO
Mercury	6.11		0.37	4.62	μg/Kg-dry	1	2/13/2013 14:14
METALS		Method: SW6020		Prep: SW30	50A / 2/8/13	Analyst: ALR	
Aluminum	5,700		27	134	mg/Kg-dry	100	2/11/2013 20:46
Arsenic	2.98	J	0.67	3.34	mg/Kg-dry	5	2/12/2013 01:04
Barium	47.3		0.53	3.34	mg/Kg-dry	5	2/12/2013 01:04
Boron	11.9	J	9.3	16.7	mg/Kg-dry	5	2/12/2013 01:04
Cadmium	U		0.33	3.34	mg/Kg-dry	5	2/12/2013 01:04
Calcium	246,000		1,300	6,680	mg/Kg-dry	100	2/11/2013 20:46
Chromium	4.79		0.60	3.34	mg/Kg-dry	5	2/12/2013 01:04
Cobalt	2.05	J	0.47	3.34	mg/Kg-dry	5	2/12/2013 01:04
Copper	2.39	J	0.67	3.34	mg/Kg-dry	5	2/12/2013 01:04
Iron	4,080		67	334	mg/Kg-dry	5	2/12/2013 01:04
Lead	2.84	J	0.33	3.34	mg/Kg-dry	5	2/12/2013 01:04
Manganese	523		0.67	3.34	mg/Kg-dry	5	2/12/2013 01:04
Molybdenum	2.16	J	1.0	3.34	mg/Kg-dry	5	2/12/2013 01:04
Nickel	8.56		0.60	3.34	mg/Kg-dry	5	2/12/2013 01:04
Potassium	1,280		87	334	mg/Kg-dry	5	2/12/2013 01:04
Selenium	1.32	J	1.2	3.34	mg/Kg-dry	5	2/12/2013 01:04
Silver	U		0.53	3.34	mg/Kg-dry	5	2/12/2013 01:04
Sodium	U		73	334	mg/Kg-dry	5	2/12/2013 01:04
Uranium	U		3.3	3.34	mg/Kg-dry	5	2/12/2013 01:04
Zinc	11.8		1.7	3.34	mg/Kg-dry	5	2/12/2013 01:04
ANIONS - EPA 300.0 (1993)		Method: E300		Prep: E300 / 2/13/13		Analyst: JKP	
Chloride	18.9		2.6	6.39	mg/Kg-dry	1	2/13/2013 20:31
Fluoride	5.87		0.38	1.28	mg/Kg-dry	1	2/13/2013 20:31
Nitrogen, Nitrate (As N)	U		0.38	1.28	mg/Kg-dry	1	2/13/2013 20:31
Nitrogen, Nitrite (As N)	U		0.38	1.28	mg/Kg-dry	1	2/13/2013 20:31
Sulfate	1,310		2.6	6.39	mg/Kg-dry	1	2/13/2013 20:31
Surr: Selenate (surr)	93.6			85-115	%REC	1	2/13/2013 20:31
CYANIDE		Metl	hod: SW9014		Prep: SW90	10C / 2/14/13	Analyst: EDG
Cyanide	U		0.77	2.58	mg/Kg-dry	1	2/14/2013 15:00
MOISTURE		Met	hod: SW3550				Analyst: KAH
Percent Moisture	26.0		0.010	0.0100	wt%	1	2/13/2013 15:25

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-119 (17) **Collection Date:** 2/4/2013 04:15 PM

Work Order: 1302213

Lab ID: 1302213-25

Date: 18-Feb-13

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

 MOISTURE
 Method: \$W3550
 Analyst: KAH

 Percent Moisture
 22.8
 0.010
 0.0100
 wt%
 1
 2/13/2013 15:25

Client: Navajo Refining Company

Project: RO Discharge Sampling

Sample ID: MW-119 (19) **Collection Date:** 2/4/2013 04:14 PM

Work Order: 1302213

Lab ID: 1302213-26

Date: 18-Feb-13

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 22.0
 0.010
 0.0100
 wt%
 1
 2/13/2013 15:25

Client: Navajo Refining Company

Project: RO Discharge Sampling **Sample ID:** MW-119 (20)

Collection Date: 2/4/2013 04:11 PM

Work Order: 1302213

Lab ID: 1302213-27

Date: 18-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Meth	od: SW7471 A	1	Prep: SW74	71A / 2/13/13	Analyst: OFO
Mercury	5.01		0.36	4.39	μg/Kg-dry	1	2/13/2013 14:16
METALS		Method: SW6020		Prep: SW30	50A / 2/8/13	Analyst: ALR	
Aluminum	10,300		24	120	mg/Kg-dry	100	2/11/2013 20:51
Arsenic	2.80		0.12	0.599	mg/Kg-dry	1	2/12/2013 01:08
Barium	208		0.096	0.599	mg/Kg-dry	1	2/12/2013 01:08
Boron	4.44		1.7	3.00	mg/Kg-dry	1	2/12/2013 01:08
Cadmium	0.188	J	0.060	0.599	mg/Kg-dry	1	2/12/2013 01:08
Calcium	65,300		1,200	5,990	mg/Kg-dry	100	2/11/2013 20:51
Chromium	8.86		0.11	0.599	mg/Kg-dry	1	2/12/2013 01:08
Cobalt	2.77		0.084	0.599	mg/Kg-dry	1	2/12/2013 01:08
Copper	3.91		0.12	0.599	mg/Kg-dry	1	2/12/2013 01:08
Iron	6,080		12	59.9	mg/Kg-dry	1	2/12/2013 01:08
Lead	4.36		0.060	0.599	mg/Kg-dry	1	2/12/2013 01:08
Manganese	88.8		0.12	0.599	mg/Kg-dry	1	2/12/2013 01:08
Molybdenum	0.302	J	0.18	0.599	mg/Kg-dry	1	2/12/2013 01:08
Nickel	6.69		0.11	0.599	mg/Kg-dry	1	2/12/2013 01:08
Potassium	1,650		16	59.9	mg/Kg-dry	1	2/12/2013 01:08
Selenium	0.620		0.22	0.599	mg/Kg-dry	1	2/12/2013 01:08
Silver	U		0.096	0.599	mg/Kg-dry	1	2/12/2013 01:08
Sodium	130		13	59.9	mg/Kg-dry	1	2/12/2013 01:08
Uranium	U		0.60	0.599	mg/Kg-dry	1	2/12/2013 01:08
Zinc	19.7		0.30	0.599	mg/Kg-dry	1	2/12/2013 01:08
ANIONS - EPA 300.0 (1993)		Method: E300		Prep: E300 / 2/13/13		Analyst: JKP	
Chloride	33.4		2.2	5.46	mg/Kg-dry	1	2/13/2013 21:15
Fluoride	4.97		0.33	1.09	mg/Kg-dry	1	2/13/2013 21:15
Nitrogen, Nitrate (As N)	U		0.33	1.09	mg/Kg-dry	1	2/13/2013 21:15
Nitrogen, Nitrite (As N)	U		0.33	1.09	mg/Kg-dry	1	2/13/2013 21:15
Sulfate	849		2.2	5.46	mg/Kg-dry	1	2/13/2013 21:15
Surr: Selenate (surr)	93.3			85-115	%REC	1	2/13/2013 21:15
CYANIDE		Meth	od: SW9014		Prep: SW90	10C / 2/14/13	Analyst: EDG
Cyanide	U		0.72	2.40	mg/Kg-dry	1	2/14/2013 15:00
MOISTURE		Meth	od: SW3550				Analyst: KAH
Percent Moisture	20.7		0.010	0.0100	wt%	1	2/13/2013 15:25

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302213

 Sample ID: MW-119 (22)
 Lab ID: 1302213-28

Collection Date: 2/4/2013 04:17 PM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 18-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 19.7
 0.010
 0.0100
 wt%
 1
 2/13/2013 15:25

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

Client: Navajo Refining Company

Project: RO Discharge Sampling

Lab ID: 1302213-29 Sample ID: MW-119 (24)

Collection Date: 2/4/2013 04:18 PM Matrix: SOIL

Report **Dilution Date Analyzed** Limit **MDL Factor Analyses** Result Qual Units

Date: 18-Feb-13

Work Order: 1302213

MOISTURE Method: SW3550 Analyst: KAH 2/13/2013 15:25 **Percent Moisture** 24.2 0.010 0.0100 wt%

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

Client: Navajo Refining Company

Project: RO Discharge Sampling **Sample ID:** MW-119 (25)

Collection Date: 2/4/2013 04:20 PM

Work Order: 1302213

Lab ID: 1302213-30

Date: 18-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Met	hod: SW8015M		Prep: SW35	41 / 2/8/13	Analyst: KMB
TPH (Oil Range)	U		0.62	4.2	mg/Kg-dry	1	2/11/2013 22:05
TPH (Diesel Range)	U		0.62	2.1	mg/Kg-dry	1	2/11/2013 22:05
Surr: 2-Fluorobiphenyl	60.5			60-135	%REC	1	2/11/2013 22:05
GASOLINE RANGE ORGANICS - SW8	015C	Met	hod: SW8015				Analyst: KKP
Gasoline Range Organics	U		0.025	0.062	mg/Kg-dry	1	2/8/2013 16:58
Surr: 4-Bromofluorobenzene	91.9			70-130	%REC	1	2/8/2013 16:58
MERCURY - SW7471B		Met	hod: SW7471A		Prep: SW74	71A / 2/13/13	Analyst: OFO
Mercury	2.25	J	0.34	4.16	μg/Kg-dry	1	2/13/2013 14:22
METALS		Met	hod: SW6020		Prep: SW30	50A / 2/8/13	Analyst: ALR
Aluminum	11,600		25	123	mg/Kg-dry	100	2/11/2013 20:56
Arsenic	2.38		0.25	1.23	mg/Kg-dry	2	2/12/2013 01:13
Barium	18.2		0.20	1.23	mg/Kg-dry	2	2/12/2013 01:13
Boron	6.19		3.4	6.13	mg/Kg-dry	2	2/12/2013 01:13
Cadmium	0.218	J	0.12	1.23	mg/Kg-dry	2	2/12/2013 01:13
Calcium	124,000		1,200	6,130	mg/Kg-dry	100	2/11/2013 20:56
Chromium	9.42		0.22	1.23	mg/Kg-dry	2	2/12/2013 01:13
Cobalt	4.83		0.17	1.23	mg/Kg-dry	2	2/12/2013 01:13
Copper	4.70		0.25	1.23	mg/Kg-dry	2	2/12/2013 01:13
Iron	8,790		25	123	mg/Kg-dry	2	2/12/2013 01:13
Lead	5.31		0.12	1.23	mg/Kg-dry	2	2/12/2013 01:13
Manganese	184		0.25	1.23	mg/Kg-dry	2	2/12/2013 01:13
Molybdenum	U		0.37	1.23	mg/Kg-dry	2	2/12/2013 01:13
Nickel	8.83		0.22	1.23	mg/Kg-dry	2	2/12/2013 01:13
Potassium	2,210		32	123	mg/Kg-dry	2	2/12/2013 01:13
Selenium	0.663	J	0.44	1.23	mg/Kg-dry	2	2/12/2013 01:13
Silver	U		0.20	1.23	mg/Kg-dry	2	2/12/2013 01:13
Sodium	140		27	123	mg/Kg-dry	2	2/12/2013 01:13
Uranium	U		1.2	1.23	mg/Kg-dry	2	2/12/2013 01:13
Zinc	23.2		0.61	1.23	mg/Kg-dry	2	2/12/2013 01:13
LOW-LEVEL SEMIVOLATILES		Met	hod: SW8270		Prep: SW35	41 / 2/11/13	Analyst: LG
1-Methylnaphthalene	U		2.0	8.2	μg/Kg-dry	1	2/12/2013 14:34
2-Methylnaphthalene	U		2.0	8.2	μg/Kg-dry	1	2/12/2013 14:34
Benzo(a)pyrene	U		2.0	8.2	μg/Kg-dry	1	2/12/2013 14:34
Naphthalene	U		2.0	8.2	μg/Kg-dry	1	2/12/2013 14:34
Surr: 2,4,6-Tribromophenol	58.8			36-126	%REC	1	2/12/2013 14:34
Surr: 2-Fluorobiphenyl	68.1			43-125	%REC	1	2/12/2013 14:34

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

Client: Navajo Refining Company

Project: RO Discharge Sampling Sample ID: MW-119 (25)

Collection Date: 2/4/2013 04:20 PM

Lab ID: 1302213-30

Matrix: SOIL

Work Order: 1302213

Date: 18-Feb-13

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 2-Fluorophenol	55.4			37-125	%REC	1	2/12/2013 14:34
Surr: 4-Terphenyl-d14	85.7			32-125	%REC	1	2/12/2013 14:34
Surr: Nitrobenzene-d5	66.6			37-125	%REC	1	2/12/2013 14:34
Surr: Phenol-d6	61.1			40-125	%REC	1	2/12/2013 14:34
VOLATILES - SW8260C		Metho	d: SW8260				Analyst: WLR
1,1,1-Trichloroethane	U		2.1	6.2	μg/Kg-dry	1	2/8/2013 14:57
1,1,2,2-Tetrachloroethane	U		0.62	6.2	μg/Kg-dry	1	2/8/2013 14:57
1,1,2-Trichloroethane	U		2.5	6.2	μg/Kg-dry	1	2/8/2013 14:57
1,1-Dichloroethane	U		0.62	6.2	μg/Kg-dry	1	2/8/2013 14:57
1,1-Dichloroethene	U		1.9	6.2	μg/Kg-dry	1	2/8/2013 14:57
1,2-Dibromoethane	U		0.87	6.2	μg/Kg-dry	1	2/8/2013 14:57
1,2-Dichloroethane	U		0.74	6.2	μg/Kg-dry	1	2/8/2013 14:57
Benzene	U		0.74	6.2	μg/Kg-dry	1	2/8/2013 14:57
Carbon tetrachloride	U		1.5	6.2	μg/Kg-dry	1	2/8/2013 14:57
Chloroform	U		2.2	6.2	μg/Kg-dry	1	2/8/2013 14:57
Ethylbenzene	U		1.1	6.2	μg/Kg-dry	1	2/8/2013 14:57
Methylene chloride	U		3.1	12	μg/Kg-dry	1	2/8/2013 14:57
Tetrachloroethene	U		1.2	6.2	μg/Kg-dry	1	2/8/2013 14:57
Toluene	U		0.87	6.2	μg/Kg-dry	1	2/8/2013 14:57
Trichloroethene	U		2.0	6.2	μg/Kg-dry	1	2/8/2013 14:57
Vinyl chloride	U		1.2	2.5	μg/Kg-dry	1	2/8/2013 14:57
Xylenes, Total	U		3.2	19	μg/Kg-dry	1	2/8/2013 14:57
Surr: 1,2-Dichloroethane-d4	102			70-128	%REC	1	2/8/2013 14:57
Surr: 4-Bromofluorobenzene	95.9			73-126	%REC	1	2/8/2013 14:57
Surr: Dibromofluoromethane	102			71-128	%REC	1	2/8/2013 14:57
Surr: Toluene-d8	97.5			73-127	%REC	1	2/8/2013 14:57
ANIONS - EPA 300.0 (1993)		Metho	d: E300		Prep: E300	/ 2/13/13	Analyst: JKP
Chloride	34.4		2.3	5.66	mg/Kg-dry	1	2/13/2013 21:29
Fluoride	3.28		0.34	1.13	mg/Kg-dry	1	2/13/2013 21:29
Nitrogen, Nitrate (As N)	U		0.34	1.13	mg/Kg-dry	1	2/13/2013 21:29
Nitrogen, Nitrite (As N)	U		0.34	1.13	mg/Kg-dry	1	2/13/2013 21:29
Sulfate	495		2.3	5.66	mg/Kg-dry	1	2/13/2013 21:29
Surr: Selenate (surr)	95.7			85-115	%REC	1	2/13/2013 21:29
MOISTURE		Metho	d: SW3550				Analyst: KAH
Percent Moisture	19.3		0.010	0.0100	wt%	1	2/13/2013 15:25

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

Client: Navajo Refining Company
Project: RO Discharge Sampling

Sample ID: TRIP BLANK 011813-17

Collection Date: 2/4/2013

Work Order: 1302213

Lab ID: 1302213-31

Matrix: WATER

Date: 18-Feb-13

Analyses	Result (Qual MDL	Report Limit	Units	Dilution Factor	Date Analyzed
LOW LEVEL VOLATILES - SW8260C		Method: SW8260				Analyst: AKP
1,1,1-Trichloroethane	U	0.00030	0.0010	mg/L	1	2/8/2013 18:18
1,1,2,2-Tetrachloroethane	U	0.00050	0.0010	mg/L	1	2/8/2013 18:18
1,1,2-Trichloroethane	U	0.00030	0.0010	mg/L	1	2/8/2013 18:18
1,1-Dichloroethane	U	0.00030	0.0010	mg/L	1	2/8/2013 18:18
1,1-Dichloroethene	U	0.00050	0.0010	mg/L	1	2/8/2013 18:18
1,2-Dibromoethane	U	0.00030	0.0010	mg/L	1	2/8/2013 18:18
1,2-Dichloroethane	U	0.00030	0.0010	mg/L	1	2/8/2013 18:18
Benzene	U	0.00020	0.0010	mg/L	1	2/8/2013 18:18
Carbon tetrachloride	U	0.00030	0.0010	mg/L	1	2/8/2013 18:18
Chloroform	U	0.00030	0.0010	mg/L	1	2/8/2013 18:18
Ethylbenzene	U	0.00030	0.0010	mg/L	1	2/8/2013 18:18
Methylene chloride	U	0.00040	0.0020	mg/L	1	2/8/2013 18:18
Tetrachloroethene	U	0.00040	0.0010	mg/L	1	2/8/2013 18:18
Toluene	U	0.00030	0.0010	mg/L	1	2/8/2013 18:18
Trichloroethene	U	0.00020	0.0010	mg/L	1	2/8/2013 18:18
Vinyl chloride	U	0.00040	0.0010	mg/L	1	2/8/2013 18:18
Xylenes, Total	U	0.00030	0.0010	mg/L	1	2/8/2013 18:18
Surr: 1,2-Dichloroethane-d4	98.2		71-125	%REC	1	2/8/2013 18:18
Surr: 4-Bromofluorobenzene	102		70-125	%REC	1	2/8/2013 18:18
Surr: Dibromofluoromethane	100		74-125	%REC	1	2/8/2013 18:18
Surr: Toluene-d8	105		78-123	%REC	1	2/8/2013 18:18

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

Date: 18-Feb-13 **ALS** Environmental

Navajo Refining Company **Client:**

Work Order: 1302213

Project: **RO** Discharge Sampling QC BATCH REPORT

Batch ID: 67694	Instrument ID FID-7		Method	d: SW801	5M						
MBLK Sample ID:	FBLKS1-130208-67694				L	Jnits: mg/	Kg	Analysi	s Date: 2/	11/2013 1	1:06 AM
Client ID:	Run ID:	FID-7_	130211A		Se	qNo: 310 9	9863	Prep Date: 2/8/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Oil Range)	U	3.4									
TPH (Diesel Range)	U	1.7									
Surr: 2-Fluorobiphenyl	2.223	0.10	3.33		0	66.8	60-135	0			
LCS Sample ID:	FLCSS1-130208-67694				ι	Jnits: mg/	Kg	Analysi	s Date: 2/	11/2013 1	1:30 AM
Client ID:	Run ID:	FID-7_	130211A		Se	qNo: 310 9	9864	Prep Date: 2/8/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Oil Range)	26.93	3.4	33.33		0	80.8	70-130	0			
TPH (Diesel Range)	32.23	1.7	33.33		0	96.7	70-130	0			
Surr: 2-Fluorobiphenyl	2.189	0.10	3.33		0	65.7	60-135	0			
MS Sample ID:	1302130-07CMS				L	Jnits: mg/	Kg	Analysi	s Date: 2/	11/2013 0	2:14 PM
Client ID:	Run ID:	FID-7_	130211A		Se	qNo: 310 9	9869	Prep Date: 2/8/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Oil Range)	30.4	3.4	33.3	0.92	24	88.5	70-130	0			
TPH (Diesel Range)	33.5	1.7	33.3	0.0485	55	100	70-130	0			
Surr: 2-Fluorobiphenyl	2.122	0.10	3.327		0	63.8	60-135	0			
MSD Sample ID:	1302130-07CMSD				Ĺ	Jnits: mg/	Kg	Analysi	s Date: 2/	11/2013 0	2:38 PM
Client ID:	Run ID:	FID-7_	130211A		Se	qNo: 310 9	9870	Prep Date: 2/8/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Oil Range)	29.07	3.4	33.3	0.92	24	84.5	70-130	30.4	4.49	30	
TPH (Diesel Range)	32.78	1.7	33.3	0.0485	55	98.3	70-130	33.5	2.19	30	
Surr: 2-Fluorobiphenyl	2.058	0.10	3.327		0	61.9	60-135	2.122	3.09	30	
The following samples w	ere analyzed in this batch:		302213-01C 302213-30C	13	022	13-15C	13	02213-16C			

Work Order: 1302213

Project: RO Discharge Sampling

Batch ID: R142598 Instrume	nt ID FID-9		Metho	d: SW801	5						
MBLK Sample ID: GBLKS-13	0208-R142598				ι	Jnits: mg/	Kg	Analys	is Date: 2/	8/2013 11	:29 AM
Client ID:	Run	ID: FID-9 _	130208A		Se	qNo: 311	0069	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	U	0.050									
Surr: 4-Bromofluorobenzene	0.08244	0.0050	0.1		0	82.4	70-130	0			
LCS Sample ID: GLCSS-13	0208-R142598				Ų	Jnits: mg/	Kg	Analys	is Date: 2/	8/2013 10	:51 AM
Client ID:	Run	ID: FID-9 _	130208A		Se	qNo: 311	0067	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	1.066	0.050	1		0	107	70-130	0			
Surr: 4-Bromofluorobenzene	0.08679	0.0050	0.1		0	86.8	70-130	0			
LCSD Sample ID: GLCSDS-1	130208-R142598				Ĺ	Jnits: mg/	Kg	Analys	is Date: 2/	8/2013 11	:10 AM
Client ID:	Run	ID: FID-9 _	130208A		Se	qNo: 311	0068	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	1.046	0.050	1		0	105	70-130	1.066	1.92	30	
Surr: 4-Bromofluorobenzene	0.08518	0.0050	0.1		0	85.2	70-130	0.08679	1.86	30	
MS Sample ID: 1302130-0	5BMS				Ų	Jnits: mg/	Kg	Analys	is Date: 2/	8/2013 02	:46 PM
Client ID:	Run	ID: FID-9 _	130208A		Se	qNo: 311	0078	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	1.048	0.050	1		0	105	70-130	0			
Surr: 4-Bromofluorobenzene	0.08551	0.0050	0.1		0	85.5	70-130	0			
MSD Sample ID: 1302130-0	5BMSD				l	Jnits: mg/	Kg	Analys	is Date: 2/	8/2013 03	:05 PM
Client ID:	Run	ID: FID-9 _	130208A		Se	qNo: 311	0079	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	1.019	0.050	1		0	102	70-130	1.048	2.82	30	
Surr: 4-Bromofluorobenzene	0.08438	0.0050	0.1		0	84.4	70-130	0.08551	1.33	30	
The following samples were analyz	ed in this batch:		302213-01B 302213-30B	13	022	213-15B	13	02213-16B			

Note:

Client: Navajo Refining Company

Work Order: 1302213

Batch ID: 67688	Instrument ID ICPMS05		Method	: SW602	20					
MBLK Sa	ample ID: MBLKS1-020813-67688				Units: mg/	Kg	Analys	sis Date: 2	2/8/2013 03	3:52 PM
Client ID:	Run	ID: ICPMS)5_130208A		SeqNo: 310	7176	Prep Date: 2/8	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.4223	1.0								J
Arsenic	U	0.50								
Barium	U	0.50								
Cadmium	U	0.50								
Calcium	U	50								
Chromium	U	0.50								
Cobalt	U	0.50								
Copper	0.2178	0.50								J
Iron	U	50								
Lead	U	0.50								
Manganese	U	0.50								
Molybdenum	U	0.50								
Nickel	U	0.50								
Potassium	U	50								
Selenium	U	0.50								
Silver	U	0.50								
Uranium	U	0.50								
Zinc	U	0.50								
MBLK Sa	ample ID: MBLKS1-020813-67688				Units: mg/	Kg	Analys	sis Date: 2	2/11/2013 0	2:05 PN
Client ID:	Run	ID: ICPMS)5_130211A		SeqNo: 310 8	8768	Prep Date: 2/8	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	U	2.5								
Sodium	U	50								

Client: Navajo Refining Company

Work Order: 1302213

Project: RO Discharge Sampling

Batch ID: 67688	Instrument ID ICPMS05		Method	SW602	20						
LCS Sa	ample ID: MLCSS1-020813-67688				ι	Jnits: mg/	Kg	Analysis D	Date: 2 ,	/8/2013 03	:54 PM
Client ID:	Run IE	: ICPMS	05_130208A		Se	eqNo: 310	7177	Prep Date: 2/8/201	3	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value %	5RPD	RPD Limit	Qual
Aluminum	9.551	1.0	10		0	95.5	80-120	0			
Arsenic	9.288	0.50	10		0	92.9	80-120	0			
Barium	9.21	0.50	10		0	92.1	80-120	0			
Cadmium	8.995	0.50	10		0	89.9	80-120	0			
Calcium	876.4	50	1000		0	87.6	80-120	0			
Chromium	9.365	0.50	10		0	93.7	80-120	0			
Cobalt	9.464	0.50	10		0	94.6	80-120	0			
Copper	9.594	0.50	10		0	95.9	80-120	0			
Iron	918.6	50	1000		0	91.9	80-120	0			
Lead	9.292	0.50	10		0	92.9	80-120	0			
Manganese	9.29	0.50	10		0	92.9	80-120	0			
Molybdenum	9.045	0.50	10		0	90.4	80-120	0			
Nickel	9.358	0.50	10		0	93.6	80-120	0			
Potassium	866.4	50	1000		0	86.6	80-120	0			
Selenium	9.645	0.50	10		0	96.4	80-120	0			
Silver	9.071	0.50	10		0	90.7	80-120	0			
Uranium	9.13	0.50	10		0	91.3	80-120	0			
Zinc	9.501	0.50	10		0	95	80-120	0			
LCS Sa	ample ID: MLCSS1-020813-67688				ι	Jnits: mg/	Kg	Analysis D	Date: 2	/11/2013 0	2:07 PM
Client ID:	Run II	: ICPMS	05_130211A		Se	eqNo: 310	8769	Prep Date: 2/8/201	3	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	SRPD	RPD Limit	Qual

Boron

Sodium

48.15

959.9

2.5

50

50

1000

0

0

96.3

96

80-120

80-120

0

0

Client: Navajo Refining Company

1302213 Work Order:

Analyte Boron

Sodium

Project: RO Discharge Sampling

Batch ID: 67688 Instrument ID ICPMS05 Method: SW6020 MS Sample ID: 1302251-01BMS Units: mg/Kg Analysis Date: 2/8/2013 04:13 PM Client ID: SeqNo: 3107188 Prep Date: 2/8/2013 DF: 1 Run ID: ICPMS05_130208A **RPD** SPK Ref Control RPD Ref Value Limit Value Limit Analyte Result PQL SPK Val %REC %RPD Qual 0 Aluminum 7184 0.94 9.362 5268 20500 75-125 SEO Arsenic 10.43 0.47 9.362 1.442 96 75-125 0 9.362 0 **Barium** 36.97 0.47 27.73 98.7 75-125 Cadmium 8.679 0.47 9.362 0.007344 92.6 75-125 0 Calcium 1444 47 936.2 563.6 94 75-125 0 Chromium 15.45 0.47 9.362 5.189 110 75-125 0 Cobalt 10.01 0.47 9.362 0.9823 96.4 75-125 0 0.47 9.362 93 0 Copper 11.14 2.43 75-125 Iron 6750 47 936.2 4746 214 75-125 0 SO 0 Lead 13.34 0.47 9.362 4.276 96.8 75-125 Manganese 19.81 0.47 9.362 8.513 121 75-125 0 Molybdenum 8.064 0.47 9.362 0.124 84.8 75-125 0 0 Nickel 0.47 9.362 2.036 97.5 75-125 11.16 Potassium 1214 47 936.2 302.4 97.4 75-125 0 0 Selenium 8.572 0.47 9.362 0.1601 89.8 75-125 0 Silver 8.625 0.47 9.362 0.03348 91.8 75-125 Uranium 8.882 0.47 9.362 0.4215 90.4 75-125 0 Zinc 17.66 0.47 9.362 6.006 75-125 0 124 MS Sample ID: 1302251-01BMS Analysis Date: 2/11/2013 01:04 PM Units: mg/Kg SeqNo: 3108707 Prep Date: 2/8/2013 Client ID: Run ID: ICPMS05_130211A DF: 1 RPD SPK Ref RPD Ref Control Value Value Limit Limit

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

Result

43.62

1460

PQL

2.3

47

SPK Val

46.81

936.2

%REC

88.6

100

75-125

75-125

2.12

523

Qual

%RPD

0

0

Client: Navajo Refining Company

Work Order: 1302213

Batch ID: 67688	Instrument ID ICPMS05	Method:	SW6020

MSD	Sample ID: 1302251-01BMSD			ı	Jnits: mg/	Kg	Analysi	s Date: 2/	8/2013 04	:15 PM
Client ID:	Rur	ID: ICPMS)5_130208A	Se	eqNo: 310	7189	Prep Date: 2/8/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	7085	0.93	9.322	5268	19500	75-125	7184	1.39	25	SEO
Arsenic	10.04	0.47	9.322	1.442	92.3	75-125	10.43	3.79	25	
Barium	36.69	0.47	9.322	27.73	96.1	75-125	36.97	0.768	25	
Cadmium	8.191	0.47	9.322	0.007344	87.8	75-125	8.679	5.79	25	
Calcium	1351	47	932.2	563.6	84.5	75-125	1444	6.62	25	
Chromium	15.48	0.47	9.322	5.189	110	75-125	15.45	0.204	25	
Cobalt	9.642	0.47	9.322	0.9823	92.9	75-125	10.01	3.71	25	
Copper	11.09	0.47	9.322	2.43	92.9	75-125	11.14	0.462	25	
Iron	6733	47	932.2	4746	213	75-125	6750	0.25	25	SO
Lead	13.07	0.47	9.322	4.276	94.4	75-125	13.34	1.99	25	
Manganese	19.66	0.47	9.322	8.513	120	75-125	19.81	0.784	25	
Molybdenum	8.081	0.47	9.322	0.124	85.4	75-125	8.064	0.211	25	
Nickel	10.93	0.47	9.322	2.036	95.4	75-125	11.16	2.13	25	
Potassium	1177	47	932.2	302.4	93.8	75-125	1214	3.09	25	
Selenium	8.376	0.47	9.322	0.1601	88.1	75-125	8.572	2.31	25	
Silver	8.161	0.47	9.322	0.03348	87.2	75-125	8.625	5.53	25	
Uranium	8.588	0.47	9.322	0.4215	87.6	75-125	8.882	3.37	25	
Zinc	16.13	0.47	9.322	6.006	109	75-125	17.66	9.04	25	

MSD	Sample ID: 1302251-01BMSE)				Units: mg	/Kg	Analysi	is Date: 2/	11/2013 0	1:06 PM
Client ID:		Run II	: ICPMS	05_130211	A	SeqNo: 310	8708	Prep Date: 2/8/2	2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron		43.49	2.3	46.61	2.	12 88.8	75-125	43.62	0.292	25	
Sodium		1364	47	932.2	52	23 90.2	75-125	1460	6.78	25	

Client: Navajo Refining Company

Work Order: 1302213

Batch ID: 6768	8 Instrument ID ICPMS05		Method:	SW602	20						
DUP S	Sample ID: 1302251-01BDUP				Į	Jnits: mg/	Kg	Analysi	s Date: 2/	8/2013 04	:11 PM
Client ID:	Run ID:	ICPMS	05_130208A		Se	eqNo: 310	7184	Prep Date: 2/8/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	1.432	0.47	0		0	0	0-0	1.442	0.69	25	
Barium	25.82	0.47	0		0	0	0-0	27.73	7.13	25	
Cadmium	U	0.47	0		0	0	0-0	0.007344	0	25	
Calcium	524.9	47	0		0	0	0-0	563.6	7.12	25	
Chromium	5.187	0.47	0		0	0	0-0	5.189	0.0449	25	
Cobalt	0.8574	0.47	0		0	0	0-0	0.9823	13.6	25	
Copper	1.648	0.47	0		0	0	0-0	2.43	38.4	25	R
Iron	4243	47	0		0	0	0-0	4746	11.2	25	
Lead	4.189	0.47	0		0	0	0-0	4.276	2.05	25	
Manganese	8.105	0.47	0		0	0	0-0	8.513	4.9	25	
Molybdenum	0.1995	0.47	0		0	0	0-0	0.124	0	25	J
Nickel	1.848	0.47	0		0	0	0-0	2.036	9.68	25	
Potassium	302	47	0		0	0	0-0	302.4	0.125	25	
Selenium	0.4194	0.47	0		0	0	0-0	0.1601	0	25	J
Silver	U	0.47	0		0	0	0-0	0.03348	0	25	
Uranium	U	0.47	0		0	0		0.4215	0	25	
Zinc	5.742	0.47	0		0	0	0-0	6.006	4.49	25	
DUP S	Sample ID: 1302251-01BDUP				ι	Jnits: mg/	Kg	Analysi	s Date: 2/	11/2013 0	2:12 PN
Client ID:	Run ID:	ICPMS	05_130211A		Se	qNo: 310	8771	Prep Date: 2/8/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	5438	0.94	0		0	0	0-0	5931	8.68	25	E
Boron	2.326	2.4	0		0	0	0-0	2.847	0.00	25	J
Sodium	657.7	47	0		0	0	0-0	721.9	9.3	25	
The following	samples were analyzed in this batch:	13 13	302213-01D 302213-09A 302213-16D 302213-24A	13 13	3022 3022	213-03A 213-12A 213-18A 213-27A	13 13	02213-06A 02213-15D 02213-21A 02213-30D			

Client: Navajo Refining Company

Work Order: 1302213

Batch ID: 6	7786	Instrument ID HG02		Method	SW747	'1A						
MBLK	Sample ID:	GBLKS1-021313-67786				U	nits: µg/k	(g	Analysi	s Date: 2/	13/2013 0	1:42 PM
Client ID:		Run ID	: HG02_	130213A		Sec	qNo: 311 2	2188	Prep Date: 2/13	/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury		U	3.3									
LCS	Sample ID:	GLCSS1-021313-67786				U	nits: µg/k	(g	Analysi	s Date: 2/	13/2013 0	1:44 PM
Client ID:		Run ID	: HG02_	130213A		Sec	qNo: 311 2	2190	Prep Date: 2/13	/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury		346	3.3	333.3		0	104	85-115	0			
MS	Sample ID:	1302213-18AMS				U	nits: µg/k	(g	Analysi	s Date: 2/	13/2013 0	1:50 PM
Client ID: N	IW-119 (5)	Run ID	: HG02_	130213A		Sec	qNo: 311 2	2197	Prep Date: 2/13	/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury		337.1	3.4	346.1	5.6	33	95.8	85-115	0			
MSD	Sample ID:	1302213-18AMSD				U	nits: µg/k	(g	Analysi	s Date: 2/	13/2013 0	1:52 PM
Client ID: N	IW-119 (5)	Run ID	: HG02_	130213A		Sec	qNo: 311 2	2199	Prep Date: 2/13	/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury		348.7	3.4	345.9	5.63	33	99.2	85-115	337.1	3.38	20	
DUP	Sample ID:	1302213-18ADUP				U	nits: µg/k	(g	Analysi	s Date: 2/	13/2013 0	1:48 PM
Client ID: N	IW-119 (5)	Run ID	: HG02_	130213A		Sec	qNo: 311 2	2194	Prep Date: 2/13	/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury		5.832	3.5	0		0	0		5.633	3.48	20	
The follow	ing samples w	vere analyzed in this batch:	1; 1;	302213-01D 302213-09A 302213-16D 302213-24A	13 13	8022° 8022°	13-03A 13-12A 13-18A 13-27A	13 13	02213-06A 02213-15D 02213-21A 02213-30D			

Client: Navajo Refining Company

Work Order: 1302213

MBLK Sample ID: SBLKS2-1	30211-67741				U	Jnits: µg/k	(g	Analysis Date: 2/12/2013 07:15 Pl			
Client ID:	Run I	D: SV-4_1	30212A		Sec	qNo: 311 2	2136	Prep Date: 2/	11/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	U	6.6									
2-Methylnaphthalene	U	6.6									
Benzo(a)pyrene	U	6.6									
Naphthalene	U	6.6									
Surr: 2,4,6-Tribromophenol	107.3	6.6	166.7		0	64.4	36-126		0		
Surr: 2-Fluorobiphenyl	131	6.6	166.7		0	78.6	43-125		0		
Surr: 2-Fluorophenol	128.7	6.6	166.7		0	77.2	37-125		0		
Surr: 4-Terphenyl-d14	147.3	6.6	166.7		0	88.4	32-125		0		
Surr: Nitrobenzene-d5	122.4	6.6	166.7		0	73.4	37-125		0		
Surr: Phenol-d6	127	6.6	166.7		0	76.2	40-125		0		
LCS Sample ID: SLCSS2-1	30211-67741				U	Jnits: µg/k	(g	Analy	sis Date: 2	/12/2013 0	7:35 PM
Client ID:	Run II	D: SV-4 1	30212A		Sec	qNo: 311	2137	Prep Date: 2/	11/2013	DF: 1	

Client ID:	Run II	D: SV-4_1	30212A		Se	qNo: 311 :	2137	Prep Date: 2/1	1/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	134.8	6.6	166.7		0	80.9	50-120	()		
2-Methylnaphthalene	137	6.6	166.7		0	82.2	50-120	()		
Benzo(a)pyrene	101.1	6.6	166.7		0	60.7	50-130	()		
Naphthalene	133.1	6.6	166.7		0	79.8	50-125	()		
Surr: 2,4,6-Tribromophenol	124.5	6.6	166.7		0	74.7	36-126	()		
Surr: 2-Fluorobiphenyl	128.1	6.6	166.7		0	76.9	43-125	()		
Surr: 2-Fluorophenol	125.8	6.6	166.7		0	75.5	37-125	()		
Surr: 4-Terphenyl-d14	146.9	6.6	166.7		0	88.1	32-125	()		
Surr: Nitrobenzene-d5	121.8	6.6	166.7		0	73.1	37-125	()		
Surr: Phenol-d6	122.8	6.6	166.7		0	73.7	40-125	()		

Navajo Refining Company **Client:**

Work Order: 1302213

Project: RO Discharge Sampling

Batch ID: 67741	Instrument ID SV-4	Method:	SW8270

MS	Sample ID: 1302175-02	BMS			ι	Jnits: µg/k	{ g	Analysis Date: 2/12/2013 08:16 PM			
Client ID:		Run II	Run ID: SV-4_130212A			SeqNo: 3112139			Prep Date: 2/11/2013 DF: 10		
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methyln	naphthalene	699.3	66	166.4	583.8	69.4	50-120	0)		
2-Methyln	aphthalene	132.4	66	166.4	0	79.6	50-120	0)		
Benzo(a)	oyrene	101.7	66	166.4	0	61.1	50-130	0)		
Naphthale	ene	159.1	66	166.4	0	95.6	50-125	0)		
Surr: 2,	,4,6-Tribromophenol	124.4	66	166.4	0	74.7	36-126	0)		
Surr: 2	-Fluorobiphenyl	163.5	66	166.4	0	98.2	43-125	0)		
Surr: 2	-Fluorophenol	93.61	66	166.4	0	56.3	37-125	0)		
Surr: 4	-Terphenyl-d14	151.1	66	166.4	0	90.8	32-125	0)		
Surr: N	litrobenzene-d5	130.9	66	166.4	0	78.7	37-125	0)		
Surr: P	henol-d6	186.6	66	166.4	0	112	40-125	0)		

MSD	Sample ID: 1302175-0	02BMSD			ı	Jnits: µg/l	(g	Analysis Date: 2/12/2013 08:36 PM				
Client ID:		Run ID	: SV-4_1	30212A	Se	eqNo: 311	2140	Prep Date: 2/11	/2013	DF: 10		
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
1-Methylnar	ohthalene	723.6	66	166.3	583.8	84	50-120	699.3	3.42	30		
2-Methylnap	ohthalene	109	66	166.3	0	65.5	50-120	132.4	19.4	30		
Benzo(a)py	rene	98.85	66	166.3	0	59.4	50-130	101.7	2.84	30		
Naphthalen	е	150.2	66	166.3	0	90.3	50-125	159.1	5.72	30		
Surr: 2,4,	.6-Tribromophenol	131.7	66	166.3	0	79.2	36-126	124.4	5.72	30		
Surr: 2-F	luorobiphenyl	151.5	66	166.3	0	91.1	43-125	163.5	7.63	30		
Surr: 2-F	luorophenol	113.3	66	166.3	0	68.1	37-125	93.61	19.1	30		
Surr: 4-T	erphenyl-d14	147.9	66	166.3	0	88.9	32-125	151.1	2.1	30		
Surr: Nitr	obenzene-d5	112.5	66	166.3	0	67.6	37-125	130.9	15.1	30		
Surr: Phe	enol-d6	111.5	66	166.3	0	67	40-125	186.6	50.4	30	R	

The following samples were analyzed in this batch:

1302213-01C	1302213-15C	1302213-16C	
1302213-30C			

Client: Navajo Refining Company

Work Order: 1302213

Project: RO Discharge Sampling

Batch ID: R142332 Instrument ID VOA5 Method: SW8260

MBLK Sample ID: VBLKS1-0	20813-R142332				Units: µg/	Kg	Ana	lysis Date: 2	2/8/2013 0	8:51 AM
Client ID:	Run I	D: VOA5 _	130208A		SeqNo: 310	5805	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	U	5.0								
1,1,2,2-Tetrachloroethane	U	5.0								
1,1,2-Trichloroethane	U	5.0								
1,1-Dichloroethane	U	5.0								
1,1-Dichloroethene	U	5.0								
1,2-Dibromoethane	U	5.0								
1,2-Dichloroethane	U	5.0								
Benzene	U	5.0								
Carbon tetrachloride	U	5.0								
Chloroform	U	5.0								
Ethylbenzene	U	5.0								
Methylene chloride	U	10								
Tetrachloroethene	U	5.0								
Toluene	U	5.0								
Trichloroethene	U	5.0								
Vinyl chloride	U	2.0								
Xylenes, Total	U	15								
Surr: 1,2-Dichloroethane-d4	48.35	0	50		0 96.7	70-128		0		
Surr: 4-Bromofluorobenzene	47.21	0	50		0 94.4	73-126		0		
Surr: Dibromofluoromethane	49.57	0	50		0 99.1	71-128		0		
Surr: Toluene-d8	50.84	0	50		0 102	73-127	,	0		

Client: Navajo Refining Company

Work Order: 1302213

Project: RO Discharge Sampling

Batch ID: R142332 Instrument ID VOA5 Method: SW8260

LCS Sample ID: VLCSS1-02	20813-R142332				Units: µg/l	≺g	Analys	sis Date: 2	/8/2013 08	3:06 AM
Client ID:	Run II	D: VOA5 _	130208A	S	eqNo: 310	5804	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	50.93	5.0	50	0	102	79-124	()		
1,1,2,2-Tetrachloroethane	43.86	5.0	50	0	87.7	75-123	()		
1,1,2-Trichloroethane	46.4	5.0	50	0	92.8	79-120	()		
1,1-Dichloroethane	47.42	5.0	50	0	94.8	75-124	()		
1,1-Dichloroethene	41.54	5.0	50	0	83.1	80-122	()		
1,2-Dibromoethane	46.55	5.0	50	0	93.1	79-120	()		
1,2-Dichloroethane	49.08	5.0	50	0	98.2	73-121	()		
Benzene	49.42	5.0	50	0	98.8	79-120	()		
Carbon tetrachloride	48.23	5.0	50	0	96.5	74-126	()		
Chloroform	49.47	5.0	50	0	98.9	78-120	()		
Ethylbenzene	48.58	5.0	50	0	97.2	80-122	()		
Methylene chloride	48.46	10	50	0	96.9	70-123	()		
Tetrachloroethene	46.35	5.0	50	0	92.7	80-121	()		
Toluene	48.79	5.0	50	0	97.6	79-120	()		
Trichloroethene	50.47	5.0	50	0	101	80-121	()		
Vinyl chloride	49.07	2.0	50	0	98.1	76-126	()		
Xylenes, Total	148.3	15	150	0	98.9	80-120	()		
Surr: 1,2-Dichloroethane-d4	49.87	0	50	0	99.7	70-128	()		
Surr: 4-Bromofluorobenzene	49.17	0	50	0	98.3	73-126	()		
Surr: Dibromofluoromethane	50.57	0	50	0	101	71-128	()		
Surr: Toluene-d8	48.65	0	50	0	97.3	73-127	()		

Client: Navajo Refining Company

Work Order: 1302213

Project: RO Discharge Sampling

Batch ID: R142332 Instrument ID VOA5 Method: SW8260

MS Sample ID: 1302237-05	5AMS			I	Units: µg/l	K g	Analys	sis Date: 2	/8/2013 1	1:31 AM
Client ID:	Run II	D: VOA5 _	130208A	Se	eqNo: 310	6577	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	53.69	5.0	50	0	107	79-124	()		
1,1,2,2-Tetrachloroethane	43.64	5.0	50	0	87.3	75-123	()		
1,1,2-Trichloroethane	46.42	5.0	50	0	92.8	79-120	()		
1,1-Dichloroethane	51.53	5.0	50	0	103	75-124	()		
1,1-Dichloroethene	47.74	5.0	50	0	95.5	80-122	()		
1,2-Dibromoethane	47.24	5.0	50	0	94.5	79-120	()		
1,2-Dichloroethane	49.61	5.0	50	0	99.2	73-121	()		
Benzene	54.96	5.0	50	1.572	107	79-120	()		
Carbon tetrachloride	50.46	5.0	50	0	101	74-126	()		
Chloroform	54.12	5.0	50	0	108	78-120	()		
Ethylbenzene	50	5.0	50	0	100	80-122	()		
Methylene chloride	49.54	10	50	0	99.1	70-123	()		
Tetrachloroethene	46.55	5.0	50	0	93.1	80-121	()		
Toluene	52.61	5.0	50	1.122	103	79-120	()		
Trichloroethene	54.13	5.0	50	0	108	80-121	()		
Vinyl chloride	51.46	2.0	50	0	103	76-126	()		
Xylenes, Total	153	15	150	0	102	80-120	()		
Surr: 1,2-Dichloroethane-d4	48.02	0	50	0	96	70-128	()		
Surr: 4-Bromofluorobenzene	49.6	0	50	0	99.2	73-126	()		
Surr: Dibromofluoromethane	49.01	0	50	0	98	71-128	()		
Surr: Toluene-d8	49.1	0	50	0	98.2	73-127	()		

Client: Navajo Refining Company

Work Order: 1302213

Project: RO Discharge Sampling

Batch ID: R142332 Instrument ID VOA5 Method: SW8260

MSD Sample ID: 1302237-05	5AMSD			I	Jnits: µg/l	K g	Analysis Date: 2/8/2013 11:54 AN			
Client ID:	Run I	D: VOA5 _	130208A	Se	eqNo: 310	6578	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	53.75	5.0	50	0	107	79-124	53.69	0.113	30	
1,1,2,2-Tetrachloroethane	44.34	5.0	50	0	88.7	75-123	43.64	1.58	30	
1,1,2-Trichloroethane	48.38	5.0	50	0	96.8	79-120	46.42	4.14	30	
1,1-Dichloroethane	51.5	5.0	50	0	103	75-124	51.53	0.0479	30	
1,1-Dichloroethene	44.04	5.0	50	0	88.1	80-122	47.74	8.05	30	
1,2-Dibromoethane	48.04	5.0	50	0	96.1	79-120	47.24	1.69	30	
1,2-Dichloroethane	47.39	5.0	50	0	94.8	73-121	49.61	4.57	30	
Benzene	57.93	5.0	50	1.572	113	79-120	54.96	5.25	30	
Carbon tetrachloride	50.3	5.0	50	0	101	74-126	50.46	0.329	30	
Chloroform	52.68	5.0	50	0	105	78-120	54.12	2.71	30	
Ethylbenzene	48.83	5.0	50	0	97.7	80-122	50	2.36	30	
Methylene chloride	51.56	10	50	0	103	70-123	49.54	3.99	30	
Tetrachloroethene	47.71	5.0	50	0	95.4	80-121	46.55	2.44	30	
Toluene	54.74	5.0	50	1.122	107	79-120	52.61	3.97	30	
Trichloroethene	54.27	5.0	50	0	109	80-121	54.13	0.251	30	
Vinyl chloride	51.8	2.0	50	0	104	76-126	51.46	0.65	30	
Xylenes, Total	146	15	150	0	97.4	80-120	153	4.68	30	
Surr: 1,2-Dichloroethane-d4	46.98	0	50	0	94	70-128	48.02	2.19	30	
Surr: 4-Bromofluorobenzene	49.03	0	50	0	98.1	73-126	49.6	1.17	30	
Surr: Dibromofluoromethane	49.86	0	50	0	99.7	71-128	49.01	1.73	30	
Surr: Toluene-d8	48.96	0	50	0	97.9	73-127	49.1	0.276	30	

The following samples were analyzed in this batch:

1302213-01A	1302213-15A	1302213-16A	
1302213-30A			

Client: Navajo Refining Company

Work Order: 1302213

Project: RO Discharge Sampling

Batch ID: R142411 Instrument ID VOA4 Method: SW8260

MBLK Sample ID: VBLKW-13	0208-R142411				Units: µg/I	-	Analy	sis Date: 2	/8/2013 0	3:28 PM
Client ID:	Run II	D: VOA4 _	130208A		SeqNo: 310	7211	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	U	1.0								
1,1,2,2-Tetrachloroethane	U	1.0								
1,1,2-Trichloroethane	U	1.0								
1,1-Dichloroethane	U	1.0								
1,1-Dichloroethene	U	1.0								
1,2-Dibromoethane	U	1.0								
1,2-Dichloroethane	U	1.0								
Benzene	U	1.0								
Carbon tetrachloride	U	1.0								
Chloroform	U	1.0								
Ethylbenzene	U	1.0								
Methylene chloride	U	2.0								
Tetrachloroethene	U	1.0								
Toluene	U	1.0								
Trichloroethene	U	1.0								
Vinyl chloride	U	1.0								
Xylenes, Total	U	1.0								
Surr: 1,2-Dichloroethane-d4	49.26	1.0	50		0 98.5	71-125		0		
Surr: 4-Bromofluorobenzene	50.97	1.0	50		0 102	70-125		0		
Surr: Dibromofluoromethane	49.88	1.0	50		0 99.8	74-125		0		
Surr: Toluene-d8	52.35	1.0	50		0 105	78-123		0		

Client: Navajo Refining Company

Work Order: 1302213

Project: RO Discharge Sampling

Batch ID: R142411 Instrument ID VOA4 Method: SW8260

LCS Sample ID: VLCSW-13	0208-R142411				Units: µg/l	-	Analys	sis Date: 2	/8/2013 02	2:39 PM
Client ID:	Run II	D: VOA4 _	130208A	S	eqNo: 310	7210	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	52.86	1.0	50	0	106	80-120	()		
1,1,2,2-Tetrachloroethane	47.98	1.0	50	0	96	74-123	()		
1,1,2-Trichloroethane	50.07	1.0	50	0	100	80-120	()		
1,1-Dichloroethane	50.7	1.0	50	0	101	80-120	()		
1,1-Dichloroethene	54.16	1.0	50	0	108	80-120	()		
1,2-Dibromoethane	51.59	1.0	50	0	103	80-120	()		
1,2-Dichloroethane	48.17	1.0	50	0	96.3	79-120	()		
Benzene	47.86	1.0	50	0	95.7	80-120	()		
Carbon tetrachloride	48.36	1.0	50	0	96.7	79-120	()		
Chloroform	48.15	1.0	50	0	96.3	80-120	()		
Ethylbenzene	49.39	1.0	50	0	98.8	80-120	()		
Methylene chloride	50.36	2.0	50	0	101	75-125	()		
Tetrachloroethene	51.48	1.0	50	0	103	80-120	()		
Toluene	49.61	1.0	50	0	99.2	80-121	()		
Trichloroethene	51.24	1.0	50	0	102	80-120	()		
Vinyl chloride	53.9	1.0	50	0	108	75-125	()		
Xylenes, Total	146.1	1.0	150	0	97.4	80-124	()		
Surr: 1,2-Dichloroethane-d4	47.45	1.0	50	0	94.9	71-125	()		
Surr: 4-Bromofluorobenzene	53.53	1.0	50	0	107	70-125	()		
Surr: Dibromofluoromethane	50.08	1.0	50	0	100	74-125	()		
Surr: Toluene-d8	51.42	1.0	50	0	103	78-123	()		

Client: Navajo Refining Company

Work Order: 1302213

Project: RO Discharge Sampling

Batch ID: R142411 Instrument ID VOA4 Method: SW8260

MS Sample ID: 1302186-03	BAMS			ı	Jnits: µg/L	-	Analys	sis Date: 2	/8/2013 0	5:05 PM
Client ID:	Run II	D: VOA4 _	130208A	Se	eqNo: 310	7855	Prep Date:		DF: 10	00
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	5465	100	5000	0	109	80-120	()		
1,1,2,2-Tetrachloroethane	4608	100	5000	0	92.2	74-123	C)		
1,1,2-Trichloroethane	4986	100	5000	0	99.7	80-120	C)		
1,1-Dichloroethane	5028	100	5000	0	101	80-120	C)		
1,1-Dichloroethene	5538	100	5000	0	111	80-120	C)		
1,2-Dibromoethane	5196	100	5000	0	104	80-120	C)		
1,2-Dichloroethane	5039	100	5000	0	101	79-120	C)		
Benzene	10820	100	5000	5736	102	80-120	C)		
Carbon tetrachloride	4875	100	5000	0	97.5	79-120	C)		
Chloroform	4926	100	5000	0	98.5	80-120	C)		
Ethylbenzene	5806	100	5000	730.1	102	80-120	C)		
Methylene chloride	5077	200	5000	0	102	75-125	C)		
Tetrachloroethene	5283	100	5000	0	106	80-120	C)		
Toluene	6015	100	5000	951	101	80-121	C)		
Trichloroethene	5148	100	5000	0	103	80-120	C)		
Vinyl chloride	5413	100	5000	0	108	75-125	C)		
Xylenes, Total	16630	100	15000	1612	100	80-124	C)		
Surr: 1,2-Dichloroethane-d4	4817	100	5000	0	96.3	71-125	C)		
Surr: 4-Bromofluorobenzene	5461	100	5000	0	109	70-125	C)		
Surr: Dibromofluoromethane	5005	100	5000	0	100	74-125	C)		
Surr: Toluene-d8	5199	100	5000	0	104	78-123	C)		

Client: Navajo Refining Company

Work Order: 1302213

Project: RO Discharge Sampling

Batch ID: R142411 Instrument ID VOA4 Method: SW8260

MSD Sample ID: 1302186-03	BAMSD			Į.	Jnits: µg/L	-	Analysi	s Date: 2/	8/2013 05	:30 PM
Client ID:	Run I	D: VOA4 _	130208A	Se	eqNo: 310	7856	Prep Date:		DF: 10	0
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1,1,1-Trichloroethane	5339	100	5000	0	107	80-120	5465	2.34	20	
1,1,2,2-Tetrachloroethane	4755	100	5000	0	95.1	74-123	4608	3.15	20	
1,1,2-Trichloroethane	4957	100	5000	0	99.1	80-120	4986	0.589	20	
1,1-Dichloroethane	5015	100	5000	0	100	80-120	5028	0.268	20	
1,1-Dichloroethene	5299	100	5000	0	106	80-120	5538	4.4	20	
1,2-Dibromoethane	5263	100	5000	0	105	80-120	5196	1.3	20	
1,2-Dichloroethane	5061	100	5000	0	101	79-120	5039	0.453	20	
Benzene	10490	100	5000	5736	95	80-120	10820	3.18	20	
Carbon tetrachloride	4761	100	5000	0	95.2	79-120	4875	2.36	20	
Chloroform	4821	100	5000	0	96.4	80-120	4926	2.15	20	
Ethylbenzene	5600	100	5000	730.1	97.4	80-120	5806	3.61	20	
Methylene chloride	5082	200	5000	0	102	75-125	5077	0.09	20	
Tetrachloroethene	5072	100	5000	0	101	80-120	5283	4.06	20	
Toluene	5842	100	5000	951	97.8	80-121	6015	2.92	20	
Trichloroethene	4962	100	5000	0	99.2	80-120	5148	3.69	20	
Vinyl chloride	5259	100	5000	0	105	75-125	5413	2.88	20	
Xylenes, Total	16150	100	15000	1612	96.9	80-124	16630	2.92	20	
Surr: 1,2-Dichloroethane-d4	4925	100	5000	0	98.5	71-125	4817	2.21	20	
Surr: 4-Bromofluorobenzene	5363	100	5000	0	107	70-125	5461	1.82	20	
Surr: Dibromofluoromethane	5107	100	5000	0	102	74-125	5005	2.01	20	
Surr: Toluene-d8	5145	100	5000	0	103	78-123	5199	1.05	20	

The following samples were analyzed in this batch:

1302213-31A

Navajo Refining Company

Work Order: 1302213

Client:

Project: RO Discharge Sampling

QC BATCH REPORT

Batch ID: 6	7808 Instrument ID	UV-2450		Method	: SW901	4	(Dissolve	e)			
MBLK	Sample ID: WBLKS1-0214	13-67808				Units: mg/	Kg	Analy	sis Date: 2	/14/2013 0	3:00 PM
Client ID:		Run II	D: UV-245	0_130214F		SeqNo: 311	4919	Prep Date: 2/	14/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide		U	2.0								
LCS	Sample ID: WLCSS1-0214	13-67808				Units: mg/	Kg	Analy	sis Date: 2	/14/2013 0	3:00 PM
Client ID:		Run II	D: UV-245	0_130214F		SeqNo: 311	4920	Prep Date: 2/	14/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide		9.5	2.0	10		0 95	80-120		0		
LCSD	Sample ID: WLCSDS1-021413-67808					Units: mg/	Kg	Analy	sis Date: 2	/14/2013 0	3:00 PM
Client ID:		Run II	: UV-2450_130214F			SeqNo: 3114932		Prep Date: 2/	14/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide		9.2	2.0	10		0 92	80-120	9.	5 3.21	30	
MS	Sample ID: 1302213-12BM	s				Units: mg/	Kg	Analy	sis Date: 2	/14/2013 0	3:00 PM
Client ID: M	IW-118 (20)	Run II	D: UV-245	0_130214F		SeqNo: 311	4933	Prep Date: 2/	14/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide		9.377	1.8	8.846		0 106	75-125		0		
The following samples were analyzed in this batch:			13	302213-01E 302213-09B 302213-21B	13	302213-03B 302213-12B 302213-24B	13	302213-06B 302213-18B 302213-27B			

Client: Navajo Refining Company

Work Order: 1302213

				d: E300			(Dissolve	• •			
MBLK Sample ID:	WBLKS1-67821				Ur	nits: mg/	Kg	Analys	sis Date: 2	2/13/2013 0	6:20 PN
Client ID:	F	Run ID: ICS210	0_130213A		Seq	No: 311 :	3807	Prep Date: 2/1	3/2013	DF: 1	
Analyte	Resul	t PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	2.63	5.0									J
Fluoride	L	J 1.0									
Nitrogen, Nitrate (As N)	0.65	5 1.0									J
Nitrogen, Nitrite (As N)	L	J 1.0									
Sulfate	L	5.0									
Surr: Selenate (surr)	47.69	1.0	50		0	95.4	85-115	C)		
LCS Sample ID:	WLCSS1-67821				Ur	nits: mg/	Kg	Analys	sis Date: 2	2/13/2013 0	6:35 PN
Client ID:	F	Run ID: ICS210	0_130213A		Seq	No: 311 :	3808	Prep Date: 2/1	3/2013	DF: 1	
Analyte	Resul	t PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	218.3	3 5.0	200		0	109	90-110	()		
Fluoride	36.81	1.0	40		0	92	90-110	C)		
Nitrogen, Nitrate (As N)	42.43	3 1.0	40		0	106	90-110	C)		
Nitrogen, Nitrite (As N)	43.2	2 1.0	40		0	108	90-110	()		
Sulfate	209.7	5.0	200		0	105	90-110	()		
Surr: Selenate (surr)	46.98	3 1.0	50		0	94	85-115	C)		
MS Sample ID:	1302386-02AMS				Ur	nits: mg/	Kg	Analys	sis Date: 2	2/13/2013 1	0:57 PN
Client ID:	F	Run ID: ICS210	0_130213A		Seq	No: 311 :	3826	Prep Date: 2/1	3/2013	DF: 5	
Analyte	Resul	t PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	447.7	7 23	455.4		0	98.3	75-125	()		
Fluoride	83.99	_	91.09		0	92.2	75-125	(
Nitrogen, Nitrate (As N)	92.65		91.09		0	102	75-125	C)		
Nitrogen, Nitrite (As N)	96.77		91.09		0	106	75-125	C)		
Sulfate	465.2		455.4	13.	54	99.2	75-125	C)		
Surr: Selenate (surr)	199.5	5 4.6	227.7		0	87.6	80-120	C)		

Work Order: 1302213

Project:

RO Discharge Sampling

jo Refining Company

QC BATCH REPORT

Batch ID: 6	6 7821 lı	nstrument ID ICS2100		Method	: E300		(Dissolve	e)			
MSD	Sample ID: 130	02386-02AMSD				Units: mg/	Kg	Analysi	is Date: 2/	13/2013 1	1:11 PM
Client ID:		Run ID:	ICS210	0_130213A	S	SeqNo: 311 :	3827	Prep Date: 2/13	3/2013	DF: 5	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride		452.7	23	454.4	0	99.6	75-125	447.7	1.11	20	
Fluoride		85.05	4.5	90.89	0	93.6	75-125	83.99	1.24	20	
Nitrogen, N	Nitrate (As N)	93.85	4.5	90.89	0	103	75-125	92.65	1.29	20	
Nitrogen, N	Nitrite (As N)	97.46	4.5	90.89	0	107	75-125	96.77	0.707	20	
Sulfate		469.6	23	454.4	13.54	100	75-125	465.2	0.954	20	
Surr: Se	elenate (surr)	202.4	4.5	227.2	0	89.1	80-120	199.5	1.43	20	
The following samples were analyze		analyzed in this batch:	13 13	302213-01E 302213-09B 302213-21B 302213-30D	1302	2213-03B 2213-12B 2213-24B	13	02213-06B 02213-18B 02213-27B			

Work Order: 1302213

Project: RO Discharge Sampling

Batch ID: R142774 Instrument ID Balance1 Method: SW3550 (Dissolve) DUP Sample ID: 1302213-20ADUP Units: wt% Analysis Date: 2/13/2013 02:45 PM Prep Date: DF: 1 Client ID: MW-119 (9) Run ID: BALANCE1_130213B SeqNo: 3113511 **RPD** SPK Ref Control RPD Ref Value Limit Value Limit Qual Analyte Result PQL SPK Val %REC %RPD Percent Moisture 17.39 0.010 0 0 0-0 17.86 2.65 20 The following samples were analyzed in this batch: 1302213-01E 1302213-02A 1302213-03B 1302213-04A 1302213-05A 1302213-06B 1302213-07A 1302213-08A 1302213-09B 1302213-10A 1302213-11A 1302213-12B 1302213-15D 1302213-13A 1302213-14A 1302213-16D 1302213-17A 1302213-18B

1302213-20A

1302213-19A

QC BATCH REPORT

Work Order: 1302213

Project: RO Discharge Sampling

Batch ID: R142775	Instrument ID E	Balance1 Method:			d: SW35 !	50		(Dissolve	e)			
DUP Samp	ole ID: 1302305-10BDU I	P				Uı	nits: wt %	,)	Analysi	s Date: 2/	13/2013 0	3:25 PM
Client ID:		Run ID: BAI		BALANCE1_130213C			No: 311 :	3534	Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Percent Moisture		18.14	0.010	0		0	0	0-0	17.01	6.44	20	
The following sam	ples were analyzed in t	this batch:	1	302213-21B 302213-24B 302213-27B	13	30221	13-22A 13-25A 13-28A	13	02213-23A 02213-26A 02213-29A			

QC BATCH REPORT

Date: 18-Feb-13 **ALS Environmental**

Client: Navajo Refining Company **QUALIFIERS, RO** Discharge Sampling **Project:** ACRONYMS, UNITS

WorkOrder: 1302213

wt%

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
В	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
Н	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
Acronym	Description
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
Units Reported	d Description
μg/Kg-c	lry Micrograms per Kilogram - Dry weight corrected
mg/Kg-c	lry Milligrams per Kilogram - Dry weight corrected
mg/L	Milligrams per Liter

Sample Receipt Checklist

Client Name: NA				Date/Time I	Received	: <u>06-</u>	Feb-13	08:40			
Work Order: 13	02213				Received by	y:	JB/	<u> </u>			
	ed by Lohnnie B. Wlen eSignature soil/water	12	2-Feb-13 Date	Re	viewed by:	eSignatu	ure				Date
	ALS.HS										
Shipping container	/cooler in good condition?		Yes	✓	No 🗆	Not	Present				
Custody seals inta	ct on shipping container/cooler	?	Yes	✓	No 🗌	Not	Present				
Custody seals inta	ct on sample bottles?		Yes		No 🗌	Not	Present	✓			
Chain of custody p	resent?		Yes	✓	No 🗌						
Chain of custody s	igned when relinquished and re	eceived?	Yes	✓	No 🗌						
Chain of custody a	grees with sample labels?		Yes	✓	No 🗌						
Samples in proper	container/bottle?		Yes	✓	No 🗌						
Sample containers	intact?		Yes	✓	No 🗌						
Sufficient sample v	volume for indicated test?		Yes	✓	No 🗌						
All samples receive	ed within holding time?		Yes	✓	No 🗌						
Container/Temp B	ank temperature in compliance	e?	Yes	✓	No 🗌						
Temperature(s)/Th	ermometer(s):		1.6 C,1	.0 C,1.1	C,1.3 C/uc		<u>IR 1</u>				
Cooler(s)/Kit(s):			3747/30	040/330	6/4185						
Date/Time sample	(s) sent to storage:		2/6/13	18:00							
Water - VOA vials	have zero headspace?		Yes	✓	No	No VOA	vials sub	mitted			
Water - pH accepta	able upon receipt?		Yes	✓	No 🗌	N/A					
pH adjusted?			Yes		No 🗸	N/A					
pH adjusted by:			-								
Login Notes:	MW-118(5) no time on COCc samples are in WO 1302223	collected 02/4/13 @	09:45; (COC not	relinquished	d by clien	t ; Radiun	n fractio	on soil		
							:				
Client Contacted:	J	Date Contacted:			Person	Contacte	ed:				
Contacted By:	I	Regarding:									
Comments:											
CorrectiveAction:											
									SI	RC Page	e 1 of 1

63 of 66



Cincinnati, OH +1 513 733 5336

Everett, WA +1 425 356 2600

Fort Collins, CO +1 970 490 1511

+1 616 399 6070

Holland, MI

Chain of Custody Form

_					
٠ ا			_	-	
. J. F	'aae	- 1	nf		
1.	-5-		_0,		
	_				

COC ID: 72333

1302213

NAVAJO REFINING: Navajo Refining Company

Project: RO Discharge Sampling Environmental ALS Project Manager: **Customer Information Project Information** Purchase Order Project Name RO Discharge/Sampling Α VOC (8260) NIN GW List Work Order Project Number 128823 В GRO (8015M) Company Name Navajo Refining Company Bill To Company Navajo Refining Company С DRO (8015M) Send Report To Robert Combs Invoice Attn Robert Combs D ORO (8015M) 501 East Main 501 East Main E LL SVOC (8270) NW GW List Address Address F LONG LIST Total Metals (602077000) RCRA-B City/State/Zip Artesia, NM 88211 City/State/Zip G Artesia, NM 88211 Dissolved Metals (6020/7000) RCRA 8 Phone (575) 748-13733 Phone Н (575) 748-6733 Fax (575) 746-5421 Fax (575) 746-5421 Moisture e-Mail Address e-Mail Address TINGGOPING (PITATISTING GLOW SIM DIGE) No. iande Anions Sample Description Date Time Matrix Pres. # Bottles Α В C F Hold Soi 3 X CHIC PARC 5 1000 6 1010 X 7 8 9 3 Sampler(s) Please Print & Sign Shipment Method Required Turnaround Time: (Check Box) Results Due Date: Other Std 10 WK Days ☐ 5 WK Days 2 MK Days 24 Hour Relinquished by: Received by Notes: 10 Day TAT. Dissolved Metals Field Filtered Relinquished by: Received by (Laboratory): Cooler ID Cooler Temp. QC Package: (Check One Box Below) .ogged by (Laboratory): Level II Std OC Date: TRRP CheckList Time: Checked by (Laboratory): Level III Std QC/Raw Data | TRRP Level IV Level IV SW846/CLP reservative Key: 1-HCI 2-HNO₂ 3-H2SO4 4-NaOH 5-Na,S,O3 6-NaHSO 7-Other 8-4°C 9-5035 Olher / EDD

ite: 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.



Cincinnati, OH +1 513 733 5336

Everett, WA +1 425 356 2600 Fort Collins, CO +1 970 490 1511

+1 616 399 6070

Holland, MI

Chain of Custody Form

Page 2 of 3

COC ID: 72326

Houston, TX +1 281 530 5656 Middletown, PA

+1 717 944 5541

Spring City, PA +1 610 948 4903 Salt Lake City, UT +1 801 266 7700

+1 304 356 3168

South Charleston, WV

York, PA +1 717 505 5280

Environmental Customer Information						ALS Project Manager														
C	Customer Information	on			Projec	ct Informa		දැල්≅ යංගටයටු පමණි 	superej™ Gidel	- P 1092 P 7653	ander Grissel	Pa	ramet	: Dest Y L U "Lister L L	A . C. C. C. L. C.	Reques		Analy	sis	and the second second second second
Purchase Order		,	Pro	oject Name	RO	Discharge/	Sampling	g		A	VC	C (826	0) NW	GW Lis	st					
Work Order	man (Marine) ar vin alle and a mate amo à l'un retto familie anno anno anno anno moderni a vin dell'est d'a l'un rec	**************************************	Proje	ct Number	128	823			L-0.7 SALON - 17 TE L VI EMPLOSE - 12 VIII.	В	GF	(801	5M)							Administration and American American American
Company Name	Navajo Refining Co	mpany	Bill To	Company	Nav	rajo Refining	Compa	ıny		C	DR	O (801	5M)	MARKETON OF THE POST OF	### V 16. F * WIRLEMON (************************************				-	
Send Report To	Robert Combs	and the control of th	ir	nvoice Attn	Rot	ert Combs			n notice Abbonium of the name of a transport	D	OF	O (801	5M)	v,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,				1.6600.01106.00	***************************************	AND AND AND A STREET AND ADDRESS OF THE PARTY.
	501 East Main				501	East Main		AND AND A COST THE PARTY OF THE		E	LL	svoc	(8270)	NM GI	∧' List					Australia and Austria (Austria) (Aus
Address				Address						F	Tot	al Meta	als (60 :	20/7000	H RSRA	-a - /	L 0 A	q L.	3+	TO SEE SEE SEE SEE SEE SEE SEE SEE SEE SE
City/State/Zip	Artesia, NM 88211		City	//State/Zip	Arte	esia, NM 88	211			G	Dis	solved	Metals	(6020/	7000) R	CRA 8	<u> </u>	ל		
Phone	(575) 748-6733	V		Phone	(57	5) 748-6733			200 mily 100	H	- 70	5 >-	Ra	div	<u></u>				:	
Fax	(515) 746-5421	TO COMPANY AND		Fax	(57	5) 746-5421		***************************************			Nio	isture	nen naven en kente		£					
e-Mail Address			e-Ma	ail Address					41 TO THE TOTAL PROPERTY AS A STATE OF THE S	ij	Pin	gerprin	(PIAN	O/Sp £	Srav, Sir	n Dist)	- A	vio c	ις , (- anide
o.	Sample Description Date					Matrix	Pr	es.	# Bottles	Α	В	/ C	D	E	F	G	Н		J u	Hold
I & HW					140	Soil	-		(Χ		
2 8 MW	(05) 811-		1	14	57	Soil			3	-		-			X		Χ	X	x	
3 MW	-118 (22)			12	137	١ ١			l,		and the second			-				X		
4 MW.					{ 37				İ									大		
	1-118 (25)			14	35	1			5	Х	x	x	Х	X	X		K	K	×	
6 HW.	7			wc) <u>~</u>			,	5	Х	χ	X	X	X	X		X	Х	X	
7 MW	(S) PI-6				5	1	$\top 1$		5									Χ		
8 Mu	N-119 (S)				20	1			3	-					X		X	χ	人	
····	LW-119 (7)) .	}	11.	30				1									X		
0.51	MUN-19 (9)		1	[1]	35		1		١									4		
impler(s) Please Print & Sign Shipment M			hipment Metl	nod	Red			nd Time: (Med Republic		c	itier WK Da				sults (Due Da	ie:		
elinquished by: Date: Time: Second Rece			Recei	iget lyjer		_vr St	td 10 W	(Days	5 W Notes:	K Days			1-0	24 Hot	1975 1986 90	Filtor				
1/4/2 0000 1				The state of the s											000000000000000000000000000000000000000	· ·				
lelinquished by:	•	Date:	ime:	Pecel	eceived by (Laboratory):				Cooler ID Cooler Temp. QC Package: (Check						ox Belov	, , , , , , , , , , , , , , , , , , ,	RP CheckLis			
ogged by (Laboratory):		Date:	Time:	Check	ed by (La	boratory):	iazio zganaso Agantianos	i filozofia Sentingon					c-//1500000	wik Ma	Lev	el ill Std	QC/Ra			RP Level IV
Preservative Key:	Preservative Key: 1-HCl 2-HNO₃ 3-H₂SO₄ 4-NaOH 5-Na₂S₂O₃ 6-N				6-NaHSO₄ 7-Other 8-4°C 9-5035								(2) (1) (1) (1) (1) (1) (1) (1) (1) (1) (1		el IV SW er / EDD		p	<u> </u>		

ote: 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.



Cincinnati, OH +1 513 733 5336

Everett, WA

Holland, Mi +1 425 356 2600 +1 616 399 6070

Fort Collins, CO

+1 970 490 1511

Chain of Custody Form

COC ID: 72210

Houston, TX +1 281 530 5656 Middletown, PA

+1 717 944 5541

Spring City, PA +1 610 948 4903

South Charleston, WV +1 304 356 3168

Salt Lake City, UT +1 801 266 7700

York, PA +1 717 505 5280

Enviro	Enuironmental Customer Information						(80) (20) (20)	ALS		<u>ム </u>					ALS V	Vork O	rder#	f:		10000	
(Customer Information	1				Projec	t Inforn	nation					Par	amet	er/Met	hod Re	eques	t for /	Analys	is	
Purchase Order			ı	Project N	lame	RO	Discharge	e/Sampl	ing		Α	VOC	(8260)) MW G	GW List						
Work Order	** Chana di A. Than a' Anni Ad Y an Chanadh Anni Anni Anni Anni Anni Anni Anni Ann	n than a define at the think at the terms and a vice function from the vice constitute at the	Pro	oject Nui	nber	1288	23				В	GRO	O (8015	M)	***************************************			A POPENSON PROPERTY AND	work management of		
Company Name	Navajo Refining Comp	oany	Bill	To Com	pany	Nava	jo Refini	ng Com	pany		c	DRO	(8015	M)							
Send Report To	Robert Combs	- Madelmani (1977) and a tracking of a stranging A. of 1977 (A. A. A		Invoice	Attn	Robe	ert Comb	s	The second secon	A MARIAN A BOTTON OF A PRINTER P. P. MARIANT	D	ORG) (8015	M)					:	:	
Address	501 East Main			Add	ress	501	East Mai	n	alsh te es han de fi me he anh mand han de di fe es		E				NM GW		. ,			<u>:</u>	
			1000 A	and the state of t		or court is a second or reserve to	TO SECURITION OF THE POSSESSION					,,,-,	,-		317000)	~~~		-0n	q Li	ist_	NO.01100410-110410-1-0001-1-0001-1-0001
City/State/Zip	Artesia, NM 88211			City/State	(2000) 12 (1) (2000) 2000		sia, NM				G				6020/70		RA 8		<u> </u>		
Phone	(575) 748-6733			Pt	none	(575	748-67	33		***************************************	H	108	r	(ad	برديا	1			:		*************************
Fax	(575) 746-5421	TRANSMINISTRA FORMANISTRA AND CONTRACTOR OF THE TRANSMINISTRA AND AND AND AND AND AND AND AND AND AN	1/60		Fax	(575)	746-54:	21			1	Mois	sture	~~~						<u> </u>	
e-Mail Address			, Marcus	Mail Add						In	J		,		¥Sp Gr				inide		Inions
No.	Sample Description		Appropriate Communication Comm	ite	100000000000000000000000000000000000000	me	Matri	X	Pres.	# Bottles	A	В	С	D	E	F	G	HΥ		J	Hold
	N-119 (12)		21	4/13 1145			501	l		3			-			X		X	X	メ	
	N-119(12)	~	** (US		16	95													X		
3	MW-119 (14)		27	16	00,	<u> </u>			1	ļ								X		
4	MW-119(1	<u>s)</u>			الر	-00c				3			[X		X	X,	乂	
5	MW-19 (17	4)		~~~	16	015				İ									火		
6	MW-19 (17	.9) (((المان					The Laboratory and the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of th								X		
7	MW-119	(20)			ار	oll				3,						X		X	X	X	
8	MW-119	(22)			((017				- (<u> </u>								×		
9	MW-119	(24)	~~~	******************************	16	,৻ঠ				ļ:			- Annual Maria						X		
10	MW-W	' '		,		050				5	X	X	X	久	X Y	K		X	Χ	久	
Sampler(s) Please Pi	rint & Sign			Shipme	nt Meth	od دسم	f			und Time:							Res	ults D	ue Date	3:	
Relinquished by:	<u> </u>	Date: 263	Time:	40	Receive	by			Std 10 W	i/mays	5 Wh			VK Days TAT. D	s)issolved	24 Hour I Metals	Field F	Filtered	<u> </u>	i Interview	
Relinquished by:	1	Date:	Time: Receive				oratory):			ATTOCKETORIA ARRESTA ANTICALAS ESTABARA	Coo	ler ID	Coole	r Temp.	QC P				x Below		
Logged by (Laboratory)		Date:	Time:	4.00		Checked by (Laboratory):									Level	il Sid Q(III Sid Q IV SVV84	C/Raw	Data	TR! TR!	RP CheckList	
Preservative Key:	1-HCI 2-HNO₃ 3	-H₂SO₄ 4-Na	OH 5	-Na₂S₂O	a ₂ S ₂ O ₃ 6-NaHSO ₄ 7-Other 8-4°C 9-5035				Other / EDD_												

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

Copyright 2011 by ALS Environmental.



29-Mar-2013

Robert Combs Navajo Refining Company PO Box 159 Artesia, NM 88211

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

Re: RO Discharge Sampling Work Order: 1302223

Dear Robert,

ALS Environmental received 26 samples on 06-Feb-2013 for the analyses presented in the following report.

This is a REVISED REPORT. Please see the Case Narrative for discussion concerning this revision.

The total number of pages in this revised report is JJ.

Regards,

Electronically approved by: Sonia West

Sonia West

Sonia West Project Manager

Certificate No: T104704231-12-10

ALS Environmental

Date: 29-Mar-13

Client: Navajo Refining Company
Project: RO Discharge Sampling

Work Order: 1302223

Work Order Sample Summary

Lah Samn ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1302223-01	MW-118 (1)	Soil	100 1100	2/4/2013 09:20	2/6/2013	
1302223-02	MW-118 (5)	Soil		2/4/2013 09:05	2/6/2013	
1302223-03	MW-118 (10)	Soil		2/4/2013 10:10	2/6/2013	
1302223-04	MW-118 (15)	Soil		2/4/2013 14:50	2/6/2013	
1302223-05	MW-118 (20)	Soil		2/4/2013 14:52	2/6/2013	
1302223-06	MW-118 (25)	Soil		2/4/2013 14:35	2/6/2013	
1302223-07	MW-119 (1)	Soil		2/4/2013 11:05	2/6/2013	
1302223-08	MW-119 (5)	Soil		2/4/2013 11:20	2/6/2013	
1302223-09	MW-119 (10)	Soil		2/4/2013 11:45	2/6/2013	
1302223-10	MW-119 (15)	Soil		2/4/2013 16:08	2/6/2013	
1302223-11	MW-119 (20)	Soil		2/4/2013 16:11	2/6/2013	
1302223-12	MW-119 (25)	Soil		2/4/2013 16:20	2/6/2013	
1302223-13	MW-117 (1)	Soil		1/31/2013 08:55	2/6/2013	
1302223-14	MW-117 (5)	Soil		1/31/2013 09:15	2/6/2013	
1302223-15	MW-117 (10)	Soil		1/31/2013 10:30	2/6/2013	
1302223-16	MW-117 (15)	Soil		1/31/2013 15:20	2/6/2013	
1302223-17	MW-117 (20)	Soil		1/31/2013 15:25	2/6/2013	
1302223-18	MW-117 (25)	Soil		1/31/2013 15:40	2/6/2013	
1302223-19	RO-SB-1 (1)	Soil		1/31/2013 11:45	2/6/2013	
1302223-20	RO-SB-1 (5)	Soil		1/31/2013 12:00	2/6/2013	
1302223-21	RO-SB-1 (10)	Soil		1/31/2013 12:50	2/6/2013	
1302223-22	RO-SB-1 (15)	Soil		2/1/2013 09:57	2/6/2013	
1302223-23	RO-SB-1 (20)	Soil		2/1/2013 09:40	2/6/2013	
1302223-24	RO-SB-1 (25)	Soil		2/1/2013 10:18	2/6/2013	
1302223-25	RO-SB-1 (30)	Soil		2/1/2013 10:10	2/6/2013	
1302223-26	RO-SB-1 (35)	Soil		2/1/2013 10:05	2/6/2013	

ALS Environmental

Date: 29-Mar-13

Client: Navajo Refining Company
Project: RO Discharge Sampling

Project: RO Discharge Sampling Case Narrative

Work Order: 1302223

This report has been revised to include the Radium 226 and 228 data for samples RO-SB-1 (1) through RO-SB-1 (35).

The analyses for Radium 226 and Radium 228 were subcontracted to ALS Environmental in Ft. Collins, CO.

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302223

 Sample ID: MW-118 (1)
 Lab ID: 1302223-01

Collection Date: 2/4/2013 09:20 AM Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 29-Mar-13

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached013/15/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302223

 Sample ID: MW-118 (5)
 Lab ID: 1302223-02

Collection Date: 2/4/2013 09:05 AM Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 29-Mar-13

MISCELLANEOUS ANALYSIS
Method: NA

Method: NA

Analyst: SUB

Miscellaneous Analysis
See Attached
0
1
3/15/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302223

 Sample ID: MW-118 (10)
 Lab ID: 1302223-03

Collection Date: 2/4/2013 10:10 AM Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 29-Mar-13

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached013/15/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling

 Sample ID:
 MW-118 (15)
 Lab ID:
 1302223-04

 Collection Date:
 2/4/2013 02:50 PM
 Matrix:
 SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 29-Mar-13

Work Order: 1302223

MISCELLANEOUS ANALYSIS
Method: NA

Method: NA

Analyst: SUB

1 3/15/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302223

 Sample ID: MW-118 (20)
 Lab ID: 1302223-05

Collection Date: 2/4/2013 02:52 PM Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 29-Mar-13

MISCELLANEOUS ANALYSIS
Method: NA

Method: NA

Analyst: SUB

1 3/15/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302223

 Sample ID: MW-118 (25)
 Lab ID: 1302223-06

Collection Date: 2/4/2013 02:35 PM Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 29-Mar-13

MISCELLANEOUS ANALYSIS
Method: NA

Method: NA

Analyst: SUB

1 3/15/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302223

 Sample ID: MW-119 (1)
 Lab ID: 1302223-07

Collection Date: 2/4/2013 11:05 AM Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 29-Mar-13

MISCELLANEOUS ANALYSIS
Method: NA

Method: NA

Analyst: SUB

Miscellaneous Analysis
See Attached
0
1
3/15/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302223

 Sample ID: MW-119 (5)
 Lab ID: 1302223-08

Collection Date: 2/4/2013 11:20 AM Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSIS
Method: NA

Method: NA

Analyst: SUB

1 3/15/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302223

 Sample ID: MW-119 (10)
 Lab ID: 1302223-09

Collection Date: 2/4/2013 11:45 AM Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSIS
Method: NA

Method: NA

Analyst: SUB

1 3/15/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302223

 Sample ID: MW-119 (15)
 Lab ID: 1302223-10

Collection Date: 2/4/2013 04:08 PM Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSIS

Method: NA

Method: NA

Analyst: SUB

Miscellaneous Analysis

See Attached

0 1 3/15/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302223

 Sample ID: MW-119 (20)
 Lab ID: 1302223-11

Collection Date: 2/4/2013 04:11 PM Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSIS

Method: NA

Method: NA

Analyst: SUB

Miscellaneous Analysis

See Attached

0 1 3/15/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302223

 Sample ID: MW-119 (25)
 Lab ID: 1302223-12

Collection Date: 2/4/2013 04:20 PM Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached013/15/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302223

 Sample ID: MW-117 (1)
 Lab ID: 1302223-13

Collection Date: 1/31/2013 08:55 AM

Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached013/6/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302223

 Sample ID: MW-117 (5)
 Lab ID: 1302223-14

Collection Date: 1/31/2013 09:15 AM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSIS
Method: NA

Method: NA

Analyst: SUB

Miscellaneous Analysis
See Attached
0 1 3/6/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302223

 Sample ID: MW-117 (10)
 Lab ID: 1302223-15

Collection Date: 1/31/2013 10:30 AM Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSIS Method: NA Analyst: SUB

Miscellaneous Analysis See Attached 0 1 3/6/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302223

 Sample ID: MW-117 (15)
 Lab ID: 1302223-16

Collection Date: 1/31/2013 03:20 PM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached013/6/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302223

 Sample ID: MW-117 (20)
 Lab ID: 1302223-17

 Sample ID:
 MW-117 (20)
 Lab ID: 13022

 Collection Date:
 1/31/2013 03:25 PM
 Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSIS

Method: NA

Method: NA

Analyst: SUB

Miscellaneous Analysis

See Attached

0 1 3/6/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302223

 Sample ID: MW-117 (25)
 Lab ID: 1302223-18

Collection Date: 1/31/2013 03:40 PM

Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSIS
Method: NA

Method: NA

Miscellaneous Analysis

See Attached

0

1

3/6/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302223

 Sample ID: RO-SB-1 (1)
 Lab ID: 1302223-19

Collection Date: 1/31/2013 11:45 AM

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSIS
Method: NA

Method: NA

Analyst: SUB

Miscellaneous Analysis
See Attached
0 1 3/6/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302223

 Sample ID: RO-SB-1 (5)
 Lab ID: 1302223-20

Collection Date: 1/31/2013 12:00 PM

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSIS
Method: NA

Method: NA

Analyst: SUB

Miscellaneous Analysis
See Attached
0 1 3/6/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302223

 Sample ID: RO-SB-1 (10)
 Lab ID: 1302223-21

Collection Date: 1/31/2013 12:50 PM Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSIS

Method: NA

Method: NA

Analyst: SUB

Miscellaneous Analysis

See Attached

0 1 3/6/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302223

 Sample ID: RO-SB-1 (15)
 Lab ID: 1302223-22

Collection Date: 2/1/2013 09:57 AM Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSIS

Method: NA

Method: NA

Analyst: SUB

Miscellaneous Analysis

See Attached

0 1 3/6/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302223

 Sample ID: RO-SB-1 (20)
 Lab ID: 1302223-23

Collection Date: 2/1/2013 09:40 AM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSIS
Method: NA

Method: NA

Analyst: SUB

Miscellaneous Analysis
See Attached
0 1 3/6/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302223

 Sample ID: RO-SB-1 (25)
 Lab ID: 1302223-24

Collection Date: 2/1/2013 10:18 AM

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached013/6/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302223

 Sample ID: RO-SB-1 (30)
 Lab ID: 1302223-25

Collection Date: 2/1/2013 10:10 AM Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSIS

Method: NA

Method: NA

Analyst: SUB

Miscellaneous Analysis

See Attached

0 1 3/6/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302223

 Sample ID: RO-SB-1 (35)
 Lab ID: 1302223-26

Collection Date: 2/1/2013 10:05 AM Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSIS

Method: NA

Method: NA

Analyst: SUB

Miscellaneous Analysis

See Attached

0 1 3/6/2013

Client: Navajo Refining Company
Project: RO Discharge Sampling

QUALIFIERS,
ACRONIZACIO

Project: RO Discharge Sampling
WorkOrder: 1302223

ACRONYMS, UNITS

Workorder.	100222
Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
В	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
Н	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
Acronym	Description
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
Units Reported	Description

Sample Receipt Checklist

Client Name:	NAVAJO REFINING		Date/Time Rece	ived: <u>06-Feb-1</u> ;	3 00:00
Work Order:	1302223		Received by:	<u>JBA</u>	
Checklist comp	eSignature	18-Feb-13 Date	Reviewed by:	ignature	Date
Matrices: Carrier name:	soil/water FedEx Priority Overnight				
Shipping contain	iner/cooler in good condition?	Yes 🔻	No 🗆	Not Present	
Custody seals i	intact on shipping container/coole	er? Yes ▼	No 🗆	Not Present	
Custody seals i	intact on sample bottles?	Yes	No □	Not Present 🗸	
Chain of custoo	dy present?	Yes 🔻	¹ No □		
Chain of custoo	dy signed when relinquished and	received? Yes ▼	No 🗆		
Chain of custoo	dy agrees with sample labels?	Yes 🔽	No 🗆		
Samples in pro	per container/bottle?	Yes 🗹	No 🗆		
Sample contain	ners intact?	Yes 🔽	' No 🗆		
Sufficient samp	le volume for indicated test?	Yes ⊻	' No 🗆		
All samples rec	eived within holding time?	Yes 💌	No 🗆		
Container/Tem	p Blank temperature in compliand	ce? Yes ▼	¹ No □		
Temperature(s))/Thermometer(s):	1.6 C,1.0 C/uc	C,1.1 C,1.3 C,2.7 C,0.6	<u>IR 1</u>	
Cooler(s)/Kit(s)	:		0/3306/4185/7034/4672	<u></u> <u>2</u>	
Date/Time sam	ple(s) sent to storage:	2/6/13 17	:30; 2/4/13 09:23:02/4/1	13 10:00	
Water - VOA vi	als have zero headspace?	Yes ¥	No No No No	/OA vials submitted	
Water - pH acc	eptable upon receipt?	Yes •			
pH adjusted? pH adjusted by	:	Yes	No ✓ N/A		
Login Notes:		soil samples; WO 1302079-01, 2223-19 thru -21were sent ahea)2223-13 thru -15; V	<u>VO 1302082 -</u>
====	========	=======	======	=====	======
Client Contacte	ed:	Date Contacted:	Person Cont	acted:	
Contacted By:		Regarding:			
Comments:					
CorrectiveActio	on:				SRC Page 1 of 1



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

NAVAJO REFINING: Navajo Refining Company

Enviro	nmental		i	erganisalis es			<u> 1233:</u>	-			Project	· RO Dis	charge S	:amplii	na .
	Customer Information			Project I	o A Oforma	tion	ct Manage	1. 100 110	255						
Purchase Order		Projec	t Name	RO Disc				A	V00.0	. 1					
Work Order		Project N		128823	112. 30/02	amping									
Company Name	Navajo Refining Company	Bill To Co			- Aimin			В	GRO (8					 -	
Send Report To	Robert Combs	- 10 10 10 10 10 10 10 10 10 10 10 10 10	ce Attn	Navajo R	·····	ompany		С	DRO (8			*** 			
	501 East Main	in voi	ce Attri	Robert C				D	ORO (8015M)						
Address	SOT Last Holl	· A	ddress	501 East	Main			E	LL SVO	C (8270)	NM GW List				1
City/State/Zip	*							F	Total M	etals (6 02	077000) ACR A	ac LI	DING	L15-	T
	Artesia, NM 88211	City/Sta	ite/Zip	Artesia, N	M 882	11	****	G	Dissolved Metals (6020/7000) RCRA 8					-	
Phone	(575) 748-6733		Phone	(575) 748	3-6733			Ĥ	108-	Rad	ioM				
Fax	(575) 746-5421		Fax	(575) 746	5-5421			1	Moisture						
e-Mail Address	The property of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of	e-Mail Ad	ddress					ű	Fingerpr	ne (PiAn	TOP Gray, Sin	-Dist) (Czand	ا م	nions
No.	Sample Description	Date	200 1 20 2 20 1 2 2 2 2 2 2 2 2 2 2 2 2	A STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STA	/latrix	Pres.	# Bottles	A	В (C D	E F	G 1	H) I	<u> </u>	Hold
1 3 HW-	-118 (1)	2/4/13			oil		5	X	XX	X	XX	•	XX	X	
2 & MW	-118(3)		Q	130	1								X		
3 MW	-118 (5)						3				X	`	XX	X	
4 M	N-118 (7)		0	140			١						\(\times \)		
	W-18 (9)		ID	00			1								
6 H1	W-118510)			10	1		3	1			X				
7 H	W-118(12)			45			1	1					XX	<u> </u>	
8 1	1W-118 (M)			1447									1		
9	11718 (12)		150世								X		X		
10 ~	1W-118 (17)				-		3					<u>}</u>	K X	X	· · · · · · · · · · · · · · · · · · ·
Sampler(s) Please Pr		Shipm	ent Metho	53 od	Requ	ired Turna	round Time: (Check I	Вох)	0.6788990	\$1566a. 66060re	Besil	ts Due Dat		No. 10 10 10 12 11 11 11
				11			NK Days			Olher 2 WK Day:	24 Hour	7.17 BAR 103			
Relinquished by:	Date: 2/6/6	Time: SSS	Receive			~		Notes:			Dissolved Metal	s Field Filt	ered		147 T 1 (100 T) (144 J 147 J
Relinquished by:	Date:	Time:	Refeive	d by (Laborat	ory):			Coo	ler ID C	ooler Temp					
Logged by (Laboratory):	Date:	Time:	Checke	d by (Laborate	ory):			- 14-7. iv			Level Level	l II Std QC I III Std QC/F	Raw Data	_] TRRE	CheckList
Preservative Key:	1-HCI 2-HNO ₃ 3-H ₂ SO ₄ 4-Na	OH 5-Na₂S₂¹)	NaHSO₄	7 0+50	8-4°C	9-5035				Level	IV SVV846/	CLP		
	7 2 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	<u></u>	C3 (C)	vai 100 ₄	r-outer	0-4 U	9-0035	\$18.60 V	£35.00 FE		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.

Copyright 2011 by ALS Environmental.



Sarumau, Off +1 513 733 5336

Everett, WA +1 425 356 2600 +1 970 490 1511 Holland, MI +1 616 399 6070

Fort Collins, CO

Chain of Custody Form

Page 2 of 3

Houston, TX +1 281 530 5656 Middletown, PA

+1 717 944 5541

Salt Lake City, UT +1 801 266 7700

Spring City, PA +1 610 948 4903

South Charleston, WV +1 304 356 3168

York, PA +1 717 505 5280

coc ID: 72326

C	ustomer Information	n			18	D==:-				t Manage	er:				the few of the A the	THE GARAGEST CO.	Orde	White Tire		2007 2007 2007	
Purchase Order	dotomes intormation	1 1		923 A. G.	XIV.		ct Inforn				:::::::::::::::::::::::::::::::::::::::	· .	Pa	arame	ter/M	ethod	Reque	est for	Analy	/sis	*
			#1780 1770	Project I	Name	RC	Discharg	e/Samp	ling		Α	V	OC (82)	60) NW	GW L	ist					
Work Order			r	Project Nu	ımber	128	823				В	G	RO (80	15M)					* 1		
ompany Name	Navajo Refining Com	npany	В	ill To Com	ipany	Nav	/ajo Refini	ing Com	рапу		Č	DI	RO (80	15M)							
Send Report To	Robert Combs			Invoice	e Attn	Ro	oert Comb	os		***************************************	D	0	RO (80	15M)				··			
Address	501 East Main			Ado	dress	501	East Ma	in			E		. svoc		·						
Out on the second											F	To	tal Met	als (60	20/7'00	0) RCR	A B.	Loi	ng L	i 7 +	
City/State/Zip	Arlesia, NM 88211			City/Stat	e/Zip	Arte	esia, NM	88211			G	Di	ssolved	Metals	(6020	/7000) (RCRA 8)		
Phone	(575) 748-6733		1 (3) 1 (4) 2 (4)	P	hone	(57	5) 748-67	33			н	-71	Radium								
Fax	(575) 746-5421				Fax	(57	5) 746-54	21			1	M	oisture	1 '0	-ااا						
-Mail Address			E70.73.74	-Mail Ado	dress						J	riff.	gerprir	t (PIAN	i DiSp (Serv-Si	im Dist)	<i>ک</i> ر د	nior	· (
	Sample Description	(C. 62.74	124 137 1985 1 233	Date	C 1000 C 1000 S	ne	Matrix	6	Pres.	# Bottle	s A	В	⊹c	D	E.			В	1401	30	-ganid
MW.	-118 (19)		2/4	113	14	40	Soil			ſ.		1:							χ	25.2296250	
1 0M(1)^	(05) 811.		,		144	57	Soil		ſ	₹						χ		X	×	\ <u>\</u>	
«M/W·	118 (22)					37	1			1									X		
MW-	118 (24)				14				1	1					<u> </u>						
N 1	-118 (25)					35				5	- \-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\-\							V	人 火		
HW-	19 (1)		·		<u> </u>		Y				1/2	x	X	X.	X	X		X	~	×	
MW	-1				110			_	}—	5	_X_	X	X	X	X	义		X	X	X	
4 4	2-119 (5)					<u> </u>			}	3			-						X		
~	W-119 (7)			}	113			+		1			-			X		X	\mathcal{X}_{-}	ス	
	(P) PILGIS		(113	·				-		-		<u> </u>					X		
\ mpler(s) Please Pri				Shipme	nt Metho		□R	4 equired	Turnar	ound Time	Chaok	DAVI	Section (CERT)	SSESSION OF	810 CEV.80	o i distribusio ee			4	IV Com COM	
		and a second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second sec				1			Std 10	ound Time WK Days		IK Dave	\square_{2}°	Nher MK Da	ue - F	24 Ho		esults l	Jue Da	te:	
inquished by:	[Date:)///	Time:	840	Receivo	abyron.	75 m				Notes		10 Da	у ТАТ.	Dissolv	red Met		d Filter	ed		
inquished by:		Date	Time:	· •	Beceive	d by (La	ooratory):				Co	oler ID		ler Temp		Package				w)	Marajan ja
gged by (Laboratory):	1	Date:	Time:		Checker	d by (Lai	ooratory):									Lev	/el II SId	QC I QC/Ra	w Dala	TR	RP CheckL

2. I. 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.



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

Houston, TX +1 281 530 5656 Middletown, PA +1 717 944 5541

Spring City, PA +1 610 948 4903

South Charleston, WV +1 304 356 3168

Salt Lake City, UT +1 801 266 7700

York, PA +1 717 505 5280

coc ID: 72319

				Manage	G4 500 50	Sec. 25.	/数/台湾	是自然的一句	ALS W	ork Ow	10r #	14.多更数1	il gérise	andres of the state of the
Customer Information		Project Informat		a a san a taga	### No. 19 TT: (480; 147	7.22		design of the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest and the latest	1000 1000 1000 1	uest fo	r Δnah	reie	Maria Ba	
Purchase Order	Project Name	RO Discharge/Sa	ampling		A	VO) NW G				- Arica	7010	
Work Order	Project Number	128823			В		O (801							
Company Name Navajo Refining Company	Bill To Company	Navajo Refining C	Company		С) O (8015							
Send Report To Robert Combs	Invoice Attn	Robert Combs			D		O (8015							
501 East Main Address	Address	501 East Main			E	LL S	SVOC (8270) N	M GW L					
City/State/Zip Artesia, NM 88211	City/State/Zip	Artesia, NM 882	4 4		G				7 7000) R			ng L	<u>-ist</u>	
Phone (575) 748-6733	Phone	(575) 748-6733	! !		H			C3	020/700		8 / 8	<u> </u>		
Fax (575) 746-5421	Fax	(575) 746-5421			E.S.	100		<u>Sad</u>	ىرد:	·				
e-Mail Address	e-Mail Address	(575) 746-5421			.0 1 .040	<u></u>	sture							
Sample Description	6.3667 1-3676 1-3676	ime Matrix	Pres.	# Bottles	ଧ ଆ - A:		·		Sp Grav			٩٨١٥	le, f	Anions
MW-119 (15)	- 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10	45 soil		3	& 45 A 2	В	્ર- C ે	Di	11/2/2	F G	1 18214 24	1	្ស	Hold
9 MW-119(12)		205 1	ľ	>						Χ	X	X	X	
8 MW-119(14)												X		
MW-119(15)	1 1 .	06		\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\								X		
MW-19 (17)		000		<u>'</u> 3		-				<	X	X	X	·
MW-19(19)		015										上人		
(05) 711-WH	I	مالم المال		1								X		·
	1	011		3						Κ.	×	X	X	
		017				·						×		
MW-119 (24)		,ાઈ	1	<u> </u>	1.							X		
MW-llつ(ど) mpler(s) Please Print & Sign	Shipment Meth	07.0	ired Turnarou	5	X	X	<u>_X_</u>	and the feet and the first	XX		X	X	X	
			✓ Std 10 W		_ 5 WK			ier <u> </u>	24	Hour	Results	Due Da	te:	
	Receive				Notes:						eld Filtere	d		
inquished by: Date: T	ime: Receive	ed by (Laboratory):			Cool	er ID "	Coole	r Temp.	QC Pac	age: (Ch	eck One B	ox Belov	v)	
		d by (Laboratory): NaHSO ₄ 7-Other	8-4°C	9-5035			7.99		S	.evel II SI .evel III S	d QC id QC/Rav VV846/CL	v Data	TRR	RP CheckList RP Level IV

e: 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.

Express Package Service

NOTE: Service order has changed. Please

FedEx Priority Overnight Next business morning.* Friday shipments will be delivered on Monday enloss SATUROAY Delivery is selected.

FedEx Standard Overnight Next business afternoon." Saturday Delivery NOT available.

Packaging FedEx Envelope*

Next Business Day FedEx First Overnight

Pack packages FedEx E	ages up to 1: over 150 lbs., use apress Freight U	50 lbs. the new 5 Airbill.
S		
lable.		

Indirect Signature

644

fedex.com 1.800.GoFedEx 1.800.463.3339

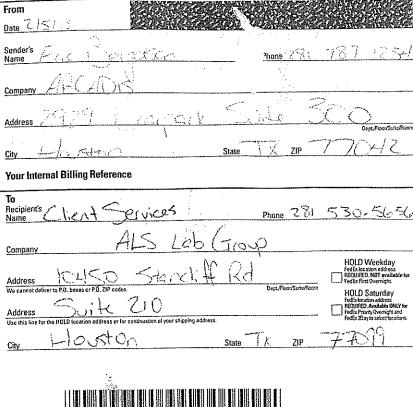
2 or 3 Business Days
FedEx 2Day A.M. Second business merning. Saturday Belivery NOT available.
FedEx 2Day Second business afternoon." Thursday stepments will be delivered on Menday unless SATURDAY Delivery is selected.
FedEx Express Saver Third business day." Saturday Delivery NOT available.

•				
Packaging · Dec	Jared value (limit \$500.			
FedEx Envelope*	FedEx Pak*	FedEx Box	FedEx Tube)X Other
Special Handling	and Delivery Sign	ature Options		
SATURDAY Delivery NOT available for FedEx Stand	dard Overnight, FedEx 20ay A.M.,	or FedEx Express Saver.	Jan 1900	

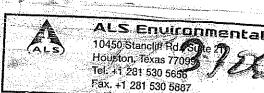
No Signature Requir Packago may be left without obtaining a signature for deliv		Direct Signatu Someone et recipie may sign for deliver	IFO nts address y, Fee applies	address, som address may	ignature skistle at recipient's eone at a neighboring sign for delivery, For liveries only, Foe applie
Does this shipment co	ntain dangen	ous goods?		residendariae	ичене з сину. тое аудине
Оле вох та	ist be checked.				
No Shipper's De	hed S	es Suppor's Declaration of required.	Dry I	Ce ,9,UN 1845	kg
Dangerous goods (including dry ice) or placed in a FedEx Express Brop Bo	cannot be shipped in IX.	FedEx packaging	[Cargo Aircra	aft Only
7 Payment Bill to:					Obtain recip.
<u></u>	Enter Fed	iEx Acct. No. or Cro	lit Card No. belo	w	Acet No.
Sender Acct No. in Section I will be billed	Recipient	Third Pa	arty 🔲	Credit Card	Cash/Che
	17				
Total Packages Total \	Weight		Cred	t Card Auch.	
	di lhs.	X-Local Control			

Rev. Date 1/12 . Part #167002 . 672012 FodEx . PRINTED IN U.S.A. SRF

Our Bability is limited to US\$100 unless you doctare a higher value. See the current FedEx Service Guide for details







			the control of the second		
****					7
CL	STÖDY SE	ΤΔΙ			**************************************
Date: 8 . S & S	22 Charles and The Control	99.562		SearBroken	Ar:
	Time:	600	Tight give A	-	1
Name:	SEKCE	ECEN		me and	*
Company:	ABIC				6
		Market and S			
the second second		Maria India.		- 60	*

Cash/Check

611

Express US Airbill Tracking 8013 8012 5570	Form 0215	a samueliska
From 7/5/13	4 Express Package Service •To most NOTE: Service order has changed, Please select care	For each once 10% has use the
Sender's Eric Gergersen Phone 281 787-1734	Next Business Day Feature First Overwint A safether to desprise the property of the con- today at the party of the con- today at the party of the con- today and the con- today of the party of the con- today of the party of the con-	2 Ord Büsiness Days FedEx ZDay A.M. Second business morning.* Saturday Delivery NUT available.
Company ARCADIST	FedEx Priority Overnight Nasa business morning: Friday shipments will be delivered on Manday unless SATURDAY Delivery is selected.	FedEx 2Day Second Business afternoon.* Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.
Address 2929 Drai park Vr Duite Dept. Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Processular Proc	FedEx Standard Overnight Next business effemoon.* Seturday Dosvery NOT available.	FedEx Express Saver Third business day.* Saturday Oelivery NOT available.
rin Houston State TX ZIP / 1047	5 Packaging *Declared value limit \$500.	<u>.</u>
Your Internal Billing Reference	FedEx Envelope* FedEx Pak*	FedEx FedEx Other
То	6 Special Handling and Delivery Sig	nature Options
Recipient's CLIENT SERVICES Phone 281 530-5656	SATURDAY Delivery NOT evailable for FodEx Standard Overnight, FodEx 20 by A.R.	f., or FedEx Express Saver.
Company ALS LABORATORY GROUP	Package may be left without Someone	Signature stracipient's address for delivery. For applies. Indirect Signature If no one is evalable at recipient's address, someone at a neighboring address may sign to delivery. For residential obtaines and the souther
Address 10450 STANCLIFF RD STE 210 HOLD Weekday Footbacks redden for the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the footback of the foot	Does this shipment contain dangerous good One hox must be chacked. Yes Yes Yes	
We cannot deliver to P.O. boxos or P.O. ZIP codes. Dept/Roor/Sufes/Room HOLD Saturday Folia foreign address	No Yes Yes Yes Supports Declaration Shipper's Declaration of required.	turation Dry Ice Oryico, 9, UN 1845 kg
Address FedEx Priority Chemight and	Dangerous goods (including dry lice) cannot be shipped in FedEx packs or placed in a FedEx Express Orop Box.	Cargo Aircraft Only
Use this line for the MOLD location address or for community or your supplies address.	7 Payment Bill to:	Obtain recip.
City HOUSTON State TX ZIP 77099-4338	Sender Enter Fed Ex Acct. N	a. or Credit Card No. belove Acct. No
	Acct Na in Section Recipient	Third Party Credit Card Cash/Chec

0455550778



Rov. Date 2/12 + Part #163134 + ©1394-2912 FedEx + PRINTED IN U.S.A. SRS

Our liability is limited to USS100 unless you declare a higher value. See the current FedEx Sei

CI	JSTODY SEAL	Seal Broken By:
ite: 2/3/13	Time: 1100	
im: 19-7	Ackema	Date:
Enpany:	RCADIS V.S.	

ALS Environmental 10450 Stancliff Ad., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5887

Dε

Package US: Airbill Express US: Airbill Fedex Number 8013 8012 5537	form 0215	e e e e e e e e e e e e e e e e e e e
From	4 Express Package Service • To arrow NOTE: Service order has changed. Please select care	locations. Packages up to 150 lbs. For packages arer 150 lbs., use the effully. Falls Express Freight US Aliabil.
Date 2/5//3	Next Business Day	2 or 3 Business Days
Sender's Eric Segersen Phone 281 787-1234	Enters por Lucrius recommande de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda del commanda de la commanda del commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda del commanda de la commanda de la commanda de la commanda del commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda de la commanda del commanda del commanda de la commanda del commanda del commanda del commanda del commanda del commanda del commanda del commanda del commanda del commanda del commanda del commanda del commanda del commanda del commanda del commanda del commanda del commanda del commanda del commanda del commanda del commanda del commanda del commanda del commanda del commanda del commanda del commanda del commanda del commanda del commanda del commanda del c	FedEx 2Day A.M. Second business marning." Sanday Delivery NOT available.
Company ARCADIS	FedEx Priority Overnight Next business marning." Friday shipments will be delivered an Monday unless SATURDAY Delivery is selected.	FedEx 2Day Second business afternoon.* Thursday shipments will be deficied on Monday unless SATURDAY Descript a selectud.
Address 2929 Orangark Suite 300	FedEx Standard Overnight Next business afternoon.* Seturday Delivery NOT available.	FedEx Express Saver Third business day, Sanurday Detreny NOT evallable.
LA A TIP TOUR	5 Packaging *Boclared value limit \$500.	3
City T 100510A State	FedEx Envelope* FedEx Pak*	FedEx FedEx Other
Your Internal Billing Reference		Outland
To	6 Special Handling and Delivery Si	dustare obcove
Recipient's CLIENT SERVICES Phone 281 530-5454	SATURDAY Delivery NOT available for FedEx Standard Overnight, FedEx 2Day A	.M., or FodEx Express Saver.
Company ALS LABORATORY GROUP	Dealers may be infrared Springs	t Signature a at recipients address I for delivery. Fine applies. Capital Signature If no one is available at recipients address, someone at a neighboring address may sign for delivery. For resignated deliveries only, few applies.
HOLD Weekday FedEx location address	Does this shipment contaîn dangerous goo	
Address 10450 STANCLIFF RD STE 210 Gept/Roor/Sule-Room Geografies Vernight	One box must be checked.	ecleration Dry Ice
We cannot deliver to P.O. baxes or P.O. ZIP codes. HOLD Saturday Footstandon siders The REQUISTO Available DNUY for	No As per attached Shipper's Declaration. Shipper's Declaration.	
Addrage Finder Priority Grennight and	Dangerous goods (including dry ice) cannot be shipped in FedEx par or placed in a FedEx Express Brop Box.	C) Congrammation,
Use this line for the HOLD location address or for continuation of your shipping address. LIGHT CONTINUES State TX 7P 77099-4338	7 Payment Bill to:	No. er Credit Card No. below: Obtain recip.
City HOUSTON State TX ZIP 77099-4338	Sender	
045550776	Acct No. in Section A Recipient	Third Party LCredit Card Cash/Check
1 - 2 max material material materials and the cold and the latest and the latest and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold and the cold an	Total Packages Total Weight	Crede Card Austu
	lbs.	
	füur liability is limbed to US\$100 unless you declare a higher value. Se	· · · · · · · · · · · · · · · · · · ·
8013 8012 5537	Rev. Date 2/12 - Part #163134 - @1934-2012 FodEx - PRINTED IN L	IS A. SRS



ALS Environmental

10450 Stancliff Rd., Suite 210 Houston, Texas 77099 Tel. +1 281 530 5656 Fax. +1 281 530 5887

CUSTOPY SEAL





2 Your Internal Billing Reference

City HOUSTON

From Date 2/5/1

Name

Company

Recipient's Name

Company

3

Total Weight

Our Bability is Bridged to USS100 unless you declare a higher value. See the current FedEx Service Guide for details.

PTT

1	Express Package Service • To most locations. NOTE: Service order has changed. Please select carefully.	Packages up to 150 lbs., For packages over 150 lbs., use the Fodex Express Freight US Airbill.
	Next Business Day 2 o	or 3 Business Days
	Feet Contract to reference many in deliverante episet	dEx 2Day A.M. and business maming. orday Delivery NOT aveilable.
	Next business morning. Friday shipments will be	dEx 20ay cond business aftermoon.* Thursday shipments be deferred on Monday unless SATURDAY krony is selected.
X	Next huriance attacement	dEx Express Saver of business day.* unday Octoory NOT available.
5	Packaging *Declared value limit \$500.	<i>\$</i>
	FedEx Envelope* FedEx Pak* "	FedEx FedEx X Othe
	Legicy Citypiohe City on El	Box L Tube /L Care
6	Special Handling and Delivery Signature O	Box — lube /—
6		ptions lube / C
6	Special Handling and Delivery Signature O	pptions Indirect Signature If so one is evaluable at recipions address, sympone at a neighboring address are sympole at a neighboring address to sympole at a neighboring address to sympole at a neighboring address to sympole at the second sympole and the sympole at the sympole at the sympole at the sympole address to sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the
	Special Handling and Delivery Signature O SATURDAY Delivery NOT evaleble for Fedex Standard Overnight, Fedex 20 sy A.M., or Fedex Exp NO Signature Required Package may be left without chairing a signature for delivery. Does this shipment contain dangerous goods?	indirect Signature If so one is evaluable at recipionts address specifies and other properties of the specifies of the speci
	Special Handling and Delivery Signature O SATURDAY Delivery NOT evaleble for Fedex Standard Overnight, Fedex 20 sy A.M., or Fedex Exp NO Signature Required Package may be left without Chabing a signature for delivery. Direct Signature Package may be left without Chabing a signature for delivery.	pptions Indirect Signature If so one is evaluable at recipions address, sympone at a neighboring address are sympole at a neighboring address to sympole at a neighboring address to sympole at a neighboring address to sympole at the second sympole and the sympole at the sympole at the sympole at the sympole address to sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the sympole at the
TX.	Special Handling and Delivery Signature O SATURDAY Delivery NOT evalether for Fedex Standard Overnight, Fedex 20 sy A.M., or Fedex Exp NO Signature Required Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may be left without Package may	potions Indirect Signature If oo one is vesible are rejient's address applies. Indirect Signature If oo one is vesible are rejient's address, some at a neighboring address may sign for delivery for residential deliveries only. Fee applies
TX.	Special Handling and Delivery Signature O SATURDAY Delivery NOT evalether for Fedex Standard Overnight, Fedex 20 sy A.M., or Fedex Exp NO Signature Required Package may be left without Someone at recipient's an environment of delivery. Does this shipment contain dangerous goods? One box must be checked. Yes As per anached As per anached Shipper's Declaration Integring.	Box Lube Indirect Signature If so one is evaleble arrecipion(s address applies Indirect Signature If so one is evaleble arrecipion(s address, smoone at a neighborlog address may sign for delivery, for residendial delivrines only, five applies Dry Ice Dry Ice, 8 UN 1845 Cargo Aircraft Only
TX.	Special Handling and Delivery Signature O SATURDAY Delivery NOT evaluate for Fedex Standard Overnight, Fedex 20sy AM, or Fedex Exp NO Signature Required Package may be left verboard Outsing a spatiature to delivery. Does this shipment contain dangerous goods? One box must be checked. Yes Yes No As per adached Shipper's Declaration not required. Genous goods Industry dry led cannot be shipped in Fedex packaging laced in a Fedex Express Drop Box.	Dry Ice Dry Ice Dry Ice Cargo Aircraft Only

0455309602

ZIP 77099-4338

HOLD Weekday

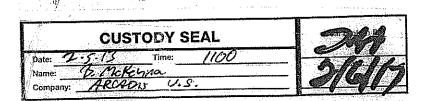
HOLD Saturday FeeEx location address REQUIRED, Available ONLY for FeeEx Priority Overnight and FedEx 2Day to select locations.



LABORATORY GROUP

Use this line for the HOLD location address or for continuation of your shipping address.

Rev. Date 2/12 + Part #163134 + @1994-2012 FedEx + PRINTED IN U.S.A. SRS



2 Your Internal Billing Reference

Address 10450 STANCL We cannot deliver to P.O. boxos or P.O. ZIP codes.

To Recipients Name CLIENT SERVICES

COMPANY ALS LABORATORY GROUP

Date

Sender's Name

Company

Factor BOL3 7714 1158

} 	ferm 0215	helipjem's tomy			
	4 Express Package Service Tamor NOTE: Service order has changed. Please safect ca	st locations, Packages up to 150 lbs. For packages over 150 lbs, use the feets. Express freight US Abell.			
34/	Nox Business Day FedEx First Overnight Entiphynat fluknespitymens fallvanya select ecology Select Springers and behand on Anilogy Miless SAVIRD No. Behand yes selected.	Z 013 Business Days FedEx 20ay A.M. Second tuchness morning. Saturday Defivery NOT availe ble.			
	FedEx Priority Overnight Next business morning * Friday shipments will be delivered on Monday unless SATURDAY Belivery is selected.	FedEx 2Day Second business attenuom.* Thursday shipments will be delineed on Nonday unless SATURDAY Delivery is salected.			
≱Room	FedEx Standard Overnight Next business afternoon.* Saturday Delivery NOT expilable.	FedEx Express Saver Third business day. Saturday Distroy NOT available.			
	5 Packaging Declared value final \$500. FedEx Envelope* FedEx Pak*	Grature Options M. or FedEx Express Sever. Indirect Signature			
<u>ර</u>	6 Special Handling and Delivery Signature Options SATURDAY Delivery NOT available for FedEx Standard Overnight, FedEx 2Day A.M., or FedEx Express Sever.				
	No Signature Required Package may be left without Obtaining a Signature Bright without Someona at neithering a didress may sign for delivery. Fee applies The signature for delivery. The signature for delivery.				
e for	One has must be checked.				
ffor d	No As por anached Shipper's Declaration Or required. Dangeirous goods (including dy lice) cannot be shipped in FedEx packaging or placed in a FedEx Express One Box. Cargo Aircraft Only				
	7/Payment Bill to	Diagram 1			

Third Party

[†]Dur Rability is limited to US\$100 unless you declare a higher value. See the current FedEx Service Guida for details

Rev. Date 2/12 • Part #163134 • @1994-2012 FedEx • PRINTED IN U.S.A. SRS

Credit Card

Cash/Check

611

Use this fine for the HOLD location address or for continuation of your shipping address.

City HOUSTON State TX

0455550114

HOLD Weekdby FedEx location address REQUIRED, NOT availa

HOLD Saturday fedEx location address RECURRED, Available ON FedEx Priority Overnight



March 15, 2013

Ms. Sonia West ALS Environmental 10450 Stancliff Rd, Suite 210 Houston, TX 77099

Re: ALS Workorder: 13-02-165

Project Name: None Submitted

Project Number: 1302223

Dear Ms. West:

Twenty soil samples were received from ALS Environmental on February 14, 2013. The samples were scheduled for the following analysis:

Gamma Spectroscopy

The results for this analysis are contained in the enclosed report.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental Jeff Kujawa Project Manager

JRK/mlc

Enclosure (s): Report



1302165

Gamma Spectroscopy:

These samples were prepared according to the current revision of SOP 739. The samples were sealed in steel cans and stored for at least 21 days prior to analysis.

All acceptance criteria were met.

ALS is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

Accreditation Body	License or Certification
Accreditation Body	Number
Alaska (AK)	UST-086
Alaska (AK)	CO00078
Arizona (AZ)*	AZ0742
California (CA)	06251CA
Colorado (CO)	CO00078
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO00078
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Maryland (MD)	285
Missouri	175
Nevada (NV)	CO000782008A
New Jersey (NJ)**	CO003
North Dakota (ND)	R-057
Oklahoma	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241-09-1
Utah (UT)	CO00078
Washington	C1280

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1302165

Client Name: ALS Environmental

Client Project Name:

Client Project Number: 1302223 Client PO Number: 10-1302223

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
1302223-01A (MW-118 (1))	1302165-1		SOIL	04-Feb-13	9:20
1302223-02A (MW-118 (5))	1302165-2		SOIL	04-Feb-13	9:05
1302223-03A (MW-118 (10))	1302165-3		SOIL	04-Feb-13	10:10
1302223-04A (MW-118 (15))	1302165-4		SOIL	04-Feb-13	14:50
1302223-05A (MW-118 (20))	1302165-5		SOIL	04-Feb-13	14:52
1302223-06A (MW-118 (25))	1302165-6		SOIL	04-Feb-13	14:35
1302223-07A (MW-119 (1))	1302165-7		SOIL	04-Feb-13	11:05
1302223-08A (MW-119 (5))	1302165-8		SOIL	04-Feb-13	11:20
1302223-09A (MW-119 (10))	1302165-9		SOIL	04-Feb-13	11:45
1302223-10A (MW-119 (15))	1302165-10		SOIL	04-Feb-13	16:08
1302223-11A (MW-119 (20))	1302165-11		SOIL	04-Feb-13	16:11
1302223-12A (MW-119 (25))	1302165-12		SOIL	04-Feb-13	16:20
1302223-16A (MW-117 (15))	1302165-13		SOIL	31-Jan-13	15:20
1302223-17A (MW-117 (20))	1302165-14		SOIL	31-Jan-13	15:25
1302223-18A (MW-117 (25))	1302165-15		SOIL	31-Jan-13	15:40
1302223-22A (RO-SB-1 (15))	1302165-16		SOIL	31-Jan-13	9:57
1302223-23A (RO-SB-1 (20))	1302165-17		SOIL	31-Jan-13	9:40
1302223-24A (RO-SB-1 (25))	1302165-18		SOIL	01-Feb-13	10:18
1302223-25A (RO-SB-1 (30))	1302165-19		SOIL	01-Feb-13	10:10
1302223-26A (RO-SB-1 (35))	1302165-20		SOIL	01-Feb-13	10:05



Subcontractor:

ALS Environmental

225 Commerce Drive

TEL:

(800) 443-1511

FAX: (970) 490-1522 CHAIN-OF-CUSTODY RECORD

Page 1 of 2

Date:

13-Feb-13

COC ID: 13353

Due Date 21-Feb-13

Fort Collins, CO 80524

Acct#:

1302165 Salesperson Mala H. Belmonte Customer Information Project Information Parameter/Method Request for Analysis Purchase Order 10-130223 Project Name 1302223 A Radium 226 .228 Sub to ALS Ft. Collins Work Order Project Number В Company Name ALS Group USA, Corp. Bill To Company ALS Group USA, Corp. , C. Send Report To Sonia West Accounts Payable Inv Attn D Address 10450 Stancliff Rd, Suite 210 Address 10450 Stancliff Rd, Suite 210 E F City/State/Zip Houston, Texas 77099-4338 City/State/Zip Houston, Texas 77099-4338 G Phone (281) 530-5656 Phone (281) 530-5656 Н Fax (281) 530-5887 Fax (281) 530-5887 J. eMail Address Sonia.West@alsglobal.com eMail CC jumoke.lawal@alsglobal.com J_ Sample ID Matrix Collection Date 24hr Bottle A В C. D. : G 1302223-01A (MW-118 (1)) Soil 4/Feb/2013 9:20 (1) 8OZAGNEAT X 1302223-02A (MW-118 (5)) Soil 4/Feb/2013 9:05 (1) 80ZAGNEAT X 1302223-03A (MW-118 (10)) Soil 4/Feb/2013 10:10 (1) 8OZAGNEAT X 1302223-04A (MW-118 (15)) Soil 4/Feb/2013 14:50 (1) 80ZAGNEAT X 1302223-05A (MW-118 (20)) Soil 4/Feb/2013 14:52 (1) 80ZAGNEAT Χ 1302223-06A (MW-118 (25)) Soil 4/Feb/2013 14:35 (1) 80ZAGNEAT X 1302223-07A (MW-119 (1)) Soil 4/Feb/2013 11:05 (1) 8OZAGNEAT Х 1302223-08A (MW-119 (5)) Soil 4/Feb/2013 11:20 (1) 8OZAGNEAT Χ 1302223-09A (MW-119 (10)) (g) (10) Soil 4/Feb/2013 11:45 (1) 8OZAGNEAT X 1302223-10A (MW-119 (15)) Soil 4/Feb/2013 16:08 (1) 8OZAGNEAT X 1302223-11A (MW-119 (20)) Soil 4/Feb/2013 16:11 (1) 8OZAGNEAT X 1302223-12A (MW-119 (25)) Soil 4/Feb/2013 16:20 (1) 8OZAGNEAT X 1302223-13A (MW-117 (1)) Soil 31/Jan/2013 8:55 (1) 8OZAGNEAT X 1302223-14A (MW-117 (5)) Soil 31/Jan/2013 9:15 (1) 8OZAGNEAT Х

Comments:					····	
	WO 1302223 - Please an	alyze for Radium	226/228. Samples that were s	sent from previous WO 1302	079 & 1302082 match	with this WO those
	on enclosed list	•		<u> </u>	9.9 @ 1502002 maten	with this wo those
	_					
	1 11.					
	//// 17	John 1	Toler L	•		
60	191	13/9 /	14012			
Relinquished by:	Date/T	ime	Received by:	Date/Time	Cooler IDs	Report/QC Level
/			Kandi Baus	D 0214-13 0915		Std
Relinquished by:	Date/T	ima	Received by:			
Tronnquision by:	Date, 1	iiiie	Received by:	Date/Time		· · · · · · · · · · · · · · · · · · ·
L				į		



Subcontractor:

ALS Environmental

225 Commerce Drive

TEL: FAX: (800) 443-1511

(970) 490-1522

Page 2 of 2

CHAIN-OF-CUSTODY RECORD

Date:

13-Feb-13

COC ID: 13353 Due Date 21-Feb-13

Fort Collins, CO 80524

Acct#:

Salesperson Mala H. Belmonte

IN SOUR SEE A CONTROL TO THE TO	Salesperson	Maia H.	Belmonte								·				
2 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	stomer Information	的复数		7	ation		<u>k</u>		Par 1 7 11 15		Request	for Ana	ysis 🤃		
Purchase Order	10-130223	· · · · · · · · · · · · · · · · · · ·	ect Name	1302223		1	dium 226	.228 Sı	ub to AL	S Ft. Co	ollins				
Work Order		Proje	ect Number			В;									
Company Name	ALS Group USA, Corp.	Bill 7	To Company	ALS Group	USA, Corp.	C									
Send Report To	Sonia West	Inv A	Attn	Accounts	Payable	D:									
Address	10450 Stancliff Rd, Suite 210	Addı	ess	10450 Stan	cliff Rd, Suite 210	"Ε÷									
City/State/Zip	Houston, Texas 77099-4338	Citv/	City/State/Zip Ho		exas 77099-4338	F.									
Phone	(281) 530-5656				5656	Н					· · · · · · · · · · · · · · · · · · ·				
Fax	(281) 530-5887	Fax		(281) 530-		E.C.						 -			
eMail Address	Sonia.West@alsglobal.com	eMa	il CC		/al@alsglobal.com	J									
Sample ID		Matrix	Collection	Date 24hr	Bottle	Α.	, ≼ B∍⊸	C .	≤ D ;	Ψ. Ε . _ε	S. E. S.	G.	I. Hali		. j., j
1302223-15A (MW	-117 (10))	Soil	31/Jan/20	013 10:30	(1) 8OZAGNEAT	X	12 2.3			1. 1.3 P (4.1.3.1.2.)	1, 1, 2, 3, 1, 1,	1	1000		V 184
1302223-16A (MW	-117 (15)) (13	Soil	31/Jan/20	013 15:20	(1) 8OZAGNEAT	X					·			—	
1302223-17A (MW		Soil	31/Jan/20	013 15:25	(1) 80ZAGNEAT	X					— —	· · · · · ·		 	<u> </u>
1302223-18A (MW	-117 (25))	Soil	31/Jan/20	013 15:40	(1) 80ZAGNEAT	X							———	 	
1302223-19A (RO-	SB-1 (1))	Soil	31/Jan/20	013 11:45	(1) 8OZAGNEAT	X					<u> </u>	 	i	 	
1302223-20A (RO-		Soil	31/Jan/20	013 12:00	(1) 8OZAGNEAT	X							<u> </u>	 	ļ
1302223-21A (RO-		Soil	31/Jan/20	013 12:50	(1) 8OZAGNEAT	X	T					1		1	
1302223-22A (RO-	1	Soil	1/Feb/20	013 9:57	(1) 8OZAGNEAT	X						1		 	
1302223-23A (RO-		Soil	1/Feb/20	013 9:40	(1) 8OZAGNEAT	X						<u> </u>			<u> </u>
1302223-24A (RO-	- 1	Soil	1/Feb/20	13 10:18	(1) 8OZAGNEAT	X					1	ļ -		1	
1302223-25A (RO-		Soil		13 10:10	(1) 8OZAGNEAT	Х								<u> </u>	
1302223-26A (RO-	SB-1 (35)) (20)	Soil	1/Feb/20	13 10:05	(1) 8OZAGNEAT	X									1

Comments:					····
	WO 1302223 - Please analyze for Rac	ium 226/228. Samples that	were sent from previous WO 1302	079 & 1302082 match	with this WO those
	on enclosed list			***************************************	THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE S
	1 11				
1 //			•		
1 / holo	13/7/2/13	MA Bu			
Rainquished by:	Date/Time	Received by:	Date/Time V ₁ 2	Cooler IDs	Report/QC Level
		dandi Ba	1100 2-14-13 0915		Std
		- Marian is	200 8 10011		7 1 1 1 2 1 2 1 1 1 1 1 1 1 1 1 1 1 1 1
Relinquished by:	Date/Time	Received by:	Date/Time		



ALS Environmental - Fort Collins CONDITION OF SAMPLE UPON RECEIPT FORM

Client: 1302 Workorder No: 1302	65	
Project Manager: OK Initials: VB D	ate: <u>2-14-</u>	<u>[</u> 3
Does this project require any special handling in addition to standard ALS procedures?	YES	(NO)
2. Are custody seals on shipping containers intact?	NE YES	NO
3. Are Custody seals on sample containers intact?	NE YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?	YES	NO
5. Are the COC and bottle labels complete and legible?	(YES)	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)	YES	NO
7. Were airbills / shipping documents present and/or removable?	OFF (YES)	NO
3. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)		NO
Are all aqueous non-preserved samples pH 4-9?	YES	NO
0. Is there sufficient sample for the requested analyses?	(YES)	NO
11. Were all samples placed in the proper containers for the requested analyses?	YES	NO
2. Are all samples within holding times for the requested analyses?	(YES)	NO
3. Were all sample containers received intact? (not broken or leaking, etc.)	YES	NO
4. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: < green pea > green pea		NO
5. Do any water samples contain sediment? Amount		
Amount of sediment: dusting moderate heavy	YES	NO
6. Were the samples shipped on ice?	YES	NO
7. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 (#4) ONL		NO
Cooler #: 1 2KB	<u>r</u>	
Temperature (°C): 4,5	 .	
No. of custody seals on cooler:		
DOT Survey/ Acceptance External µR/hr reading: / S		
Background µR/hr reading: //		··-·
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? YES NO / NA (If no, see Form 0)		
Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT #		
# TROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXCEPT	1 AND #16.	
		
		
		
applicable, was the client contacted? YES / NO / Contact:	Time:	
roject Manager Signature / Date: 2-14-13		
*IR Gun #2: Oakton, SN 29922500201-0066 Form 201r24.xls (06/04/2012) *IR Gun #4: Oakton, SN 2372220101-0002		1

*IR Gun #4: Oakton, SN 2372220101-0002

Page 1 of

Date: Idrebio. SPECIAL: ef: pl/bf/jba ep: Environmental 9.97 0.00 109.70 Wgt: 48.49 LBS HANDLING: 0.00 TOTAL: DV: 1302165 Svos: PRIORITY OVERNIGHT TRCK: 4340 2174 2850 ORIGIN ID: SGRA (281) 530-5856 SHIPPING DEPT ALS LABORATORY GROUP 10450 STANCLIFF SUITE 210 HOUSTON: TX 77099 UNITED STATES US SHIP DATE: 13FEB13 ACTWGT: 48.5 LB CAD: 300130/CAFE2606 BILL SENDER OROY FRENCH **ALS ENVIRONMENTAL** 225 COMMERCE DRIVE FORT COLLINS CO 80524 (970) 490 - 1511 DEPT: ENVIRONMENTAL **SedEx** Express THU - 14 FEB 12 PRIORITY OVERNIGHT TRK# 4340 2174 2850 80524 **NA FTCA**

Part # 156148-434 RIT2 04/12

co-us DEN

F all pw=	ALS Environmental			G dwh= <i>14-Mar-13</i>					
Sumhfw⊨	1302223			Z run Rughu= 1302165					
Vdp sdn IG =	1302223-01A (MW-	118 (1))		Ode IG = 1302165-1					
OhjdoOrfdwlrq=	=		P dwil{= SOIL						
FronfwlrqGdwh	= 2/4/2013 09:20		ShufhqwP rlwxuh=						
D qdd vhv		Uhvxov	T xdo	Uhsruw Olplw	Xqlw	G loxwirq Idfvru	GdwhDqdd}hg		
GAMMA SPECT	ROSCOPY RESULTS			PAI 713		Prep Date: 2/18/2013	PrepBy: SAM		
Ra-226		1.5 (+/- 0.36)	G		8 pCi/g	NA	3/11/2013 09:43		
Ra-228		0.89 (+/- 0.5)	NQ,G	0.8	6 pCi/g	NA	3/11/2013 09:43		

Ra-228

VDP SOH VXP P DU\ UHSRUW

3/11/2013 09:43

NA

Gdwh=14-Mar-13Fdhqw= ALS Environmental Sumhfw⊨ 1302223 Z run Rughu= 1302165 Ode IG = 1302165-2 Vdp sdn LG = 1302223-02A (MW-118 (5)) OhjdoOrfdwlrq= P dwul{= SOIL F rodnfwlrq G dwh= 2/4/2013 09:05ShufhqwP rlwxuh= Uhsruw G loxwlrq D qdd vhv Uhvxow GdwhDqdodOlp lw Xqlw T xdo Idfvru **GAMMA SPECTROSCOPY RESULTS** Prep Date: 2/18/2013 PrepBy: SAM **PAI 713** G 1.64 (+/- 0.39) 0.55 pCi/g NA 3/11/2013 09:43

0.84 pCi/g

NQ,G

0.96 (+/- 0.63)

VDP SOH VXP P DU\ UHSRUW

Gdwh=14-Mar-13ALS Environmental Fdhqw= Sumhfw⊨ 1302223 Z run Rughu= 1302165 Ode IG = 1302165-3Vdp sdn LG = 1302223-03A (MW-118 (10)) OhjdoOrfdwlrq= P dwul{= SOIL F rodnfwlrq G dwh= $2/4/2013 \ 10:10$ ShufhqwP rlwxuh= Uhsruw G loxwlrq D qdd vhv Uhvxov GdwhDqdodOlp lw Xqlw T xdo Idfvru **GAMMA SPECTROSCOPY RESULTS** Prep Date: 2/18/2013 PrepBy: SAM **PAI 713** 3/11/2013 09:43 0.62 (+/- 0.29) LT,G,TI 0.48 pCi/g NA Ra-228 ND (+/- 0.51) 0.74 pCi/g NA 3/11/2013 09:43 U,G

F all pw=	ALS Environmental			G dwh= <i>14-Mar-13</i>					
Sumhfw=	1302223			Z run Rughu= 1302165					
Vdp sdnIG=	1302223-04A (MW-	118 (15))		Ode IG = 1302165-4					
OhjdoOrfdwlrq=	=		P dwal{= SOIL						
FrænfwlrqGdwh	= 2/4/2013 14:50		ShufhqwP rlww.uh=						
D qdd vhv		Uhvxow	T xdo	Uhsruw Olplw	Xqlw	G lxwlrq Idfvru	GdwhDqdd}}hg		
GAMMA SPECT	ROSCOPY RESULTS		PAI 713			Prep Date: 2/18/2013	PrepBy: SAM		
Ra-226		ND (+/- 0.19)	U,G	0.36	6 pCi/g	NA	3/11/2013 09:43		
Ra-228		ND (+/- 0.38)	U,G	0.57	7 pCi/g	NA	3/11/2013 09:43		

Falhqw=	ALS Environmental					G dwh= 14-Mar-13			
Sumhfw⊨	1302223			Z run Rughu= 1302165					
Vdp sdnIG=	1302223-05A (MW-	118 (20))		Ode IG = 1302165-5					
OhjdoOrfdwlrq	=					P dwal{= SOIL			
Frænfwlrq Gdwl	$= 2/4/2013 \ 14:52$		ShufhqwP rlww.uh=						
D qdd vhv		Uhvxow	T xdo	Uhsruw Olplw	Xqlw	G loxwirq Idfvru	GdwhDqdd }hg		
GAMMA SPECT	ROSCOPY RESULTS			PAI 713		Prep Date: 2/18/2013	PrepBy: SAM		
Ra-226		ND (+/- 0.28)	U,G	0.52	2 pCi/g	NA	3/11/2013 09:43		
Ra-228		ND (+/- 0.6)	U,G	0.89	pCi/g	NA	3/11/2013 09:43		

Falhqw=	ALS Environmental					Gdwh= 14-Mar-13			
Sumhfw=	1302223			Z run Rughu⊨ 1302165					
Vdp sdnIG=	1302223-06A (MW-1	18 (25))				Ode IG= 1302165-6			
OhjdoOrfdwlrd	P dwal{= SOIL								
Franfwlrq Gdw	h= 2/4/2013 14:35			ShufhqwP rlwxuh=					
D qdd vhv		U hvxov	T xdo	Uhsruw Olplw	Xqlw	G lxwlrq Idfvru	GdwhDqdd }hg		
GAMMA SPEC	TROSCOPY RESULTS		PAI 713		Prep Date: 2/18/201 :	3 PrepBy: SAM			
Ra-226		0.74 (+/- 0.26)	LT,G	0.44	4 pCi/g	NA	3/11/2013 09:43		
Ra-228		1.04 (+/- 0.54)	G,TI	0.63	B pCi/g	NA	3/11/2013 09:43		

F dhqw=	ALS Environmental			G dwh= 14-Mar-13					
Sumhfw=	1302223				Z	run R ughu= 1302165			
Vdp sdnIG=	1302223-07A (MW-1	119 (1))				Ode IG = 1302165-7			
OhjdoOrfdwlro	[=					$P dwal{= SOIL}$			
Frankfwlrq Gdwh= 2/4/2013 11:05 ShufhqwP rlww.uh=									
D qdd vhv		U hvxov	T xdo	Uhsruw Olp lw	XdJw	G loxwlrq Idfvru	GdwhDqdd }hg		
GAMMA SPEC	TROSCOPY RESULTS			PAI 713		Prep Date: 2/18/2013	B PrepBy: SAM		
Ra-226		1.41 (+/- 0.3)	G	0.45	pCi/g	NA	3/11/2013 09:43		
Ra-228		ND (+/- 0.4)	U,G	0.9	pCi/g	NA	3/11/2013 09:43		

F all all all all all all all all all al	ALS Environmental					G dwh= 14-Mar-13			
Sumhfw⊨	1302223			Z run Rughu= 1302165					
Vdp sdn IG =	1302223-08A (MW-1	19 (5))				Ode IG = 1302165-8			
OhjdoOrfdwlrq= P dwil{= SOIL									
Fræhfwiling Gdwh= 2/4/2013 11:20 ShufhqwP rlww.uh=									
D qdd vhv		U hvxov	T xdo	Uhsruw Olplw	Xqlw	G loxwilrq Idfvru	GdwhDqdd }hg		
GAMMA SPEC	TROSCOPY RESULTS			PAI 713		Prep Date: 2/18/2013	B PrepBy: SAM		
Ra-226		1.14 (+/- 0.29)	G	0.40	6 pCi/g	NA	3/11/2013 09:43		
Ra-228		ND (+/- 0.44)	U,G	0.67	7 pCi/g	NA	3/11/2013 09:43		

Ra-226 Ra-228		1.44 (+/- 0.36) 0.8 (+/- 0.53)	G LT,G,TI		pCi/g pCi/g	NA NA	3/11/2013 10:45 3/11/2013 10:45			
GAMMA SPECTE	ROSCOPY RESULTS			PAI 713		Prep Date: 2/18/2013	PrepBy: SAM			
D qdd vhv		Uhvxov	T xdo	Uhsruw Olplw	XdJw	G loxwlrq Idfvru	G dwh D qdo }hg			
Frænfwlrq Gdwh=	2/4/2013 11:45		ShufhqwP rlww.uh=							
OhjdoOrfdwlrq=	OhjdoOrfdwlrq= P dwil{= SOIL									
VdpsdnIG=	1302223-09A (MW-	119 (10))				Ode IG= 1302165-9				
Sumhfw⊨	1302223	302223 Z run R ughu= 1302165								
F dhqw=	ALS Environmental			G dwh= 14-Mar-13						

F dhqw=	ALS Environmental			Gdwh= <i>14-Mar-13</i>						
Sumhfw⊨	1302223				Z	run R ughu= 1302165				
Vdp sdnIG=	1302223-10A (MW-	119 (15))				Ode IG = 1302165-10)			
OhjdoOrfdwlrq= P dwil{= SOIL										
Fræhfwlrq Gdwl	= 2/4/2013 16:08		ShufhqwP rlww.uh=							
D qdd vhv		Uhvxov	T xdo	Uhsruw Olplw	XdJm	G loxwlrq Idfvru	GdwhDqdd }hg			
GAMMA SPECT	ROSCOPY RESULTS			PAI 713		Prep Date: 2/18/2013	PrepBy: SAM			
Ra-226		0.56 (+/- 0.21)	LT,G	0.3	7 pCi/g	NA	3/11/2013 10:45			
Ra-228		ND (+/- 0.55)	U,G	0.9	7 pCi/g	NA	3/11/2013 10:45			

VDP SOH VXP P DU\ UHSRUW

 Folingwise
 ALS Environmental
 G dwhise 14-Mar-13

 Summhfiwer
 1302223
 Z run R ughuse 1302165

 Vdp sdn IG =
 1302223-11A (MW-119 (20))
 Ode IG = 1302165-11

 OhjdoOrfdwlirqs
 P dwil{ = SOIL

 F robhfwlirq G dwhise
 2/4/2013 16:11
 ShuffhqwP rlwwuhse

 GAMMA SPECTROSCOPY RESULTS
 PAI 713
 Prep Date: 2/18/2013
 PrepBy: SAM

 Ra-226
 1.07 (+/- 0.29)
 G
 0.48 pCi/g
 NA
 3/11/2013 10:46

 Ra-228
 0.9 (+/- 0.44)
 LT,G
 0.65 pCi/g
 NA
 3/11/2013 10:46

VDP SOH VXP P DU\ UHSRUW

 Foliqw=
 ALS Environmental
 Gdwh= 14-Mar-13

 Surnhfw=
 1302223
 Z run R ughu= 1302165

 Vdp sdn IG =
 1302223-12A (MW-119 (25))
 Ode IG = 1302165-12

OhjdoOrfdwlrq= P dwal{= SOIL

F robifwling G dwh= 2/4/2013 16:20 ShufhqwP rlwxuh=

 GAMMA SPECTROSCOPY RESULTS
 PAI 713
 Prep Date: 2/18/2013
 PrepBy: SAM

 Ra-226
 0.66 (+/- 0.33)
 LT,G,TI
 0.64 pCi/g
 NA
 3/11/2013 10:46

 Ra-228
 ND (+/- 0.45)
 U,G
 0.72 pCi/g
 NA
 3/11/2013 10:46

VDP SOH VXP P DU\ UHSRUW

F chart ALS Environmental G dwh= 14-Mar-13

Sumhfw= 1302223 Z run Rughu= 1302165

Vdp sdn IG = 1302223-26A (RO-SB-1 (35)) Ode IG = 1302165-20

OhjdoOrfdwlrq= P dwal{= SOIL

From From Gdwh= 2/1/2013 10:05 ShufhqwP rlww.uh=

Uhsruw Christian

D qdd vhv G lxwlrq

U hxxov T xdo O lp lw X q lw I dfyru G dwh D qdd } hg

H {sodqdwlrq riT xddilhuv

Radiochemistry:

U or ND - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

G - Sample density differs by more than 15% of LCS density.

D - DER is greater than Control Limit

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested

MDC.

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).

U or ND - Indicates that the compound was analyzed for but not detected.

E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.

M - Duplicate injection precision was not met.

N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.

Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.

* - Duplicate analysis (relative percent difference) not within control limits.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.

B - Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.

E - Analyte concentration exceeds the upper level of the calibration range.

J - Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).

A - A tentatively identified compound is a suspected aldol-condensation product.

X - The analyte was diluted below an accurate quantitation level.

* - The spike recovery is equal to or outside the control criteria used.

+ - The relative percent difference (RPD) equals or exceeds the control criteria.

Diesel Range Organics:

ALS Environmental -- FC

LIMS Version: 6.634 60 of 99 AR Page 21 of 22

VDP SOH VXP P DU\ UHSRUW

F dhqw= ALS Environmental G dwh= 14-Mar-13

 Sumhfw=
 1302223
 Z run R ughu=
 1302165

 Vdp sdn IG =
 1302223-26A (RO-SB-1 (35))
 Ode IG = 1302165-20

OhjdoOrfdwlrq= P dwul{= SOIL

From From Gdwh= 2/1/2013 10:05 ShufhqwP rlww.uh=

Uhsruw Gloxwirq

Dqdd vhv Uhvxov Txdo Olip lw Xqlw Idfvru Gdwh Dqdd }hg

- D A pattern resembling diesel was detected in this sample.
- M A pattern resembling motor oil was detected in this sample.
- C A pattern resembling crude oil was detected in this sample.
- 4 A pattern resembling JP-4 was detected in this sample.
- 5 A pattern resembling JP-5 was detected in this sample.
- H Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.
- L Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.
- Z This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products: gasoline
- JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

G - A pattern resembling gasoline was detected in this sample.

ALS Environmental -- FC

Folhqw ALS Environmental

Z run Rughu= 1302165 Sumhfw= 1302223

G dwh= 3/14/2013 8:55:

TF EDWFK UHSRUW

Batch ID: G	SS130215-3-1	Instrument ID	GAMMA		Method:	Gamma Spectroscopy Results					
DUP	Sample ID: 1302165-1					Units: pCi/	'g	Analysi	s Date: 3/	/11/2013	10:45
Client ID: 1	302223-01A (MW-118 (1))	3-01A (MW-118 (1)) Ru		ın ID: GS130215-3A				Prep Date: 2/18/2013		DF: NA	
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qual
Ra-226		1.43 (+/- 0.34)	0.52					1.5	0.139	2.13	G
Ra-228		0.87 (+/- 0.62)	0.86					0.89	0.0287	2.13	LT,G,
LCS	Sample ID: GS130215-	-3A				Units: pCi/	g	Analysi	s Date: 3/	/11/2013	11:05
Client ID:		R	un ID: GS130	215-3A				Prep Date: 2/18	/2013	DF: N	A
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qual
Ra-226		454 (+/- 53)	3	469.4		96.8	85-115				P,M3
LCS	Sample ID: GS130215-	·3				Units: pCi/	'g	Analysi	s Date: 3/	/11/2013	10:46
Client ID:		Rı	un ID: GS130	215-3A				Prep Date: 2/18	/2013	DF: N	A
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qual
Am-241		463 (+/- 55)	7	475.3		97.5	85-115				Р
Co-60		205 (+/- 24)	1	204.4		100	85-115				Р
Cs-137		183 (+/- 22)	1	173.6		105	85-115				Р
МВ	Sample ID: GS130215 -	-3				Units: pCi/	'g	Analysi	s Date: 3/	/11/2013	10:46
Client ID:		R	un ID: GS130	215-3A				Prep Date: 2/18	/2013	DF: N	Α
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qual
Ra-226		ND	0.24								U
Ra-228		ND	0.37								U
The follow	wing samples were analya	zed in this bat	1	302165-1 302165-4 302165-7 302165-10	130 130	02165-2 02165-5 02165-8 02165-11	13 13	302165-3 302165-6 302165-9 302165-12			

TECHNICAL BULLETIN ADDENDUM

The library used for analysis defines the gamma emission(s) to be used for analysis of each nuclide. If multiple gamma emissions are used for quantification, then a 'NET' quantification emission (or peak) must be defined in the library. This designation provides for the calculation of nuclide activity concentrations and detection limits in the case of non-presence of the nuclide. When the nuclide is not present, or the software is unable to resolve a peak at the library defined 'NET' energy, the software evaluates the 'NET' region of interest ('NET' peak energy +/- 2 keV) by performing a summation of the net counts above the background level. This 'NET' quantification can result in net negative, zero, or positive activity results, and is highly dependent on the spectral distribution in the region of interest of the 'NET' peak. In cases where only the 'NET' peak is found, and the software performs a net quantification, the nuclide result will be flagged with an 'NQ' qualifier on the final reports. This indicates that the nuclide is not detected or supported at any level above the reported MDC. Results are submitted without further qualification.

All nuclides specified in the library of analysis for gamma spectroscopy are evaluated for positive <u>OR</u> tentative identification on the following criteria:

- The individual abundances for the gamma emissions specified for each nuclide are summed to obtain a total nuclide abundance.
- From the total nuclide abundance, a positive identification criterion is set as 75% of this total nuclide abundance.
- For all nuclide peaks that are not net quantified, those peak abundances are summed. The total non-net quantified peak sum is compared to the calculated 75% abundance criterion. If this sum is greater than the 75% criterion, the nuclide is considered to be positively identified at the reported concentration. If the sum is less than the 75% criterion, the nuclide is tentatively identified at the reported concentration. These results will be flagged with a 'TI' qualifier on the final reports to indicate that the 75% abundance criterion was not met.



March 6, 2013

Ms. Sonia West ALS Environmental 10450 Stancliff Rd, Suite 210 Houston, TX 77099

Re: ALS Workorder: 13-02-040

Project Name: None Submitted

Project Number: 1302223

Dear Ms. West:

Six soil samples were received from ALS Environmental on February 05, 2013. The samples were scheduled for the following analysis:

Gamma Spectroscopy

The results for this analysis are contained in the enclosed report.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental Jeff Kujawa

Project Manager

JRK/mlc

Enclosure (s): Report

ALS is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

	The second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second secon
Accreditation Body	License or Certification Number
Alaska (AK)	UST-086
Alaska (AK)	CO00078
Arizona (AZ)*	AZ0742
California (CA)	06251CA
Colorado (CO)	CO00078
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO00078
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Maryland (MD)	285
Missouri	175
Nevada (NV)	CO000782008A
New Jersey (NJ)**	CO003
North Dakota (ND)	R-057
Oklahoma	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241-09-1
Utah (UT)	CO00078
Washington	C1280



1302040

Gamma Spectroscopy:

The samples were analyzed for the presence of gamma emitting radionuclides according to the current revision of SOP 713.

These samples were prepared according to the current revision of SOP 739. The samples were sealed in steel cans and stored for at least 24 days prior to analysis.

All acceptance criteria were met.

66 of 99 4 ri 48

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1302040

Client Name: ALS Environmental

Client Project Name:

Client Project Number: 1302223 Client PO Number: 10-1302223

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
1302223-13A (MW-117 (1))	1302040-1		SOIL	31-Jan-13	8:55
1302223-14A (MW-117 (5))	1302040-2		SOIL	31-Jan-13	9:15
1302223-15A (MW-117 (10))	1302040-3		SOIL	31-Jan-13	10:30
1302223-16A (MW-117 (15))	1302040-4		SOIL	31-Jan-13	15:20
1302223-17A (MW-117 (20))	1302040-5		SOIL	31-Jan-13	15:25
1302223-18A (MW-117 (25))	1302040-6		SOIL	31-Jan-13	15:40

Date Printed: Wednesday, March 06, 2013



Subcontractor:

ALS Environmental

225 Commerce Drive

Fort Collins, CO 80524

TEL: (800) 443-1511

FAX: (970) 490-1522

Acct#:

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Date:

04-Feb-13

COC ID: 13244

Due Date 08-Feb-13

		Salesperson		a H. Bel	monte]											
1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1	Cu	stomer Information	, was a	1244.	Pro	oject Inform	ation			Pai	rameter/	Method	Request	for Ana	lysis	. m 3 m 25g	
Purchase (Order			Project	Name	1302079		A R	dium 22					rogadhair -		<u>. 1 14 - 15</u>	<u> </u>
Work Orde	er e			Project	Number	1	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	В								**	
Company I	Vame	ALS Group USA, Corp.		Bill To (Company	ALS Group	USA, Corp.	С			-					 -	
Send Repo	rt To	Sonia West		Inv Attn		Accounts I	Payable	D			-						
Address		10450 Stancliff Rd, Suite 210)	Address	,	10450 Stan	cliff Rd, Suite 210	E		•				·			~
								F							~		<u> </u>
City/State/2	Zip	Houston, Texas 77099-4338		City/Sta	te/Zip	Houston, To	exas 77099-4338	G								<u>-</u>	
Phone		(281) 530-5656	·	Phone		(281) 530-5	656	Н	-1-1								
Fax		(281) 530-5887		Fax		(281) 530-5	887	:[
eMail Addr	ess	Sonia.West@alsglobal.com		eMail C	C			J									
	nple ID		Mat	trix	Collection	Date 24hr	Bottle	Α.	B	1. C	D.	. . E . ,	F 3	, G	. Н	ag statu	J
1302079-0	E (MW	-117 (1))	Sc	oil	31/Jan/20	013 8:55	(1) 4OZGNEAT	X-	1			1	1	7 7		2.0 2.2 0.0	7.008,000
1302079-03	C (MW	-117 (5))	Sc	oil	31/Jan/20	13 9:15	(1) 4OZGNEAT	Х				<u> </u>				 	1
1302079-0	C (MW	-119 (10))	Sc	oil	31/Jan/20	13 10:30	(1) 4OZGNEAT	X.	<u> </u>			-		i			
1302079-09	C (MW	-117 (15))	Sc	oil	31/Jan/20	13 15:20	(1) 40ZGNEAT	X	T			İ		<u> </u>		<u> </u>	
1302079-12	C (MW	-117 (20))	Sc	oil	31/Jan/20	13 15:25	(1) 4OZGNEAT	X:	†	l '						<u> </u>	
1302079-15	E (MW	117 (25))	Sc	oil	31/Jan/20	13 15:40	(1) 4OZGNEAT	X	1				1			i	

Commer		or Radium 226/228. Ema	ail results to sonia.west@alsglol	pal.com and CC jumoke.law	al@alsglobal.com	
RN	AS 02	104/13 18:00	C Trimble	2-5-13 0910		
Relinquished	by:	Date/Time	Received by:	Date/Time	Cooler IDs	Report/QC Level
			 			Std
Relinquished	by:	Date/Time	Received by:	Date/Time		



ALS Environmental - Fort Collins CONDITION OF SAMPLE UPON RECEIPT FORM

Client: ALS - TX Workorder No: 130 a	2040		
Project Manager: TK Initials: CDT	Date:	2-5-	13
Does this project require any special handling in addition to standard ALS procedures?		YES	(NO)
2. Are custody seals on shipping containers intact?	NONE	YES	NO
3. Are Custody seals on sample containers intact?	(NONE)	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		(YES)	NO
5. Are the COC and bottle labels complete and legible?		YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		YES	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	YES	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	(N/A)	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	(N/A)	YES	NO
10. Is there sufficient sample for the requested analyses?		YES	NO
Were all samples placed in the proper containers for the requested analyses?		(YES)	NO
12. Are all samples within holding times for the requested analyses?		(YES)	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		(YES)	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: < green pea > green pea	N/A)	YES	NO
Is. Do any water samples contain sediment? Amount of sediment: dusting moderate heavy	NA	YES	NO
16. Were the samples shipped on ice?	-1	(YES)	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2	RAD ONLY	YES	NO
Cooler #: 1	,		
Temperature (°C): ∂ . ∂			
No. of custody seals on cooler:			
DOT Survey/ Acceptance External µR/hr reading:			
Background μR/hr reading:			
Were external μR/hr readings ≤ two times background and within DOT acceptance criteria? (YES) NO / NA (If no, see	Form 008.)		
Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EX	<u>_</u>	ND #16.	
SAMPLES rECEIVED in 8 02 soil jars-	·-		
			
		 -	
			·
		<u></u>	
If applicable, was the client contacted? YES / NO OR Contact:	_ Date/Tin	ne:	
Project Manager Signature / Date: 2'5-()	_		
*IR Gun #2: Oakton, SN 29922500201-0066			

Form 201r24.xls (06/04/2012)

*IR Gun #2: Oakton, SN 29922500201-0066 *IR Gun #4: Oakton, SN 2372220101-0002

Page 1 of ____

ORIGIN ID: SGRA (201) 530-5656 SHIPPING DEPT ALS LABORATORY GROUP 10450 STANGLIFF SUITE 210 HOUSTON, TX 77099 UNITED STATES US

SHIP DATE: 04FEB13 ACTWGT: 49.1 LB CAD: 300130/CAFE2606

BILL SENDER

TO ROY FRENCH **ALS ENVIRONMENTAL** 225 COMMERCE DRIVE

FORT COLLINS CO 80524 (970) 490-1611 REF: SUB SAMPLES

AND DIRECTION DISTRIBUTED IN THE CONTRACT OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF THE PROPERTY OF T

FedEx Express

80524 co-us DEN

TUE - 05 FEB A2



70 of 99

F alhqw=	ALS Environmental			G dwh= 06-Mar-13						
Sumhfw=	1302223				Z	run R ughu= 1302040				
Vdp sdnIG=	1302223-13A (MW-	117 (1))				Ode IG= 1302040-1				
OhjdoOrfdwlrq= P dwil{= SOIL										
Fronfwird Gdwh	= 1/31/2013 08:55		ShufhqwP rlww.uh=							
D qdd vhv		Uhvxov	T xdo	Uhsruw Olplw	XdJm	G loxwlrq Idfvru	G dwh D qdd }hg			
GAMMA SPECTI	ROSCOPY RESULTS			PAI 713	}	Prep Date: 2/8/2013	PrepBy: SAM			
Ra-226		1.55 (+/- 0.35)	G		7 pCi/g	NA	3/4/2013 08:41			
Ra-228		ND (+/- 0.62)	U,G	0.9	3 pCi/g	NA	3/4/2013 08:41			

Ra-226

Ra-228

VDP SOH VXP P DU\ UHSRUW

3/4/2013 08:41

3/4/2013 08:41

NA

NA

GAMMA SPECTE	ROSCOPY RESULTS		PAI 713 Prep Date: 2/8/2013 PrepBy: S/								
D qdd vhv U hvxov				Uhsruw Olplw X	(d]w	G loxwlrq Idfvru	GdwhDqdd }hg				
Fronfwlrq Gdwh=	: 1/31/2013 09:15				ShufhqwP	rlwkuh=					
OhjdoOrfdwlrq=			P dwil{= SOIL								
Vdp sdnIG=	1302223-14A (MW-117	7 (5))		Ode IG = 1302040-2							
Sumhfw⊨	1302223			Z run Rughu= 1302040							
Folique ALS Environmental						G dwh= 06-Mar-13					

0.46 pCi/g

0.82 pCi/g

0.5 (+/- 0.24)

ND (+/- 0.51)

LT,TI

U

Ra-228

VDP SOH VXP P DU\ UHSRUW

3/4/2013 08:41

3/4/2013 08:41

NA

NA

Gdwh=06-Mar-13ALS Environmental Fdhqw= Sumhfw⊨ 1302223 Z run Rughu= 1302040 Ode IG = 1302040-3Vdp sdn LG = 1302223-15A (MW-117 (10)) OhjdoOrfdwlrq= P dwul{= SOIL F rashfwlrq G dwh = 1/31/2013 10:30ShufhqwP rlwxuh= Uhsruw G loxwlrq D qdd vhv Uhvxov GdwhDqdodOlp lw Xqlw T xdo Idfvru **GAMMA SPECTROSCOPY RESULTS** Prep Date: 2/8/2013 PrepBy: SAM

LT,G

U,G

0.68 (+/- 0.22)

ND (+/- 0.5)

PAI 713

0.38 pCi/g

0.81 pCi/g

F all pw=	ALS Environmental			Gdwh=06-Mar-13							
Sumhfw⊨	1302223	302223 Z run R ughu= 1302040									
Vdp sdn IG=	1302223-16A (MW-1	302223-16A (MW-117 (15)) Ode IG = $1302040-4$									
OhjdoOrfdwlrq= P dwul{= SOIL											
FroohfwlrqGdwh	= 1/31/2013 15:20		ShufhqwP rlwwkuh=								
D qdd vhv		Uhvxov	T xdo	Uhsruw Olplw	Xqlw	G loxwilrq Idfvru	GdwhDqdd }hg				
GAMMA SPECT	ROSCOPY RESULTS			PAI 713		Prep Date: 2/8/2013	PrepBy: SAM				
Ra-226		ND (+/- 0.24)	U,G	0.4	4 pCi/g	NA	3/4/2013 08:41				
Ra-228		ND (+/- 0.44)	U,G	0.73	3 pCi/g	NA	3/4/2013 08:41				

VDP SOH VXP P DU\ UHSRUW

 Foliqw=
 ALS Environmental
 G dwh= 06-Mar-13

 Sumhfw=
 1302223
 Z run R ughu= 1302040

 Vdp sdn IG =
 1302223-17A (MW-117 (20))
 Ode IG = 1302040-5

 OhjdoOrfdwlrq=
 P dwil{= SOIL

 F rowhfwlrq G dwh=
 1/31/2013 15:25
 ShufhqwP rlwxuh=

GAMMA SPECTROSCOPY RESULTS	}		PAI 713		Prep Date: 2/8/2013	PrepBy: SAM
Ra-226	0.87 (+/- 0.26)	LT,G	0.48	pCi/g	NA	3/4/2013 08:42
Ra-228	ND (+/- 0.5)	U,G	0.75	pCi/g	NA	3/4/2013 08:42

ALS Environmental -- FC

${\tt DOV\,Hqylurqp\,hqwdo00IF}$

Ra-228

VDP SOH VXP P DU\ UHSRUW

3/4/2013 08:42

NA

F dhqw=	ALS Environmental		G dwh= 06-Mar-13						
Sumhfw=	1302223				Z	run R ughu= 1302040			
Vdp sdnIG=	1302223-18A (MW-	-117 (25))	Ode $IG = 1302040-6$						
OhjdoOrfdwlrq= P dwul{= SOIL									
Froohfwlrq Gdwh	= 1/31/2013 15:40		ShufhqwP rlwxuh=						
D qdd vhv		Uhvxov	T xdo	Uhsruw Olplw	XdJm	G loxwlrq Idfvru	GdwhDqdd }hg		
GAMMA SPECT	ROSCOPY RESULTS	0.51 (+/- 0.21)	LT,G	PAI 713		Prep Date: 2/8/2013 NA	PrepBy: SAM 3/4/2013 08:42		

0.82 (+/- 0.49) LT,G,TI

0.64 pCi/g

VDP SOH VXP P DU\ UHSRUW

Gdwh = 06-Mar-13F dhqw= ALS Environmental

Sumhfw⊨ 1302223 Z run R ughu= 1302040

Ode IG = 1302040-6Vdp sdn IG = 1302223-18A (MW-117 (25))

OhjdoOrfdwlrq= P dwal{= SOIL

F rothfwlrq G dwh = 1/31/2013 15:40ShufhqwP rlwxuh=

> Uhsruw G loxwlrq

D qdd vhv GdwhDqdd \hg Uhvxov $0 \ln w$ T xdo Xqlw Idfvru

H {sodqdwlrq riT xddilhuv

Radiochemistry:

U or ND - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

G - Sample density differs by more than 15% of LCS density.

D - DER is greater than Control Limit

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested

MDC

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).

U or ND - Indicates that the compound was analyzed for but not detected.

E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.

M - Duplicate injection precision was not met.

N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.

Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.

* - Duplicate analysis (relative percent difference) not within control limits.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.

- B Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.
- E Analyte concentration exceeds the upper level of the calibration range.
- J Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).
- A A tentatively identified compound is a suspected aldol-condensation product.
- X The analyte was diluted below an accurate quantitation level.
- * The spike recovery is equal to or outside the control criteria used.
- + The relative percent difference (RPD) equals or exceeds the control criteria.

Diesel Range Organics:

ALS Environmental -- FC

AR Page 7 of 8 77 of 99 45 ri 48

VDP SOH VXP P DU\ UHSRUW

Gdwh=06-Mar-13Fdhqw= ALS Environmental Sumhfw⊨ 1302223 Z run Rughu= 1302040 Ode IG = 1302040-6Vdp sdn IG = 1302223-18A (MW-117 (25)) OhjdoOrfdwlrq= P dwal{= SOIL F radhfwlrq G dwh = 1/31/2013 15:40

ShufhqwP rlwxuh=

Uhsruw G loxwlrq Uhvxov

D qdd vhv G dwh D qdo | hg $\text{olp } \mathbb{W}$ T xdo XqIdfvru

- G A pattern resembling gasoline was detected in this sample.
- D A pattern resembling diesel was detected in this sample.
- M A pattern resembling motor oil was detected in this sample.
- C A pattern resembling crude oil was detected in this sample.
- 4 A pattern resembling JP-4 was detected in this sample.
- 5 A pattern resembling JP-5 was detected in this sample.
- H Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.
- L Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.
- Z This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products: - gasoline
- JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

ALS Environmental -- FC

LIMS Version: 6.631

78 of 99

AR Page 8 of 8

ALS Environmental -- FC

Folhqw⊨ ALS Environmental

Z run R ughu = 1302040 Sumhfw= 1302223

Gdwh= 3/6/2013 7:16:1

TF EDWFK UHSRUW

Batch ID:	GS130207-2-1	Instrument ID:	GAMMA		Method:	Gamma S	pectroso	copy Results			
DUP	Sample ID: 1302040-6					Units: pCi/	g	Analysis	s Date: 3	/4/2013 09):44
Client ID:	1302223-18A (MW-117 (25)) Ru	ın ID: GS130	207-2A				Prep Date: 2/8/2	2013	DF: N	A
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qual
Ra-226		ND	0.61					0.51	0.0381	2.13	U,G
Ra-228		ND	0.97					0.82	0.367	2.13	Ú,G
LCS	Sample ID: GS130207-	2A				Units: pCi/	ʻq	Analysis	s Date: 3	/4/2013 10):40
Client ID:	Run ID: GS130207-2A				·	J	Prep Date: 2/8/2		DF: N		
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qual
Ra-226		466 (+/- 55)	3	469.4		99.3	85-115				P,M3
LCS	Sample ID: GS130207-	2				Units: pCi/	g	Analysis	s Date: 3	/4/2013 10):39
Client ID:		Ru	ın ID: GS130	207-2A				Prep Date: 2/8/2	2013	DF: N	A
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qua
Am-241		487 (+/- 59)	15	475.4		103	85-115				Р
Co-60		206 (+/- 24)	1	204.9		100	85-115				Р
Cs-137		179 (+/- 21)	1	173.7		103	85-115				Р
МВ	Sample ID: GS130207- 2	2				Units: pCi/	g	Analysis	s Date: 3	/4/2013 09	9:49
Client ID:		Ru	ın ID: GS130	207-2A				Prep Date: 2/8/2	2013	DF: N	A
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qua
Ra-226		ND	0.24								U
Ra-228		ND ND	0.24								U
	owing samples were analyz	ed in this bate	ch: 1	302040-1 302040-4)2040-2)2040-5		302040-3 302040-6			

TECHNICAL BULLETIN ADDENDUM

The library used for analysis defines the gamma emission(s) to be used for analysis of each nuclide. If multiple gamma emissions are used for quantification, then a 'NET' quantification emission (or peak) must be defined in the library. This designation provides for the calculation of nuclide activity concentrations and detection limits in the case of non-presence of the nuclide. When the nuclide is not present, or the software is unable to resolve a peak at the library defined 'NET' energy, the software evaluates the 'NET' region of interest ('NET' peak energy +/- 2 keV) by performing a summation of the net counts above the background level. This 'NET' quantification can result in net negative, zero, or positive activity results, and is highly dependent on the spectral distribution in the region of interest of the 'NET' peak. In cases where only the 'NET' peak is found, and the software performs a net quantification, the nuclide result will be flagged with an 'NQ' qualifier on the final reports. This indicates that the nuclide is not detected or supported at any level above the reported MDC. Results are submitted without further qualification.

All nuclides specified in the library of analysis for gamma spectroscopy are evaluated for positive <u>OR</u> tentative identification on the following criteria:

- The individual abundances for the gamma emissions specified for each nuclide are summed to obtain a total nuclide abundance.
- From the total nuclide abundance, a positive identification criterion is set as 75% of this total nuclide abundance.
- For all nuclide peaks that are not net quantified, those peak abundances are summed. The total non-net quantified peak sum is compared to the calculated 75% abundance criterion. If this sum is greater than the 75% criterion, the nuclide is considered to be positively identified at the reported concentration. If the sum is less than the 75% criterion, the nuclide is tentatively identified at the reported concentration. These results will be flagged with a 'TI' qualifier on the final reports to indicate that the 75% abundance criterion was not met.

80 of 99 48 ri 48



March 6, 2013

Ms. Sonia West ALS Environmental 10450 Stancliff Rd, Suite 210 Houston, TX 77099

Re: ALS Workorder: 13-02-041

Project Name: None Submitted

Project Number: 1302223

Dear Ms. West:

Eight soil samples were received from ALS Environmental on February 05, 2013. The samples were scheduled for the following analysis:

Gamma Spectroscopy

The results for this analysis are contained in the enclosed report.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental Jeff Kujawa Project Manager

JRK/mlc

Enclosure (s): Report

ALS is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

Accreditation Body	License or Certification Number
Alaska (AK)	UST-086
Alaska (AK)	CO00078
Arizona (AZ)*	AZ0742
California (CA)	06251CA
Colorado (CO)	CO00078
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO00078
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Maryland (MD)	285
Missouri	175
Nevada (NV)	CO000782008A
New Jersey (NJ)**	CO003
North Dakota (ND)	R-057
Oklahoma	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241-09-1
Utah (UT)	CO00078
Washington	C1280



1302041

Gamma Spectroscopy:

The samples were analyzed for the presence of gamma emitting radionuclides according to the current revision of SOP 713.

These samples were prepared according to the current revision of SOP 739. The samples were sealed in steel cans and stored for at least 24 days prior to analysis.

All acceptance criteria were met.

83 of 99 4 ri4:

ALS Environmental -- FC

Sample Number(s) Cross-Reference Table

OrderNum: 1302041

Client Name: ALS Environmental

Client Project Name:

Page 1 of 1

Client Project Number: 1302223 **Client PO Number: 10-1302223**

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
1302223-19A (RO-SB-1 (1))	1302041-1		SOIL	31-Jan-13	11:45
1302223-20A (RO-SB-1 (5))	1302041-2		SOIL	31-Jan-13	12:00
1302223-21A (RO-SB-1 (10))	1302041-3		SOIL	31-Jan-13	12:50
1302223-22A (RO-SB-1 (15))	1302041-4		SOIL	01-Feb-13	9:57
1302223-23A (RO-SB-1 (20))	1302041-5		SOIL	01-Feb-13	9:40
1302223-24A (RO-SB-1 (25))	1302041-6		SOIL	01-Feb-13	10:18
1302223-25A (RO-SB-1 (30))	1302041-7		SOIL	01-Feb-13	10:10
1302223-26A (RO-SB-1 (35))	1302041-8		SOIL	01-Feb-13	10:05

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Date:

1302041

04-Feb-13

COC ID: 13246

Due Date 14-Feb-13

ALS Environmental 225 Commerce Drive

Subcontractor:

TEL: FAX: (800) 443-1511 (970) 490-1522

Fort Collins, CO 80524 Acct#:

Salesperson Mala H. Belmonte

Purchase Order	1	Projec	t Name	1302082		Α	Radium 22	6 ,228 S	ub to AL	S Ft. Co	ollins				
Work Order		Projec	t Number			В							- 121-1		
Company Name	ALS Group USA, Corp.	Bill To	Company	ALS Group	USA, Corp.	С									
Send Report To	Sonia West	Inv Att	n	Accounts	Payable	D									
Address	10450 Stancliff Rd, Suite 210	Addres	SS	10450 Star	cliff Rd, Suite 210	Ε									
City/State/Zip	Houston, Texas 77099-4338	City/St	ate/Zip	Houston T	exas 77099-4338	F G									ļ
Phone	(281) 530-5656	Phone		(281) 530-		Н									_
Fax	(281) 530-5887	Fax		(281) 530-		Max						-			H
eMail Address	Sonia.West@alsglobal.com	eMail (CC		****	J									
Sample ID	1	Matrix	Collection	Date 24hr	Bottle	, î A	\-∵ В	С	D	E	N. E. S.	G	, H,∞	415%	1
1302082-01E (RO	-SB-1 (1))	Soil	31/Jan/20	13 11:45	(1) 4OZGNEAT	X	ζ .	ĺ							
1302082-03C (RO	-SB-1 (5))	Soil	31/Jan/20	13 12:00	(1) 40ZGNEAT	X	ζ	Ì							Ì
1302082-06C (RO	-SB-1 (10))	Soil	31/Jan/20	13 12:50	(1) 4OZGNEAT	X	(
1302082-09C (RO	-SB-1 (15))	Soil	1/Feb/20	13 9:57	(1) 4OZGNEAT	X	ζ			1					_
1302082-12C (RO	-SB-1 (20))	Soil	1/Feb/20	13 9:40	(1) 4OZGNEAT	X	ζ								Г
1302082-15C (RO	-SB-1 (25))	Soil	1/Feb/201	3 10:18	(1) 4OZGNEAT	X	ζ								
1302082-18C (RO	-SB-1 (30))	Soil	1/Feb/201	3 10:10	(1) 4OZGNEAT	X	(
1302082-21E (RO	-SB-1 (35))	Soil	1/Feb/201	3 10:05	(1) 4OZGNEAT	x		1							

Comments:	Please analysis for Radium 226/228. Ema	il results to sonia.west@alsgloba	ll.com and CC jumoke.law	al@alsglobal.com	
RN	ALS 2/4/13 18:00	C Ironble	25-13 0910		
Relinquished by:	/ / Date/Time	Received by:	Date/Time	Cooler IDs	Report/QC Level
Relinquished by:	Date/Time	Received by:	Date/Time		



ALS Environmental - Fort Collins CONDITION OF SAMPLE UPON RECEIPT FORM

Client: $A \cup S - 1 \times W$ Workorder No: 1300	-041		_
Project Manager: TK Initials: CDT	Date:	2-5-	13_
Does this project require any special handling in addition to standard ALS procedures?		YES	(NO)
2. Are custody seals on shipping containers intact?	NONE	(YES)	NO
3. Are Custody seals on sample containers intact?	NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		(YES)	NO
5. Are the COC and bottle labels complete and legible?		(YES)	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		YES	(S)
7. Were airbills / shipping documents present and/or removable?	(YES)	NO	
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	YES	NO	
9. Are all aqueous non-preserved samples pH 4-9?	(N/A)	YES	NO
10. Is there sufficient sample for the requested analyses?		(YES)	NO
11. Were all samples placed in the proper containers for the requested analyses?		(YES)	NO
12. Are all samples within holding times for the requested analyses?		YES	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		(YES)	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: < green pea > green pea	YES	NO	
15. Do any water samples contain sediment? Amount of sediment: dusting moderateheavy	N/A	YES	NO
16. Were the samples shipped on ice?		YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 (#4)	RAD ONLY	(YES)	NO
Cooler #:		,	
Temperature (°C): $\frac{\partial}{\partial x} \cdot D$			
No. of custody seals on cooler: 2			
DOT Survey/ Acceptance External µR/hr reading:			
Information Background μR/hr reading:			
Were external μR/hr readings ≤ two times background and within DOT acceptance criteria? YES/NO / NA (If no, see	Form 008.)		
Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXC SAMPLES (SCEIVEC IN 8 02.501) INS	CEPT#1 A		
If applicable, was the client contacted? YES / NO / NA Contact:	Date/Tir	ne:	
Project Manager Signature / Date:	-		

*IR Gun #2: Oakton, SN 29922500201-0066 *IR Gun #4: Oakton, SN 2372220101-0002

Form 201r24.xls (06/04/2012)

Page 1 of 1

ORIGIN ID: SGRA (281) 530-5656 SHIPPING DEPT ALS LABORATORY GROUP 10450 STANCLIFF SUITE 210 HOUSTON, TX 77099 UNITED STATES US

SHIP DATE: 04FEB13 ACTWGT: 49.1 LB CAD: 300130/CAFE2606

BILL SENDER

TO ROY FRENCH **ALS ENVIRONMENTAL** 225 COMMERCE DRIVE

FORT COLLINS CO 80524 (970) 490-1511 REF: SUB SAMPLES

Γ



FedEx Express

TUE - 05 FEB RIORITY OVERNIGHT

80524

co-us DEN

Part # 158148-434 RIT2 04/12 🛟

VDP SOH VXP P DU\ UHSRUW

Gdwh=06-Mar-13ALS Environmental Fdhqw= Sumhfw⊨ 1302223 Z run Rughu= 1302041 Ode IG = 1302041-1 Vdp sdn LG = 1302223-19A (RO-SB-1 (1)) OhjdoOrfdwlrq= P dwul{= SOIL F radhfwlrq G dwh = 1/31/2013 11:45ShufhqwP rlwxuh= Uhsruw G loxwlrq D qdd vhv Uhvxov GdwhDqdodOlp lw Xqlw T xdo Idfvru **GAMMA SPECTROSCOPY RESULTS** Prep Date: 2/8/2013 PrepBy: SAM **PAI 713** G 1.32 (+/- 0.29) 0.46 pCi/g NA 3/4/2013 08:42 Ra-228 ND (+/- 0.5) U,G NA 3/4/2013 08:42 0.9 pCi/g

Ra-228

VDP SOH VXP P DU\ UHSRUW

3/4/2013 09:44

3/4/2013 09:44

NA

NA

Gdwh=06-Mar-13ALS Environmental Fdhqw= Sumhfw⊨ 1302223 Z run Rughu= 1302041 Ode IG = 1302041-2Vdp sdn LG = 1302223-20A (RO-SB-1 (5)) OhjdoOrfdwlrq= P dwul{= SOIL F rashfwlrq G dwh= 1/31/2013 12:00ShufhqwP rlwxuh= Uhsruw G loxwlrq D qdd vhv Uhvxow GdwhDqdodOlp lw Xqlw T xdo Idfvru **GAMMA SPECTROSCOPY RESULTS** Prep Date: 2/8/2013 PrepBy: SAM **PAI 713**

0.54 pCi/g

1.03 pCi/g

G

1.09 (+/- 0.34)

1.17 (+/- 0.75) M,G,NQ

VDP SOH VXP P DU\ UHSRUW

 Follow=
 ALS Environmental
 G dwh= 06-Mar-13

 Sumhfw=
 1302223
 Z run R ughu= 1302041

 $Vdp \ sdn \ IG = 1302223-21A \ (RO-SB-1 \ (10))$ Ode IG = 1302041-3

 GAMMA SPECTROSCOPY RESULTS
 PAI 713
 Prep Date: 2/8/2013
 PrepBy: SAM

 Ra-226
 0.89 (+/- 0.34)
 LT,G,TI
 0.58 pCi/g
 NA
 3/4/2013 09:44

 Ra-228
 ND (+/- 0.53)
 U,G
 0.93 pCi/g
 NA
 3/4/2013 09:44

VDP SOH VXP P DU\ UHSRUW

Gdwh=06-Mar-13Fdhqw= ALS Environmental Sumhfw⊨ 1302223 Z run Rughu= 1302041 Ode IG = 1302041-4 Vdp sdn IG = 1302223-22A (RO-SB-1 (15)) OhjdoOrfdwlrq= ${\tt P dwal} \{ = SOIL$ F ræhfwlrq G dwh= 2/1/2013~09:57ShufhqwP rlwxuh= Uhsruw G loxwlrq D qdd vhv Uhvxow Olp lw Xqlw GdwhDqdod}hg T xdo Idfvru М

GAMMA SPECTROSCOPY RESULTS			PAI 713		Prep Date: 2/8/2013	PrepBy: SAM
Ra-226	0.87 (+/- 0.25)	LT,G	0.38	pCi/g	NA	3/4/2013 09:44
Ra-228	ND (+/- 0.4)	U,G	0.82	pCi/g	NA	3/4/2013 09:44

VDP SOH VXP P DU\ UHSRUW

Gdwh=06-Mar-13ALS Environmental Fdhqw= Sumhfw⊨ 1302223 Z run Rughu= 1302041 Ode IG = 1302041-5Vdp sdn LG = 1302223-23A (RO-SB-1 (20)) OhjdoOrfdwlrq= P dwul{= SOIL F rodnfwlrq G dwh= 2/1/2013 09:40ShufhqwP rlwxuh= Uhsruw G loxwlrq D qdd vhv Uhvxow GdwhDqdodOlp lw Xqlw T xdo Idfvru

 GAMMA SPECTROSCOPY RESULTS
 PAI 713
 Prep Date: 2/8/2013
 PrepBy: SAM

 Ra-226
 0.58 (+/- 0.27)
 LT,G,TI
 0.51 pCi/g
 NA
 3/4/2013 09:44

 Ra-228
 0.99 (+/- 0.62)
 NQ,G
 0.81 pCi/g
 NA
 3/4/2013 09:44

${\tt DOV\,Hqylurqp\,hqwdo00IF}$

VDP SOH VXP P DU\ UHSRUW

F all and we	ALS Environmental					G dwh= 06-Mar-13			
Sumhfw⊨	1302223				Z	run R ughu= 1302041			
Vdp sdn IG =	1302223-24A (RO-S	SB-1 (25))	Ode IG = 1302041-6						
OhjdoOrfdwlrq	hjdoOrfdwlrq= P dw.ll{= SOIL								
Frantwird Gdwh	$= 2/1/2013\ 10:18$		ShufhqwP rlwxuh=						
D qdd vhv		Uhvxov	T xdo	Uhsruw Olplw	Xqlw	G lxwlrq Idfvru	GdwhDqdd }hg		
GAMMA SPECT	ROSCOPY RESULTS			PAI 713		Prep Date: 2/8/2013	PrepBy: SAM		
Ra-226		1.07 (+/- 0.28)	G	0.4	5 pCi/g	NA	3/4/2013 09:44		
Ra-228		1.11 (+/- 0.43)	G,TI	0.6	4 pCi/g	NA	3/4/2013 09:44		

VDP SOH VXP P DU\ UHSRUW

Gdwh=06-Mar-13ALS Environmental Fdhqw= Sumhfw⊨ 1302223 Z run Rughu= 1302041 Ode IG = 1302041-7Vdp sdn LG = 1302223-25A (RO-SB-1 (30)) OhjdoOrfdwlrq= P dwul{= SOIL F rodnfwlrq G dwh= $2/1/2013 \ 10:10$ ShufhqwP rlwxuh= Uhsruw G loxwlrq D qdd vhv Uhvxov GdwhDqdodOlp lw Xqlw T xdo Idfvru

 GAMMA SPECTROSCOPY RESULTS
 PAI 713
 Prep Date: 2/8/2013
 Prep By: SAM

 Ra-226
 0.56 (+/- 0.26)
 LT,G,TI
 0.49 pCi/g
 NA
 3/4/2013 09:44

 Ra-228
 ND (+/- 0.6)
 U,G
 0.94 pCi/g
 NA
 3/4/2013 09:44

ALS Environmental -- FC

LIMS Version: 6.631 94 of 99 AR Page 7 of 10

${\tt DOV\,Hqylurqp\,hqwdo00IF}$

VDP SOH VXP P DU\ UHSRUW

Falhqw=	ALS Environmental					G dwh= 06-Mar-13			
Sumhfw⊨	1302223				Z	run R ughu= 1302041			
Vdp sdn IG=	1302223-26A (RO-S	SB-1 (35))				Ode IG = 1302041-8			
OhjdoOrfdwlrq= P dwul{= SOIL									
Fronfwird Gdwh	= 2/1/2013 10:05		ShufhqwP rlwxuh=						
D qdd vhv		Uhvxov	T xdo	Uhsruw Olplw	Xqlw	G lxwlrq Idfvru	G dwh D qdd }hg		
GAMMA SPECT	ROSCOPY RESULTS			PAI 713		Prep Date: 2/8/2013	PrepBy: SAM		
Ra-226		0.72 (+/- 0.22)	LT	0.3	8 pCi/g	NA	3/4/2013 09:44		
Ra-228		ND (+/- 0.39)	U	0.5	9 pCi/g	NA	3/4/2013 09:44		

VDP SOH VXP P DU\ UHSRUW

F chare ALS Environmental G dwh= 06-Mar-13

Sumhfw= 1302223 Z run R ughu= 1302041

Vdp sdnIG = 1302223-26A (RO-SB-1 (35)) Ode IG = 1302041-8

OhjdoOrfdwlrq= P dwal{= SOIL

Frankfwlrg Gdwh= 2/1/2013 10:05 ShufhqwP rlwxuh=

Uhsruw Christo

D qdd vhv G lxwlrq

U hxxov T xdo O lp lw X q lw I dfyru G dwh D qdd } hg

H {sodqdwlrq riT xddilhuv

Radiochemistry:

U or ND - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

G - Sample density differs by more than 15% of LCS density.

D - DER is greater than Control Limit

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested

MDC

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).

U or ND - Indicates that the compound was analyzed for but not detected.

E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.

M - Duplicate injection precision was not met.

N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.

Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.

* - Duplicate analysis (relative percent difference) not within control limits.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.

- B Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.
- E Analyte concentration exceeds the upper level of the calibration range.
- J Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).
- A A tentatively identified compound is a suspected aldol-condensation product.
- X The analyte was diluted below an accurate quantitation level.
- * The spike recovery is equal to or outside the control criteria used.
- + The relative percent difference (RPD) equals or exceeds the control criteria.

Diesel Range Organics:

ALS Environmental -- FC

LIMS Version: 6.631 AR Page 9 of 10

47 ri 4:

VDP SOH VXP P DU\ UHSRUW

Gdwh=06-Mar-13Fdhqw= ALS Environmental Sumhfw⊨ 1302223 Z run Rughu= 1302041 Ode IG = 1302041-8Vdp sdn IG = 1302223-26A (RO-SB-1 (35)) OhjdoOrfdwlrq= P dwal{= SOIL F radhfwlrq G dwh= 2/1/2013 10:05ShufhqwP rlwxuh= Uhsruw G loxwlrq D qdd vhv G dwh D qdo | hg Uhvxov $\text{Ol}_{\mathbb{Q}} \text{Iw}$ T xdo XqIdfvru

- D A pattern resembling diesel was detected in this sample.
- M A pattern resembling motor oil was detected in this sample.
- C A pattern resembling crude oil was detected in this sample.
- 4 A pattern resembling JP-4 was detected in this sample.
- 5 A pattern resembling JP-5 was detected in this sample.
- H Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.
- L Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.
- Z This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products: gasoline
- JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

ALS Environmental -- FC

LIMS Version: 6.631

97 of 99

AR Page 10 of 10

G - A pattern resembling gasoline was detected in this sample.

ALS Environmental -- FC

Folhqw ALS Environmental

Z run Rughu= 1302041 Sumhfw= 1302223

$Gdwh = 3/6/2013 \ 7:19:1$

TF EDWFK UHSRUW

Batch ID: 6	GS130207-2-1	Instrument ID:	GAMMA		Method:	Gamma S	pectroso	copy Results			
LCS	Sample ID: GS130)207-2A				Units: pCi/	'g	Analys	is Date:	3/4/2013 10	0:40
Client ID:		Ru	ın ID: GS130 2	207-2A				Prep Date: 2/8/	2013	DF: N	A
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qua
Ra-226		466 (+/- 55)	3	469.4		99.3	85-115				P,M
LCS	Sample ID: GS130	207-2				Units: pCi/	'g	Analys	Analysis Date: 3/4/2013 10:		
Client ID:		Ru	ın ID: GS130 2	207-2A				Prep Date: 2/8/	2013	DF: N .	Α
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qua
Am-241		487 (+/- 59)	15	475.4		103	85-115				Р
Co-60		206 (+/- 24)	1	204.9		100	85-115				Р
Cs-137		179 (+/- 21)	1	173.7		103	85-115				Р
МВ	Sample ID: GS130	207-2				Units: pCi/	'g	Analys	is Date:	3/4/2013 09	9:49
Client ID:		Ru	ın ID: GS130 2	207-2A				Prep Date: 2/8/	2013	DF: N .	Α
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qua
Ra-226		ND	0.24								U
Ra-228		ND	0.4								U
The follow	wing samples were a	nalyzed in this bate	1:	302041-1 302041-4 302041-7	130)2041-2)2041-5)2041-8		302041-3 302041-6			

TECHNICAL BULLETIN ADDENDUM

The library used for analysis defines the gamma emission(s) to be used for analysis of each nuclide. If multiple gamma emissions are used for quantification, then a 'NET' quantification emission (or peak) must be defined in the library. This designation provides for the calculation of nuclide activity concentrations and detection limits in the case of non-presence of the nuclide. When the nuclide is not present, or the software is unable to resolve a peak at the library defined 'NET' energy, the software evaluates the 'NET' region of interest ('NET' peak energy +/- 2 keV) by performing a summation of the net counts above the background level. This 'NET' quantification can result in net negative, zero, or positive activity results, and is highly dependent on the spectral distribution in the region of interest of the 'NET' peak. In cases where only the 'NET' peak is found, and the software performs a net quantification, the nuclide result will be flagged with an 'NQ' qualifier on the final reports. This indicates that the nuclide is not detected or supported at any level above the reported MDC. Results are submitted without further qualification.

All nuclides specified in the library of analysis for gamma spectroscopy are evaluated for positive <u>OR</u> tentative identification on the following criteria:

- The individual abundances for the gamma emissions specified for each nuclide are summed to obtain a total nuclide abundance.
- From the total nuclide abundance, a positive identification criterion is set as 75% of this total nuclide abundance.
- For all nuclide peaks that are not net quantified, those peak abundances are summed. The total non-net quantified peak sum is compared to the calculated 75% abundance criterion. If this sum is greater than the 75% criterion, the nuclide is considered to be positively identified at the reported concentration. If the sum is less than the 75% criterion, the nuclide is tentatively identified at the reported concentration. These results will be flagged with a 'TI' qualifier on the final reports to indicate that the 75% abundance criterion was not met.

99 of 99 4: ri4:



06-Mar-2013

Robert Combs
Navajo Refining Company
PO Box 159
Artesia, NM 88211

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

Re: RO Discharge Sampling Work Order: **1302400**

Dear Robert,

ALS Environmental received 20 samples on 31-Jan-2013 09:10 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 9H

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

Sincerely,

Electronically approved by: Jumoke M. Lawal

Sonie West

Sonia West Project Manager TNI LABORATORY

Certificate No: T104704231-12-10

ALS Environmental

Date: 06-Mar-13

Client: Navajo Refining Company
Project: RO Discharge Sampling

Work Order: 1302400

Work Order Sample Summary

Lab Samp II	Client Sample ID	<u>Matrix</u>	Tag Number	Collection Date	Date Received	Hold
1302400-01	MW-115 (1)	Soil		1/29/2013 14:25	1/31/2013 09:10	
1302400-02	MW-115 (5)	Soil		1/29/2013 14:35	1/31/2013 09:10	
1302400-03	MW-115 (10)	Soil		1/29/2013 16:10	1/31/2013 09:10	
1302400-04	MW-115 (15)	Soil		1/29/2013 15:20	1/31/2013 09:10	
1302400-05	MW-115 (20)	Soil		1/29/2013 16:00	1/31/2013 09:10	
1302400-06	MW-115 (25)	Soil		1/29/2013 15:45	1/31/2013 09:10	
1302400-07	MW-116 (1)	Soil		1/29/2013 16:05	1/31/2013 09:10	
1302400-08	MW-116 (5)	Soil		1/29/2013 16:32	1/31/2013 09:10	
1302400-09	MW-116 (10)	Soil		1/30/2013 09:02	1/31/2013 09:10	
1302400-10	MW-116 (15)	Soil		1/30/2013 09:10	1/31/2013 09:10	
1302400-11	MW-116 (20)	Soil		1/30/2013 09:20	1/31/2013 09:10	
1302400-12	MW-116 (25)	Soil		1/30/2013 09:35	1/31/2013 09:10	
1302400-13	MW-114 (1)	Soil		1/28/2013 14:30	1/31/2013 09:10	
1302400-14	MW-114 (5)	Soil		1/28/2013 14:45	1/31/2013 09:10	
1302400-15	MW-114 (10)	Soil		1/28/2013 15:30	1/31/2013 09:10	
1302400-16	MW-114 (15)	Soil		1/28/2013 15:50	1/31/2013 09:10	
1302400-17	MW-114 (20)	Soil		1/28/2013 16:10	1/31/2013 09:10	
1302400-18	MW-114 (25)	Soil		1/28/2013 16:20	1/31/2013 09:10	
1302400-19	MW-114 (30)	Soil		1/28/2013 16:00	1/31/2013 09:10	
1302400-20	MW-114 (35)	Soil		1/28/2013 16:50	1/31/2013 09:10	

ALS Environmental

Date: 06-Mar-13

Client: Navajo Refining Company
Project: RO Discharge Sampling

Work Order: 1302400

Case Narrative

The analyses for Radium 226 and Radium 228 were subcontracted to ALS Environmental in Ft. Collins, CO.

Client: Navajo Refining Company

Project: RO Discharge Sampling Work Order: 1302400

 Sample ID:
 MW-115 (1)
 Lab ID: 1302400-01

 Collection Date:
 1/29/2013 02:25 PM
 Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 06-Mar-13

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached013/5/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling Work Order: 1302400

 Sample ID:
 MW-115 (5)
 Lab ID:
 1302400-02

 Collection Date:
 1/29/2013 02:35 PM
 Matrix:
 SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 06-Mar-13

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached013/5/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302400

 Sample ID: MW-115 (10)
 Lab ID: 1302400-03

Collection Date: 1/29/2013 04:10 PM

Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 06-Mar-13

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached013/5/2013

Client: Navajo Refining Company

Work Order: 1302400 **Project: RO Discharge Sampling**

Lab ID: 1302400-04 **Sample ID:** MW-115 (15) **Collection Date:** 1/29/2013 03:20 PM Matrix: SOIL

Report Dilution **Date Analyzed** Limit **Analyses MDL Factor** Result Qual Units

Date: 06-Mar-13

MISCELLANEOUS ANALYSIS Method: NA Analyst: SUB 3/5/2013 Miscellaneous Analysis See Attached 0

Date: 06-Mar-13

Client: Navajo Refining Company Work Order: 1302400 **Project: RO Discharge Sampling**

Lab ID: 1302400-05 **Sample ID:** MW-115 (20)

Collection Date: 1/29/2013 04:00 PM Matrix: SOIL

Report **Dilution Date Analyzed** Limit **Analyses MDL Factor** Result Qual Units

MISCELLANEOUS ANALYSIS Method: NA Analyst: SUB 3/5/2013 Miscellaneous Analysis See Attached 0

Date: 06-Mar-13

Client: Navajo Refining Company Work Order: 1302400 **Project: RO Discharge Sampling**

Lab ID: 1302400-06 **Sample ID:** MW-115 (25)

Collection Date: 1/29/2013 03:45 PM Matrix: SOIL

Report **Dilution Date Analyzed** Limit **Analyses MDL Factor** Result Qual Units

MISCELLANEOUS ANALYSIS Method: NA Analyst: SUB 3/5/2013 Miscellaneous Analysis See Attached 0

Client: Navajo Refining Company

 Project:
 RO Discharge Sampling
 Work Order: 1302400

 Sample ID:
 MW-116 (1)
 Lab ID: 1302400-07

 Sample ID:
 MW-116 (1)
 Lab ID: 130240

 Collection Date:
 1/29/2013 04:05 PM
 Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 06-Mar-13

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached013/5/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302400

 Sample ID: MW-116 (5)
 Lab ID: 1302400-08

Collection Date: 1/29/2013 04:32 PM

Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 06-Mar-13

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached013/5/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302400

 Sample ID: MW-116 (10)
 Lab ID: 1302400-09

Collection Date: 1/30/2013 09:02 AM Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 06-Mar-13

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached013/5/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302400

 Sample ID: MW-116 (15)
 Lab ID: 1302400-10

Collection Date: 1/30/2013 09:10 AM

Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached013/5/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302400

 Sample ID: MW-116 (20)
 Lab ID: 1302400-11

Collection Date: 1/30/2013 09:20 AM Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached013/5/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302400

 Sample ID: MW-116 (25)
 Lab ID: 1302400-12

Collection Date: 1/30/2013 09:35 AM Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 06-Mar-13

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached013/5/2013

Client: Navajo Refining Company

 Project:
 RO Discharge Sampling
 Work Order: 1302400

 Sample ID:
 MW-114 (1)
 Lab ID: 1302400-13

 Sample ID:
 MW-114 (1)
 Lab ID: 130240

 Collection Date:
 1/28/2013 02:30 PM
 Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 06-Mar-13

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached013/5/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302400

 Sample ID: MW-114 (5)
 Lab ID: 1302400-14

Collection Date: 1/28/2013 02:45 PM Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 06-Mar-13

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached013/5/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302400

 Sample ID: MW-114 (10)
 Lab ID: 1302400-15

Collection Date: 1/28/2013 03:30 PM Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 06-Mar-13

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached013/5/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302400

 Sample ID: MW-114 (15)
 Lab ID: 1302400-16

Collection Date: 1/28/2013 03:50 PM Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 06-Mar-13

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached013/5/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302400

 Sample ID: MW-114 (20)
 Lab ID: 1302400-17

Collection Date: 1/28/2013 04:10 PM Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached013/5/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302400

 Sample ID: MW-114 (25)
 Lab ID: 1302400-18

Collection Date: 1/28/2013 04:20 PM Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached013/5/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302400

 Sample ID: MW-114 (30)
 Lab ID: 1302400-19

Collection Date: 1/28/2013 04:00 PM

Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSIS
Method: NA

Method: NA

Analyst: SUB

Miscellaneous Analysis
See Attached
0 1 3/5/2013

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 1302400

 Sample ID: MW-114 (35)
 Lab ID: 1302400-20

Collection Date: 1/28/2013 04:50 PM Matrix: SOIL

Report Dilution

Analyses Result Qual MDL Limit Units Factor Date Analyzed

MISCELLANEOUS ANALYSISMethod: NAAnalyst: SUBMiscellaneous AnalysisSee Attached013/5/2013

Date: 06-Mar-13 **ALS Environmental**

Client: Navajo Refining Company **QUALIFIERS, Project:** RO Discharge Sampling ACRONYMS, UNITS

WorkOrder: 1302400

Qualifier	<u>Description</u>
*	Value exceeds Regulatory Limit
a	Not accredited
В	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
Н	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
	D
<u>Acronym</u>	<u>Description</u>
Acronym DCS	Detectability Check Study
-	
DCS	Detectability Check Study
DCS DUP	Detectability Check Study Method Duplicate
DCS DUP LCS	Detectability Check Study Method Duplicate Laboratory Control Sample
DCS DUP LCS LCSD	Detectability Check Study Method Duplicate Laboratory Control Sample Laboratory Control Sample Duplicate
DCS DUP LCS LCSD MBLK	Detectability Check Study Method Duplicate Laboratory Control Sample Laboratory Control Sample Duplicate Method Blank
DCS DUP LCS LCSD MBLK MDL	Detectability Check Study Method Duplicate Laboratory Control Sample Laboratory Control Sample Duplicate Method Blank Method Detection Limit
DCS DUP LCS LCSD MBLK MDL MQL	Detectability Check Study Method Duplicate Laboratory Control Sample Laboratory Control Sample Duplicate Method Blank Method Detection Limit Method Quantitation Limit
DCS DUP LCS LCSD MBLK MDL MQL MS	Detectability Check Study Method Duplicate Laboratory Control Sample Laboratory Control Sample Duplicate Method Blank Method Detection Limit Method Quantitation Limit Matrix Spike
DCS DUP LCS LCSD MBLK MDL MQL MS	Detectability Check Study Method Duplicate Laboratory Control Sample Laboratory Control Sample Duplicate Method Blank Method Detection Limit Method Quantitation Limit Matrix Spike Matrix Spike Duplicate
DCS DUP LCS LCSD MBLK MDL MQL MS MSD PDS	Detectability Check Study Method Duplicate Laboratory Control Sample Laboratory Control Sample Duplicate Method Blank Method Detection Limit Method Quantitation Limit Matrix Spike Matrix Spike Duplicate Post Digestion Spike
DCS DUP LCS LCSD MBLK MDL MQL MS MSD PDS PQL	Detectability Check Study Method Duplicate Laboratory Control Sample Laboratory Control Sample Duplicate Method Blank Method Detection Limit Method Quantitation Limit Matrix Spike Matrix Spike Duplicate Post Digestion Spike Practical Quantitation Limit
DCS DUP LCS LCSD MBLK MDL MQL MS MSD PDS PQL SD	Detectability Check Study Method Duplicate Laboratory Control Sample Laboratory Control Sample Duplicate Method Blank Method Detection Limit Method Quantitation Limit Matrix Spike Matrix Spike Duplicate Post Digestion Spike Practical Quantitation Limit Serial Dilution

Sample Receipt Checklist

Client Name: N	AVAJO REFINING				Date/Time	Received:	<u>31-</u>	<u>Jan-13</u>	<u>09:10</u>		
Work Order: 13	<u>301997</u>				Received b	y:	RD	<u>H</u>			
Matrices:	ed by Lahnnie B. Allen eSignature	3	31-Jan-13 Date	_	Reviewed by:	Patricia eSignatur		Lyne	h		01-Feb-13 Date
Carrier name:	FedEx Priority Overnight										
Shipping containe	er/cooler in good condition?		Yes	~	No 🗌	Not F	resent				
Custody seals inta	act on shipping container/coole	r?	Yes	✓	No 🗆	Not F	resent				
Custody seals inta	act on sample bottles?		Yes		No 🗌	Not F	resent	✓			
Chain of custody p	present?		Yes	~	No 🗌						
Chain of custody s	signed when relinquished and r	eceived?	Yes	✓	No 🗌						
Chain of custody a	agrees with sample labels?		Yes	~	No 🗌						
Samples in proper	r container/bottle?		Yes	✓	No 🗌						
Sample containers	s intact?		Yes	~	No 🗌						
Sufficient sample	volume for indicated test?		Yes	~	No 🗆						
All samples receiv	ved within holding time?		Yes	✓	No 🗌						
Container/Temp B	Blank temperature in complianc	e?	Yes	✓	No 🗌						
Temperature(s)/TI	hermometer(s):		1.2 C/u	ıc			<u>IR 1</u>				
Cooler(s)/Kit(s):			<u>5414</u>								
Date/Time sample	e(s) sent to storage:		1/31/1								
Water - VOA vials	have zero headspace?		Yes	✓	No 🗆	No VOA	∕ials sub _	mitted			
	table upon receipt?		Yes	✓	No 🗀	N/A L					
pH adjusted? pH adjusted by:			Yes -		No 🗹	N/A L					
Login Notes:	Ra-226/228 & cyanide not or	n COC. Incorrect r	netals list	on C	OC.						
									= = =		====
Client Contacted:		Date Contacted:			Person	Contacted	i:				
Contacted By:		Regarding:									
Comments:											
CorrectiveAction:									S	RC Pa	ge 1 of 1

25 of 93

Sample Receipt Checklist

Client Name: N	AVAJO REFINING				Date/Time I	Received	: <u>31-</u>	<u>Jan-13</u>	<u>09:10</u>		
Work Order: 13	<u>8011005</u>				Received b	y:	RD	<u>H</u>			
Matrices:	ed by Lohnne B. Delen eSignature soil/water	3	31-Jan-13 Date	_ F	Reviewed by:	Patrie eSignati		Lyne	h		01-Feb-13 Date
Carrier name:	FedEx Priority Overnight										
Shipping container	c/cooler in good condition?		Yes	✓	No 🗆	Not	Present				
Custody seals inta	ct on shipping container/coole	r?	Yes	✓	No 🗆	Not	Present				
Custody seals inta	ct on sample bottles?		Yes		No 🗌	Not	Present	✓			
Chain of custody p	present?		Yes	✓	No 🗌						
Chain of custody s	igned when relinquished and r	eceived?	Yes	✓	No 🗌						
Chain of custody a	grees with sample labels?		Yes	✓	No 🗆						
Samples in proper	container/bottle?		Yes	✓	No 🗌						
Sample containers	s intact?		Yes	✓	No 🗌						
Sufficient sample v	volume for indicated test?		Yes	✓	No 🗆						
All samples receive	ed within holding time?		Yes	✓	No 🗌						
Container/Temp B	lank temperature in complianc	e?	Yes	✓	No 🗌						
Temperature(s)/Th	nermometer(s):		1.4 C/u	IC			<u>IR 1</u>				
Cooler(s)/Kit(s):			4028								
Date/Time sample	(s) sent to storage:		1/31/13								
Water - VOA vials	have zero headspace?		Yes	✓	No 🗔	No VOA	vials sub	mitted			
Water - pH accepta	able upon receipt?		Yes	✓	No 🗔	N/A					
pH adjusted? pH adjusted by:			Yes		No 🗹	N/A					
Login Notes:	Trip blank received, but not	on COC. Ra-226/2	228 & cyar	nide no	ot on COC. Inc	orrect me	etals list o	n COC.	•		
=====	:======	=====	===		====		:				====
Client Contacted:		Date Contacted:			Person	Contacte	ed:				
Contacted By:		Regarding:									
Comments:											
CorrectiveAction:									S	SRC Pa	nge 1 of 1

Sample Receipt Checklist

Client Name:	NAVAJO REFINING				Date/Time	Receive	ed: <u>31-</u>	<u>Jan-13</u>	<u>09:10</u>		
Work Order:	1302026				Received b	y:	RD	<u>H</u>			
Checklist compl Matrices:	eted by <u>Robert D. Harris</u> eSignature <u>soils</u>		01-Feb-13 Date	_	Reviewed by:	Patro eSigna	icia L. (Lyne	h	1	3-Feb-13 Date
Carrier name:	FedEx										
Shipping contain	ner/cooler in good condition?		Yes	~	No 🗌	No	t Present				
Custody seals in	ntact on shipping container/coole	r?	Yes	✓	No 🗌	No	t Present				
Custody seals in	ntact on sample bottles?		Yes		No 🗌	No	t Present	✓			
Chain of custody	y present?		Yes	✓	No 🗌						
Chain of custod	y signed when relinquished and	received?	Yes	✓	No 🗌						
Chain of custod	y agrees with sample labels?		Yes		No 🗸						
Samples in prop	er container/bottle?		Yes	~	No 🗌						
Sample containe	ers intact?		Yes	✓	No 🗌						
Sufficient sampl	e volume for indicated test?		Yes	✓	No 🗆						
All samples rece	eived within holding time?		Yes	✓	No 🗌						
Container/Temp	Blank temperature in compliand	e?	Yes	✓	No 🗆						
Temperature(s)/	Thermometer(s):		1.8c c/	<u>u</u>			005				
Cooler(s)/Kit(s):			<u>3725</u>								
Date/Time samp	ole(s) sent to storage:		2/1/13								
Water - VOA via	lls have zero headspace?		Yes	✓	No 🗀	No VO	A vials sub	mitted			
Water - pH acce	ptable upon receipt?		Yes		No 🗀	N/A	✓				
pH adjusted? pH adjusted by:			Yes		No L	N/A	✓				
Login Notes:	COC and sample count rece	aived didn't match	un DI en	oka w	vith client and av	ot every	thing corre	etad La	agged in k	N/	
Logiii Notes.	PL.	eiveu didirit matcir	<u>ир. г∟ ър</u>	OKE W	nti i chent and gi	ot every	uning correc	JIEU. LI	igged iii k	<u>у</u>	
						- — —					
01		Data Ocatavitat			Dominio	01	re-d				
Client Contacted	1:	Date Contacted:			Person	Contac	tea:				
Contacted By:		Regarding:									
Comments:											
CorrectiveAction	1:								SR	C Pag	e 1 of 1

	,	



Chain of Custody Form

Cincinnati, OH +1 513 733 5336

Everett, WA +1 425 356 2600

Fort Collins, CO +1 970 490 1511 1302400

NAVAJO REFINING: Navajo Refining Company

Project: RO Discharge Sampling



Customer Information	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	A	LS Project	Manager			100			100		*	***************************************	#### II##		115 2845 1981
Purchase Order			nformatic	អា		10000		Pai	ramet	er/Me	thind	Reduc	est for /	numeromes A	Monapolis Mar	(DENER AND
A STANDARD CONTRACTOR CONTRACTOR	Project	Name 20	Disch	acia /	Sampli	AA	Vo		(820	~					SIS	
Work Order	Project N	umber	2882		•	УB	GR					<u> </u>	<u>rW C</u>	<u>'s+</u>		
Company Name Naurio Retining Co	Bill To Cor	npany No							301							
Send Report To Robert Comb	Invoice				ng Co	2	1		<u>(Ro</u>							
		101	2ect (طحم		D	OR.	<u>0</u>	<u>(80</u>			···				
Address 501 East Main	Ad	dress 50	1 Eas	+ M	a:o	E	14_	بنك	لمح	<u>(13</u>	27	<u>a) r</u>	الدا	GU	3 L	< }-
City/State/Zip Art-Sig NM	City/Sta					F :	1.+	al /	Yet	<u> کاد </u>	<u>(6</u>	220	1700	$f_{\alpha c}$	RCR	AB
Phone	S. 2004 S. 2004		1312, 1			G	حديك	chie	وحا	Met	s: S	(60	2017			2A B
Fax		· · · · · · · · · · · · · · · · · · ·	5-748	<u>[-(,7</u>	<u>33_</u>	H -	ΠĎ	<u> </u>								
e-Mall Address		Fax 5.75	-74b	<u>-543</u>	21	<u> </u>	Hoi	Stu	Ce.							
No. Sample Description	e-Mail Add	uress	i i jagan a		***************************************											
- Programme Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control o	Date	Time	Matrix	Pres.	#.Bottles	A	В	С	D.	E	F	G	H			Hold
7,00 (1311)	11-79-13	1425	Soil		5	X	又	X	X	3	X	3		X	1305 200 131	lioju
	1 -1	1430	ļ		١			-		-	1	 ^*		 		
(100 1F3 (%)		1435			5	久	8	22	4	星	×	Z	1	X X		
	 	1502			1 1					-	1	12-	1			
(10)	<u> </u>	<u> 1507 </u>			í							1 .		X		
1100 IPS (10)		1610			5	爱	¥E.	Z	楚	Z	x	1		Х		
(110 110)	<u> </u>	1612			ì				284	ρ.	×	褒	 	X	-	
110112 (13)		1612			1			;	7	•			 	×		
<u> </u>		1570			4	Re	弦	趸	"是	展	X			$\stackrel{\frown}{\longrightarrow}$		
10. () I S () ampler(s): Please Print & Sign		522	1		ì							発		$\stackrel{X}{\vee}$		
Tue II	Shipme	ent Method:	Requ	ired Tur	naround T		·····		Other			Res	ults Due	~ I	1,33 3 4	2 10 1 10 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
elinquished by Date:	Time:	Received by:	Els	TD 10 Wk (Days	S Wk Da	ys []2 Wk	Days	24	Hour					
Eric Degersen 130/13 Olinquished by: Opto:	1300					Note			*************	·	· · · · · · · · · · · · · · · · · · ·	13333	<u> </u>	10000000	<u> </u>	
olinquished by: Date:		Receivedbythabar	a(ony):	11.		10	Da	1.4	47 i	5,556	lucd	H	-tals	$\mathcal{L}_{\mathbb{Z}}$	A E	Hered
gggd by (Latioratory):		M	M-1	311	Z 1991 (Con	er Temr	a QC	Packag	e: (Ch	ck Bo	v below)		95554	
99ec by (Laboratory) Date	Time' C	hocked by (Labora	lory Control	e de la compa				関し	Leve	l II: S	tandar	d QC + Raw	\Box	I		
eservative Key. 1-HCL 2-HN03 3-H2S04 4-NaOH	5-Na2S2O3 61	James A. S. C.							Leve	IIV: S	W846	+ Kaw CLP-L	Data ike	<u> </u>		
ote: Any changes must be made in writing once samples and			e 4.d	egrees C	9-5035				Othe							
inter salamas and British Williams are in the salar	THE Engan barre have	4 1				2. W. 1507 LES	annelski v riviski de	10.1	~				ı			į

The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s



Cincinnati, OH +1 513 733 5336

Everett, WA +1 425 356 2600 Fort Collins, CO +1 970 490 1511

+1 616 399 6070

Holland, Mi

Chain of Custody Form

Page 2 of Z

Houston, TX +1 281 530 5656

Spring City, PA +1 610 948 4903

South Charleston, WV +1 304 356 3168

Middletown, PA +1 717 944 5541 Salt Lake City, UT +1 801 266 7700

York, PA +1 717 505 5280

Ci	ustomer Informati	ion				Proie	ct Info			ct Manag			, see				rk Ord				建物程
urchase Order		***************************************		Project	Name	. 1) Discha				A	```	OC (82				d Requ	uest fo	r Anal	ysis	***************************************
Work Order			Pr	oject N	úmber	128	3823			······································	В		RO (80				·				
ompany Name	Navajo Refining Co	отралу	BII	To Cor	mpaný	Nav	vajo Rei	lining C	ompany		- c		RO (80		*********						
end Report To	Robert Combs	TA A STORY & W. C. S. S. S. S. S. S. S. S. S. S. S. S. S.		Invoic	e Attn		bert Cor						RO (80								
	501 East Main		245 (4) (8) (8)	Voverbus le Maio la face		501	East N	Main	····-			E LL SVOC (8270) NM GW List									
Address				Ad	ldress							•							·		
City/State/Zip	Artesia, NM 8821	1	C	ity/Stal	te/Zip	Arte	esia, NN	1 8821	 1		G	Taria merata (nozorrono) (nerce o									
Phone	(575) 748-6733			F	hone	(575) 748-6733							DS		5 (0020	<i></i>	ROMA	· · · · · · · · · · · · · · · · · · ·		***	· · · · · · · · · · · · · · · · · · ·
Fax	(575) 746-5421				Fax	ļ	5) 746-5						oisture		·,		 ,		****	<u> </u>	····
Mail Address			e-J	Mail Ad	dress	80 (MA)					0	(35)									
1	Sample Description		Da	lè	T	ime	Mat	rix	Pres.	# Bottle	s A	В			~.		Sin Dist	•	3001000	SJ S	Hold
	N 115 (19)		1-29	-13	15	22	5~	11.		١									Χ		September 1
) 115 (20)				16	∞				5	8	名	18	R	76	X	too.		X		
	N 115 (LI)	·			15	<u> 30 </u>				1	X						X				
	N112 (53)		- -		15	30													X		
	W115 (25)	<u>)</u>	-		15	45				5_	人人	X	X	X	X	×	-Fig		×		
					ļ																
		10-10-10-10-10-10-10-10-10-10-10-10-10-1			ļ					<u> </u>	\\ ··	<u>;</u>		ļ							
······		7-6 ····································	ļ								<u></u>										
		*****			<u> </u>					<u> </u>	1,										
pler(s) Please Print	& Sign		BARRIO A ACA	Shipmer	nt Meth	od	l Li	Regulre	d Turnar	ound Time:	(Charlet	- 12/2018 Reports									
nu là					-		100 181		March March 1997	5 WI	用于通过] 0	her ACC DO	6 00 J		Re	sults D	ue Date	18708-101 AUGUS		
inquished by: Date: Time: Receive 1/30/13 1300				Receive	d by:					Notes:		10 Day	TAT.	Dissolve	d Met	als Field	Filtere	<u> </u>		es dens	
quisned by:		Daté:	Time;		Receive	Alby (Lab	dratoryly	1311	12 1	SAM	Cool				QC F	ackage	: (Check	One Bo			
ged by (Laboratory): Date: Time: Checket				New (Lab dratory) 3 13 (SA (O)					ostanijai Dai indensta	SACRETAGES.		(S)	ان ع } } ا	el II Cid c	30		TRRP	2 3 4 2 10 3 4 3 5 10 10 10 10 10 10 10 10 10 10 10 10 10			

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

Copyright 2011 by ALS Environmental.

8
호
ဖွ

Chain of Custody Form

Page 1 of 7-

Cincinnati, OH +1 513 733 5336

Everett, WA +1 425 356 2600

OCID: 41210

Fort Collins, CO +1 970 490 1511 1302400

NAVAJO REFINING: Navajo Refining Company

Project: RO Discharge Sampling



			AL	S Project N	lanager,												
Customer Information			Project Inf						Par	ainere	HIMMEL	nou r	eques	LIDEA	maiysis	5 11 (3)	nagagaran
Purchase Order		Project N	lame Ro Di	scherge	:15ar	phila	Α	NC	$C \langle$	820	600	No) (L	'nW.	List		
Work Order		Project Nur		22 S.₹7		, 3	В	GRI	5 (ROK	5/4	 }		*			***************************************
Company Name Maraja (Let	rining	Bill To Com	pany Nava	/= Ket	ining	Co	c	10a			5 M	5		······································			
Send Report To Robert C	" raby	Invoice	Attn. Roh	-c+ C	Linder		a	ORO			5 M					<u> </u>	
168 (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA) (ALBARA)							13						7/1.	\	W) Li	ســـــــــــــــــــــــــــــــــــــ	
Address 501 East	Mein	Add	ress 501	Eas	t Ma	ัก	-	Tota			4	_					0
City/State/Zip Actosia, No	4	City/State	Zip A.	sia, M	IM	***************************************	G								<u>20) R</u>		
Phone			- 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	-748		2~3	H		2014	0 /	اولم	L15 (<u>ر ده ک</u>	0/7	009)	<u>KC</u>	(HO
Fax			Fax 575					14	<u> </u>						··········		
e-Mail Address		e-Mail Add		- 17-16.	, 24C	- 1			<i>H</i>	172							
No. Sample Description		Date	Time	Matrix	Pres	# Bottles	-		1 2	10.00	14.20	100-200	i Digeresi	1000000	<u>ৰুজ্জন্ত ক</u>	<u>राज्यकत्त्</u>	UK 1 1870A
1 MW-116 (1)		1/29/13		26.5555555	Pres		A	В	С	D	' ε	J. F.	G	Ĥ		ં	Hold
² MW-116 (3)			1605	<u>Soil</u>		15	<u> </u>	$\perp X$	メ	X	X	<u> </u>	72		X		
3 MW (16 (5)		1/29/13	1618		 		*	100,	_			ļ			X		
4 Mul-116 (7)		1/29/13	1637 0855	-		5	69	3	及	<i>*</i>	多	1×	鬼		1		
5 MW-116 (9)		1/30/13	0855					 			ļ				X		
6 MW-11-(10)		130113	0833 0902			5	10	1 2	100			<u> </u>			>		
7 Mal-116 (11)		1/36/13	0105			10	多	又	異	Ý.	5.	×	数		X		
MW-116 (13)			<u>บาบร</u>			1		 				<u> </u>			X		
9 MW-116 (15)		1/30/13	2010			5	A	灰	ميد				-		X		
10 NW-116 (17)		1/30/13	0715		-			- 47	1/4	2/	40	入	A		X		
Sampler(s): Please Print & Sign		***************************************	ent Method:	Req	uired tur	naround T	ime:	<u></u>	<u>. </u>	Other			Rés	ults Du	e Date:		35.5 A.J.
(MC)					5TD 10 Wk	Days [] 5 Wk	Days	□ 2 W			Hour					
Relinquished by Date			lecaived by:			ji.	No			, ÷	<u> </u>	. 1	1.535	*	<u></u>	<u></u>	2-121-5-1
Eric Sergersen Date		1300					16	2 / Ju							Field	Hill	creck
Jan.	·	une:	eceived by Labor	Hory):	12111	2/91	〉 。	oer Ten			100 100 100 100		x Below) (
Ogged by (Laboratory): Date	T	ime: C	hecked by (Lobera	lotyl	HH				機・ノ機・			Standar Std OC	d QC + Raw	Data		<u> </u>	
		3.00											CLP-L				
Preservative Key 11-HCL 2-HN03 3-H2SC	04 4-NaOH	5-Na2S2O3 6-N	vaHSO4 7:Oti	ier 8-4	degrees	C 9-503	5			Ott	ier: _				,		1
detec Annual detection				45.11 2 11 14 CONST. 1 4-43-70	and the second come	Section A. Donner, Company	Astronomy.	na compressione	19:71								

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

~
0
<u> </u>
9
ω

A	
₽	
	٠
AST SO	÷
A23 ¥20.	
ANNEA ANNA	÷
	÷
Contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of the contract of th	
<i>y</i>	
•	

Chain of Custody Form

COC ID:

Page 2_ of 2_

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

Holland, MI +1 616 399 6070 Houston, TX +1 281 530 5656

Salt Lake City, UT + 1 801 266 7700

41190

Fort Collins, CO +1 970 490 1511

Middletown, PA + 1 717 944 5541

Spring City, PA + 1 610 948 4903 ☐ York, PA + 1 717 505 5280

ALS Project Manager																	/ 04
Cust	tomer Information		Project I	nformatio	n i i i i i	yddigi. H	gradist.	er Egypt	Para	mete	r/Metl	od R	eques	t for A	nalysi	S	Joseph P.
Purchase Order		Project I	Name RO) ischars	e/5a.	upling	Α	٧c	C (82	60)	N	MC	TW.	List		
Work Order		Project Nu		1288		ıj	В	GA	6	(80	215 H)					
Company Name	Navajo Refining	Bill To Com	pany Nav			g (5	C		30	(8	015	21)					
Send Report To	Robert Coups	Invoice		bert C		1	D	OR		(8	015.	M					
			3833 E				E	4	514			$\overline{}$	<i>(M)</i>	1 Gu) Zi	5+	
Address	501 East Main	AG	dress S	51 Eas	 	CIN								(000)	_		88
City/State/Zip	Artesia, NM	City/Stat	e/Zip Ac	G); ₅₅	so luc	ed 1	Meta	15	(60 c	0/70	∞	RCG	RAS			
Phone		P	hone 5	н -	TD												
Fax			Fax 57	11/	Moi	stui	TC										
e-Mail Address		e-Mail Add	iress				J			;							
No.	Sample Description	Date	Time	Matrix	Pres.	# Bottles	Α	В	С	D	Ĕ.	F	G	H		j	Hold
MW-	ue (ia)	1/30/13	O9₹5	Soil		1								·	X		·
	116 (26)	1	920			5	3/2	*	级	K	改	Х	爾		λ		
Land Control 1	·116 (21)		O930												<u>x</u>		
4 MW	-116 (23)		0930			1				:					\ \x		
	116 (25)	1	0735			5	メ	<u>×</u>	x	х	×	×	451	ļ	X		
6						ļ				- :			ļ	<u> </u>	<u> </u>		
70										f.							
8														<u> </u>			
9		•									<u> </u>		·	 			
10 Sampler(s): Please Pi	SALE SIAN	[Chine	ent Method:	1805	vilrad Tu	naround	Time			Other		<u> </u>	lp.	sults Du	o Dato	*44* * *	
Mil	3	Silipii	tent method,	,	STD 10 WK] 5 Wk C	ays			72	1 Hour		Suks Di	e Dale.		
Relinquished by:	Date:	Time:	Received by:				Note	98:		r			l [4		<i>_</i> ,	, C	11
Eric Derg	pessen 1/30/13	1300	PanalG2d by // a	halstonds s			10	Dav		<u> የተነ</u>	<u>ン、<></u>	o luec	1 /01	etals	<u>Fiel</u>	<u>a</u> ⊱;	ite iea
Consideration by:	Date.	3 544 f.C.	Received by (La	142 J	13/11	3/9	Qco	oler Ter	np U	Lev	vel II:	seck Bo Standa	rd OC	wy jednie i		<u> Paleter</u>	Hered
Logged by (Laboratory):	Date	Time:	Checklid by (Ln	borntory);	1			100		Lev	vel III:	Std QC	C + Rav	v Data			
								787	100 i	Lev	vel IV:	SW84	6 CLP-	Like			
Preservative Key: 1	HCL 24HN03 8-H2SO4 4-NaOH	5-NaZ5ZU3 6	-NaHSO4 7	-Umer 8-4	aegrees	U 9-50	J5			Ot	her: _					-	

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

\approx
으
93

ALS

Chain of Custody Form

Cincinnati, OH +1 S13 733 5336

Everett, WA +1 425 356 2600

NAVAJO REFINING: Navajo Refining Company

1302400

Project: RO Discharge Sampling

Page ____ of __3__

/1100

41198

Fort Collins, CO +1 970 490 1511

		AL	S Project N	Manager:					F7.		1188				11 	***	•••
Customer Information		Project In	ormatio	n		1.00		Par	amete	r/Met	nod R	leques	t for A	nalys	is		1
Purchase Order	Project	Name Ro	Discha	rsels	milaria	A	$\sqrt{0}$	(1	576	0	NV	J.G.	w Z	وجزيه			1
Work Order	Project N		823	0	, ,	N I COLO	GR	5 (801	5 M	`						1
Company Name Nausia Retining	Bill To Cor	npany Nava	io Re	Lining		1.	DRI			SH			·	***			1
Send Report To Set Robert Comb	S Invoice	etat tara da la la la la la la la la la la la la la	Ct Con		7		ORO		301						:		1
Address 501 East Mai.			East 1			EL	_ <u>_</u> _S	100		327		M				S	1
City/State/Zip Actesia, NM 8821	City/Sta	te/Zip /	عند لا	u 88	フリ							0/7					4
Phone 575-748-6733			- 748			H -	ZIZE ZOT		<u> </u>	164=	12 11	(0,50	/ 700	<u>5) 131</u>	<u> </u>	<u> </u>	1
FX 575-746-5421			- 7H6							,							1
e-Mail Address	e-Mall Ad		- 1-10	ي رر		1		5t <u>or</u>		70	1 /1 . 1	le-			-		1
No. Sample Description	Date	Time	Matrix	Pres	# Battles	A	TING		0	E	1 <i>H</i> №	0/5	H	<u>;</u>	S: A-1	Hold	1
1 MW-1465	1128/13	1430	Soil			V	X	1				S				noid	
2 MW-114(8)	1/28/13	140	Soil	 	13	-	X	12	X	X	12	农	<u> </u>	×	 	 	1
23 Muj- 114 (5)	1/28/13	1445	7011		182	雅	A	TX.	极	汲	X	杨		+	 	+	
4 Mw-114 (7)	1/28/13	1530	 	 	1	701	19×	20-	-7X	7	-	- PAT		+÷	 		100
5 MW-114(9)	1/28/13	1545				 -	1-				-	 		×	 	-	
6 HW-114 (0)	1/28/15	15 30			专2	R	80	4	Te	2/2	\	#		X	 	 	3?
プローニュー	1/28/13	1530			1	7.4	1	-73 <u>-</u>	_7 <u>.</u> x		_	1		X	 	 	
8 MW-114 (13)	1/28/13	1550			i				-		الكنان		:	X	 	6	
9 MW-114 (15)	1/28/13	550			\$2	8c	R	80	Ec	The state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the s	X	和		X	 	*	
10 MW-114 (17)	1/28/13	1600	l				1	42	- Parit	-102	<u> </u>	1,		x		1	
Sampler(s): Please Print & Sign	Shipn	rent Method;			maround '				Other			Res	ults Du	e Date:			
Quid Eric Ser			14	STD 10 Wk	Days _] 5 Wk (Days	□ 2 W	k Days	□ 2¢	Hour						
	Time:	Received by:				Not		~		~^^.~~	~	, , ,		н.]	
Eric Denersen 1/30/13 Relinguished by Date:	1300 Time:	Rocety) they (Latte	atory); A I	- 11.	:40		10	AR DO		AT.	<u> </u>	x Below	red	1 let	3 S F	-;e <	Filtered
	Ç.	13.	p- 11	311	3 (9)	O	c.er Ter			cl II:		· · · · · · · · · · · · · · · · · · ·	7				
Logged by (Laboratory): Dato:	Time.	Checked by (Labor	story):	U	4		horas e		Lev	el III;	Std QC	+ Raw		一			
Preservative Key 1-HCL 2-HN03 3-H2804 4-Na	OH 5-Na2S201	NaHSO4 7401	her 82	degrees	0 50	16			Lev	el IV:	SW840	6 CLP-I	-ike		,		
				acyless.					Otl	ter:		<u> </u>					

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.



Cincinnati, OH +1 513 733 5336

+1 425 356 2600

Everett, WA

Fort Collins, CO +1 970 490 1511

Chain of Custody Form

Page 2 of

Houston, TX +1 281 530 5656 Spring City, PA +1 610 948 4903 South Charleston, WV +1 304 356 3168

Middletown, PA +1 717 944 5541 Salt Lake City, UT +1 801 266 7700

York, PA +1 717 505 5280

Holland, MI +1 616 399 6070

COC ID: 72331

Environmental ALS Project Manager: ALS Work Order #: Parameter/Method Request for Analysis Customer Information Project Information Purchase Order Project Name RO Discharge/Sampling VOC (8260) NW GW List Work Order В. Project Number 128823 GRO (8015M) Company Name Navajo Refining Company Bill To Company Navajo Refining Company C DRO (8015M) Send Report To D Robert Combs Invoice Attn Robert Combs ORO (8015M) 501 East Main 501 East Main E LL SVOC (8270) NM GW List Address Address Total Metals (6020/7000) RCRA 8 G City/State/Zip Artesia, NM 88211 City/State/Zip Artesia, NM 88211 Dissolved Metals (6020/7000) RCRA 8 H (575) 748-6733 Phone Phone (575) 748-6733 TDS 1 Fax (575) 746-5421 (575) 746-5421 Fax Moisture e-Mail Address e-Mail Address Fingerprint (PIANO/Sp Grav, Sim Dist) Sample Description No. Date Matrix # Bottles G H Hold Time Pres. A 福島 1/28/13 Χ 605 50; Z 2 32 -82 X χ The last 1610 1/28/13 1615 X 4 1/28/13 X 1615 5 1620 6 1625 7 1627 8 De 1600 - % 1/4 9 1640 1/28/13 10 1640 Sampler(s) Please Print & Sign Shipment Method Required Turnaround Time: (Check Box) Results Due Date: Other_ 2 MK Days 24 Hour Std 10 WK Days 5 WK Days Relinquiplied by: Time: Received by: Date: 10 Day TAT. Dissolved Metals Field Filtered 1/30 1300 Date: Relinquished by: Time: Cooler,ID Copier Temp. QC Package: (Check One Box Below) Level II Sid QC TRRP CheckList Date: Checked by (Laboratory): Logged by (Laboratory): Time: Level III Std QC/Raw Data TRRP Level IV Level IV SW846/CLP

8-4°C

7-Other

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.

Preservative Key: 1-HCl 2-HNO₃ 3-H₂SO₄ 4-NaOH 5-Na₂S₂O₃ 6-NaHSO₄

Copyright 2011 by ALS Environmental.

Other/EDD

4
0
_
ွှ
ω

ALS
Environmental

Chain of Custody Form

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

Holland, M1 +1 616 399 6070 Houston, TX +1 281 530 5656 Salt Lake City, UT + 1 801 266 7700

Spring City, PA +1 610 948 4903

COC ID: 41209

Fort Collins, CO +1 970 490 1511

Middletown, PA +1 717 944 5541

T York, PA 1 717 505 5280

		AL.				多 .										
Customer Information		Project In	formatio	n		11.0	1. 9.19	Para	mete	r/Meti	nod R	eques	t for A	nalysi	s	
Purchase Order	Project					A	<u> 700</u>	<u>` (8</u>	ZEC	7 6	tus o	ω	Li5+			
Work Order	Project Nu	mber				В	CIB	O	301	5 M					:	
Company Name Mausia Refining	Bill To Com	pany Na	unio R	etinia	7	6 DRO (8015 M)										
Send Report To Robert Coubs	Involce		et of Co	mps,	7	B ORO (8015M)										
Address 501 East Main				Λ 1		E LL SVOC (BZ70) NM GW List										
Audiess 201 Sasa 1 16'V	Au	fress 50	1 East	t Mai	7	127.73	16401						(000)		RA	8
city/state/Zip Actesia, 1417 8821	City/Stat	e/Zip Arte	s.'e. N	M 88	ZII	G		Solue	ال اي	Yetel	< (6		7000	1 1	CRA	ጽ
Phone 575-748-6733	and the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of the state of t	hone		W. 3		н -	TDS			. , , , , , , , , , , , , , , , , , , ,	, , , , , , , , , , , , , , , , , , , 			<i></i>	<u> </u>	
Fax 575-746-5421		Fax				国 }	(Dissi		,						:	
e-Mail Address	e-Mall Add	e-Mall Address					101,03									
No. Sample Description	Date	Time	Matrix	Pres.	# Bottles	Α	В	С	Ð	E	F	G:	н		J	Hold
1 HW-114 (35)	1/28/13	1650	Soil		5	X	X	メ	Х	X	X	展	委	X		
2.		10-0	00.0										772-			
										 				.,		
44		·														
::5:::					,								,		:	
6																,
7.																·
8														·	,	
<u>(9)</u>					955 V.S.				,							
10	<u> </u>		<u> </u>		3. 7.									لينيب	. !	
Sampler(s); Please Print & Sign Esic Decs	811.0191666 61	ent Method:	1	uired Tur \$10 to Wk		fime:]swk∈	Jaur] 2 wi	Other	24	-	Re	sults Du	e Date:		
Relignuisted by Date:		Received by:		J10 10 111	<i>D2</i> 73 L	Not			K Days	24 لـــا	Hour	196				
Eric Bergersen 1/30/13	1300			,	•				AT.	Dia	جما	ecl .	Metal	F	HF	ilkre
Relinquished by: Date:	Time:	Roceived by (Labo	ratory); ^ \	7111-	101	人道	olor Ten	ع الم	Packa	ge: (Cl	eck Bo	x Belov	1)	· (C		
Logged by (Laboratory): Date	The Cale of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Control of the Contr			ᆀᆙ	<u> ラ </u>	Y W										
	Time	Checken by (CRBO	muly (II —		/el III: ; /el IV:				L		
Preservative Key: 1-HCL 2-HNO3 3-H25O4 (4-NaOH	5-Na2S2O3 ≥ 6	NaHSO4 > 7-0	her 8-4	degrees	C + 9-50:	5		X-PA			~ · · · · · · · ·	CLE	J. K.C		;	
		THE RESERVE	2000年8月	新加州的	地名的多	2004年			- JUU	her: _					:	

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.



March 4, 2013

Ms. Sonia West ALS Environmental 10450 Stancliff Rd, Suite 210 Houston, TX 77099

Re:

ALS Workorder:

13-02-029

Project Name:

None Submitted

Project Number:

1302400

Dear Ms. West:

Eight soil samples were received from ALS Environmental on February 02, 2013. The samples were scheduled for the following analysis:

Gamma Spectroscopy

The results for this analysis are contained in the enclosed report.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental Jeff Kujawa

Project Manager

JRK/mlc

Enclosure (s): Report

ALS is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

	License or Certification
Accreditation Body	Number
Alaska (AK)	UST-086
Alaska (AK)	CO00078
Arizona (AZ)*	AZ0742
California (CA)	06251CA
Colorado (CO)	CO00078
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO00078
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Maryland (MD)	285
Missouri	175
Nevada (NV)	CO000782008A
New Jersey (NJ)**	CO003
North Dakota (ND)	R-057
Oklahoma	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241-09-1
Utah (UT)	CO00078
Washington	C1280



1302029

Gamma Spectroscopy:

The samples were analyzed for the presence of gamma emitting radionuclides according to the current revision of SOP 713.

These samples were prepared according to the current revision of SOP 739. The samples were sealed in steel cans and stored for at least 21 days prior to analysis.

All acceptance criteria were met.

Sample Number(s) Cross-Reference Table

OrderNum: 1302029

Client Name: ALS Environmental

Client Project Name:

Client Project Number: 1302400 Client PO Number: 10-1302400

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
1302400-13A (MW-114 (1))	1302029-1		SOIL	28-Jan-13	14:30
1302400-14A (MW-114 (5))	1302029-2		SOIL	28-Jan-13	14:45
1302400-15A (MW-114 (10))	1302029-3		SOIL	28-Jan-13	15:30
1302400-16A (MW-114 (15))	1302029-4		SOIL	28-Jan-13	15:50
1302400-17A (MW-114 (20))	1302029-5		SOIL	28-Jan-13	16:10
1302400-18A (MW-114 (25))	1302029-6		SOIL	28-Jan-13	16:20
1302400-19A (MW-114 (30))	1302029-7		SOIL	28-Jan-13	16:00
1302400-20A (MW-114 (35))	1302029-8	_	SOIL	28-Jan-13	16:50



Subcontractor:

ALS Environmental

225 Commerce Drive

Fort Collins, CO 80524

TEL: FAX:

(800) 443-1511

(970) 490-1522

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

01-Feb-13

COC ID: 13239

Due Date 06-Feb-13

Acct#: Salesperson Mala H. Belmonte

	- Odiospeison	Maia II. D	CIMIONIC											VV	$-\nu$	
	ustomer Information	(平) 專業學級人。	Pro	ject Inform	nation		7 190 <u>1</u> 1	Pa	rameter	Method	Reques	t for An	alvsis			.
Purchase Order	10-1302026	Projec	t Name	1302026		AR	dium 22					<u>- 197</u> 1 (1971)	,,	<u> </u>	<u> </u>	
Work Order		Projec	t Number			В	'i									
Company Name	ALS Group USA, Corp.	Bill To	Company	ALS Group	USA, Corp.	c										_
Send Report To	Sonia West	Inv Att		Accounts		D					-		<u> </u>			
Address	10450 Stancliff Rd, Suite 210) Addres	SS		cliff Rd, Suite 210	E							!			
						F	****									—
City/State/Zip	Houston, Texas 77099-4338	City/St	ate/Zip	Houston, T	exas 77099-4338	G					***		1			
Phone	(281) 530-5656	Phone		(281) 530-		н							i			
Fax	(281) 530-5887	Fax		(281) 530-	5887											—
eMail Address	Sonia.West@alsglobal.com	eMail (CC	jumoke.lav	/al@alsglobal.com	J	-									
Sample ID		Matrix	Collection		Bottle	A	В	С	= D;	The E	F	G	i si	30.1 g 1	212. z	J
1302026-01E (MV	/-114 (1)) ① (1) /-114 (5)) ②	Soil	28/Jan/20	13 14:30	(1) 40ZGNEAT	X			12.1				1 1			<u>~</u> .
1302026-03E (MW		Soil	28/Jan/20	13 14:45	(1) 4OZGNEAT	X				<u> </u>						
1302026-06E (MW		Soil	28/Jan/20	13 15:30	(1) 4OZGNEAT	X	 	1	1			-			_ _	—
1302026-09E (MW		Soil	28/Jan/20	13 15:50	(1) 4OZGNEAT	X			 	i		- 1	1 1			
1302026-12E (MW	(-114 (20))	Soil	28/Jan/20	13 16:10	(1) 4OZGNEAT	X						<u>-</u>	╁┷┆			—
1302026-15E (MW		Soil	28/Jan/20	13 16:20	(1) 4OZGNEAT	X		l —	<u> </u>	 			1-			
1302026-18E (MW		Soil	28/Jan/20	13 16:00	(1) 4OZGNEAT	X	1	<u> </u>				 	1	_		
1302026-21E (MW	(-114 (35)) (8)	Soil	28/Jan/20	13 16:50	(1) 4OZGNEAT	X		<u> </u>				-	Ħ	<u> </u>	+	

WO 1302026 - F	Please analyze for Radiu	<u>ım 226/228</u> .				
1/1/1/1	la Cara	La Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la Carrier de la				
Relinguished by:	Date/Time	Received by:	Date/Time 2/2-13 093	Cooler IDs	Report	/QC Level
Relinquished by:	Date/Time	Received by:	Date/Time			. * / TAC OA

39 of 93



ALS Environmental - Fort Collins CONDITION OF SAMPLE UPON RECEIPT FORM

Client: HLS TX Workorder No: 13)200	۲9	
Project Manager: JRK Initials: LAS	Date:	221	<u>-</u> <u>3</u>
Does this project require any special handling in addition to standard ALS procedures?	· .	YES	(NO
2. Are custody seals on shipping containers intact?	NONE	(YES)	NO
3. Are Custody seals on sample containers intact?	NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		YES	NO
s. Are the COC and bottle labels complete and legible?		YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		YES	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	(YES)	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	(N/A)	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	(N/A)	YES	NO
10. Is there sufficient sample for the requested analyses?		(YES)	NO
Were all samples placed in the proper containers for the requested analyses?		TES	NO
12. Are all samples within holding times for the requested analyses?		(YES)	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)	1	(YES)	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: < green pea > green pea	N/A	YES	NO
15. Do any water samples contain sediment? Amount		1.55	
Amount of sediment: dusting moderate heavy	(N/A)	YES	NO
16. Were the samples shipped on ice?		YES	(NO)
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 #4	RAD	YES	(NO)
Cooler #:			
Temperature (°C): Hyub			
No. of custody seals on cooler: 2			
DOT Survey/ Acceptance External µR/hr reading: 12			
Background μR/hr reading:			
Were external µR/hr readings ≤ two times background and within DOT acceptance criteria? YES NO / NA (If no, see	Form 008)		
Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXC		0#16	
		2 H 10.	
			·
			
Ilu - Limited volume.			
			~
	·		
If applicable, was the client contacted? (ES) NO / NA, Contact: S. West.	Data/Time	: 2.7.0	
Project Manager Signature / Date: 2. 2. 13	Date/ I mie		
1 roject Wanager Signature / Date: (//// /)			
/IR Gun #2: Oakton, SN 29922500201-0066			
Form 201r24.xls (06/04/2012) *IR Gun #4: Oakton, SN 2372220101-0002		Page 1 of	.]



ALS Environmental - Fort Collins CONDITION OF SAMPLE UPON RECEIPT FORM

Client: HLS 1 X Workorder No: 1302	1029		
Project Manager: JK Initials: CDT		2-5-	<u>.</u> <u>[</u> 3
Does this project require any special handling in addition to standard ALS procedures?		YES	(NO)
2. Are custody seals on shipping containers intact?	NONE	YES	NO
3. Are Custody seals on sample containers intact?	NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		YES	(NO)
5. Are the COC and bottle labels complete and legible?		YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		YES	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	(YES)	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	(N/A)	YES	NO
10. Is there sufficient sample for the requested analyses?		(YES)	NO
11. Were all samples placed in the proper containers for the requested analyses?		(YES)	NO
12. Are all samples within holding times for the requested analyses?		(YES)	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		YES)	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: < green pea > green pea	(N/A)	YES	NO
15. Do any water samples contain sediment? Amount of sediment: dusting moderateheavy	N/A	YES	NO
16. Were the samples shipped on ice?		(YES)	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 (#4)	RAD ONLY	YES	NO
Cooler #: Temperature (°C): 2.0 No. of custody seals on cooler: 3 DOT Survey/Acceptance Information External μR/hr reading: 12 Background μR/hr reading: 11 Were external μR/hr readings ≤ two times background and within DOT acceptance criteria? (YES)/ NO / NA (If no, see Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXEXTRAL VOLUME THAT WAS YEGHES + EC.		D#16.	
f applicable, was the client contacted? YES / NO (N) Contact: Project Manager Signature / Date:	Date/Time	:	
Form 201r24.xis (06/04/2012) *IR Gun #2: Oakton, SN 29922500201-0066 *IR Gun #4: Oakton, SN 2372220101-0002			1

ORIGIN ID: SGRA (281) 530-5656 SHIPPING DEPT ALS LABORATORY GROUP 10450 STANCLIFF SUITE 210 HOUSTON, TX 77099 UNITED STATES US SHIP DATE: 01FEB13 ACTUST: 21.0 LB CAD: 300130/CAFE2606

BILL SENDER

10 ROY FRENCH ALS ENVIRONMENTAL 225 COMMERCE DRIVE

S ENVIRONMENTAL
5 COMMERCE DRIVE

FORT COLLINS CO 80524
(970) 490-- 1611
DEPT: ENVIRONMENTAL



FedEx Express SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION SZ LUSURIZATION

TRK# 4340 2174 0732

SATURDAY ### A2 PRIORITY OVERNIGHT

XO FTCA

80524 co-us DEN



)

ORIGIN ID: SGRA (201) 530-5656 SHIPPING DEPT ALS LABORATORY GROUP 10450 STANCLIFF SUITE 210 HOUSTON, TX 77099 UNITED STATES US

SHIP DATE: 04FEB13 ACTWGT: 49.1 LB CAD: 300130/CAFE2606

BILL SENDER

TO ROY FRENCH
ALS ENVIRONMENTAL
225 COMMERCE DRIVE

12

FORT COLLINS CO 80524

(970) 490-1511

REF: SUB SAMPLES

12

FedEx Express \$21000012121212

TRK# 4340 2174 0813

TUE - 05 FEB A2
RIORITY OVERNIGHT

NA FTCA

80524 co-us DEN



43 of 93

Legal Location:

SAMPLE SUMMARY REPORT

Matrix: SOIL

Client: ALS Environmental Date: 04-Mar-13

 Project:
 1302400
 Work Order:
 1302029

 Sample ID:
 1302400-13A (MW-114 (1))
 Lab ID:
 1302029-1

Collection Date: 1/28/2013 14:30 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GAMMA SPECTROSCOPY RESULTS			PAI 713		Prep Date: 2/6/2013	PrepBy: SAM
Ra-226	1.83 (+/- 0.42)	G	0.65	pCi/g	NA	2/27/2013 12:58
Ra-228	ND (+/- 0.69)	U,G	0.99	pCi/a	NA	2/27/2013 12:58

SAMPLE SUMMARY REPORT

Client: ALS Environmental Date: 04-Mar-13

 Project:
 1302400
 Work Order:
 1302029

 Sample ID:
 1302400-14A (MW-114 (5))
 Lab ID:
 1302029-2

Legal Location: Matrix: SOIL

Collection Date: 1/28/2013 14:45 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GAMMA SPECTROSCOPY RESULTS			PAI 713		Prep Date: 2/6/2013	PrepBy: SAM
Ra-226	1.9 (+/- 0.39)	G	0.38	pCi/g	NA	2/27/2013 12:58
Ra-228	1.12 (+/- 0.57)	G,NQ	1	pCi/a	NA	2/27/2013 12:58

SAMPLE SUMMARY REPORT

Client: ALS Environmental Date: 04-Mar-13

 Project:
 1302400
 Work Order:
 1302029

 Sample ID:
 1302400-15A (MW-114 (10))
 Lab ID:
 1302029-3

Legal Location: Matrix: SOIL

Collection Date: 1/28/2013 15:30 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GAMMA SPECTROSCOPY RESULTS			PAI 713		Prep Date: 2/6/2013	PrepBy: SAM
Ra-226	1.13 (+/- 0.28)	G	0.41	pCi/g	NA	2/27/2013 12:59
Ra-228	ND (+/- 0.45)	U,G	0.66	pCi/g	NA	2/27/2013 12:59

Legal Location:

SAMPLE SUMMARY REPORT

Matrix: SOIL

Client: ALS Environmental Date: 04-Mar-13

 Project:
 1302400
 Work Order:
 1302029

 Sample ID:
 1302400-16A (MW-114 (15))
 Lab ID:
 1302029-4

Collection Date: 1/28/2013 15:50 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GAMMA SPECTROSCOPY RESULTS		PAI 713		Prep Date: 2/6/2013	PrepBy: SAM	
Ra-226	0.9 (+/- 0.26)	LT,G	0.43	B pCi/g	NA	2/27/2013 13:32
Ra-228	ND (+/- 0.52)	U,G	0.89	pCi/a	NA	2/27/2013 13:32

Legal Location:

SAMPLE SUMMARY REPORT

Matrix: SOIL

Client: ALS Environmental Date: 04-Mar-13

 Project:
 1302400
 Work Order:
 1302029

 Sample ID:
 1302400-17A (MW-114 (20))
 Lab ID:
 1302029-5

Collection Date: 1/28/2013 16:10 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GAMMA SPECTROSCOPY RESULTS			PAI 713		Prep Date: 2/6/2013	PrepBy: SAM
Ra-226	0.94 (+/- 0.29)	LT,G	0.46	6 pCi/g	NA	2/27/2013 14:27
Ra-228	1.06 (+/- 0.63)	G,NQ	0.7	7 pCi/g	NA	2/27/2013 14:27

SAMPLE SUMMARY REPORT

Client: ALS Environmental Date: 04-Mar-13

 Project:
 1302400
 Work Order:
 1302029

 Sample ID:
 1302400-18A (MW-114 (25))
 Lab ID:
 1302029-6

Legal Location: Matrix: SOIL

Collection Date: 1/28/2013 16:20 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GAMMA SPECTROSCOPY RESULTS			PAI 713		Prep Date: 2/6/2013	PrepBy: SAM
Ra-226	0.8 (+/- 0.26)	LT,G	0.45	pCi/g	NA	2/28/2013 13:51
Ra-228	ND (+/- 0.4)	U,G	0.73	pCi/g	NA	2/28/2013 13:51

SAMPLE SUMMARY REPORT

Client: ALS Environmental Date: 04-Mar-13

 Project:
 1302400
 Work Order:
 1302029

 Sample ID:
 1302400-19A (MW-114 (30))
 Lab ID:
 1302029-7

Legal Location: Matrix: SOIL

Collection Date: 1/28/2013 16:00 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GAMMA SPECTROSCOPY RESULTS			PAI 713		Prep Date: 2/6/2013	PrepBy: SAM
Ra-226	0.73 (+/- 0.25)	LT,G,TI	0.38	B pCi/g	NA	2/27/2013 14:27
Ra-228	0.86 (+/- 0.47)	LT,G,TI	0.57	pCi/a	NA	2/27/2013 14:27

ALS Environmental -- FC
LIMS Version: 6.631

Legal Location:

SAMPLE SUMMARY REPORT

Matrix: SOIL

Client: ALS Environmental Date: 04-Mar-13

 Project:
 1302400
 Work Order:
 1302029

 Sample ID:
 1302400-20A (MW-114 (35))
 Lab ID:
 1302029-8

Collection Date: 1/28/2013 16:50 Percent Moisture:

Analyses	Result			Dilution Factor	Date Analyzed	
GAMMA SPECTROSCOPY RESULTS			PAI 713		Prep Date: 2/6/2013	PrepBy: SAM
Ra-226	0.82 (+/- 0.28)	LT,G	0.5	pCi/g	NA	2/27/2013 14:27
Ra-228	0.99 (+/- 0.47)	LT,G,TI	0.88	pCi/g	NA	2/27/2013 14:27

SAMPLE SUMMARY REPORT

Client: ALS Environmental Date: 04-Mar-13

Project: 1302400 **Work Order:** 1302029

Sample ID: 1302400-20A (MW-114 (35)) **Lab ID:** 1302029-8

Legal Location: Matrix: SOIL

Collection Date: 1/28/2013 16:50 Percent Moisture:

Report Dilution

Analyses Result Qual Limit Units Factor Date Analyzed

Explanation of Qualifiers

Radiochemistry:

U or ND - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

G - Sample density differs by more than 15% of LCS density.

D - DER is greater than Control Limit

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested

MDC.

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).

U or ND - Indicates that the compound was analyzed for but not detected.

E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.

M - Duplicate injection precision was not met.

N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.

Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.

* - Duplicate analysis (relative percent difference) not within control limits.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.

- B Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.
- E Analyte concentration exceeds the upper level of the calibration range.
- J Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).
- A A tentatively identified compound is a suspected aldol-condensation product.
- X The analyte was diluted below an accurate quantitation level.
- * The spike recovery is equal to or outside the control criteria used.
- + The relative percent difference (RPD) equals or exceeds the control criteria.

Diesel Range Organics:

ALS Environmental -- FC
LIMS Version: 6.631

AR Page 9 of 10

SAMPLE SUMMARY REPORT

Client: ALS Environmental Date: 04-Mar-13

Project: 1302400 **Work Order:** 1302029

Sample ID: 1302400-20A (MW-114 (35)) **Lab ID:** 1302029-8

Legal Location: Matrix: SOIL

Collection Date: 1/28/2013 16:50 Percent Moisture:

Report Dilution
Analyses Result Qual Limit Units Factor Date Analyzed

- G A pattern resembling gasoline was detected in this sample.
- D A pattern resembling diesel was detected in this sample.
- M A pattern resembling motor oil was detected in this sample.
- C A pattern resembling crude oil was detected in this sample.
- 4 A pattern resembling JP-4 was detected in this sample.
- 5 A pattern resembling JP-5 was detected in this sample.
- H Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.
- L Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.
- Z This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
- gasoline - JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

Client: ALS Environmental

Work Order: 1302029 **Project:** 1302400

Date: 3/4/2013 1:58:1

QC BATCH REPORT

Batch ID:	GS130205-2-1	Instrument ID	GAMMA		Method:	Gamma S	pectrosc	opy Results				
DUP	Sample ID: 1302029-1					Units: pCi/	g	Analys	is Date: 2/	27/2013 ⁻	14:27	
Client ID:	1302400-13A (MW-114 (1))	Ri	un ID: GS130 2	205-2A				Prep Date: 2/6/	2013	DF: N	A	
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qual	
Ra-226		1.84 (+/- 0.41)	0.55					1.83	0.00854	2.13	G	
Ra-228		1.37 (+/- 0.58)	1.04					0.92	0.499	2.13	M3,G,T	
LCS	Sample ID: GS130205 -2	2A				Units: pCi/	'g	Analys	is Date: 2	/28/2013 ⁻	15:34	
Client ID:		Ri	un ID: GS130 2	205-2A		•	-	Prep Date: 2/6/			DF: NA	
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qual	
Ra-226		469 (+/- 55)	3	469.4		100	85-115				P,M3	
LCS	Sample ID: GS130205-	2				Units: pCi/	g	Analysis Date: 2/28/2013 15:32			15:32	
Client ID:		Ri	un ID: GS130 2	205-2A				Prep Date: 2/6/	2013	DF: N	Α	
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qual	
Am-241		479 (+/- 58)	14	475.4		101	85-115				Р	
Co-60		205 (+/- 24)	1	205.2		99.9	85-115				Р	
Cs-137		180 (+/- 21)	1	173.7		103	85-115				Р	
MB	Sample ID: GS130205 -2	2				Units: pCi/	g	Analys	is Date: 2/	/28/2013 ⁻	15:32	
Client ID:		Rı	un ID: GS130 2	205-2A				Prep Date: 2/6/	2013	DF: N	A	
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qual	
Ra-226		ND	0.35								U	
Ra-228		ND	0.47								U	
The follo	owing samples were analyz	ed in this bat	1:	302029-1 302029-4 302029-7	130)2029-2)2029-5)2029-8		802029-3 802029-6				

TECHNICAL BULLETIN ADDENDUM

The library used for analysis defines the gamma emission(s) to be used for analysis of each nuclide. If multiple gamma emissions are used for quantification, then a 'NET' quantification emission (or peak) must be defined in the library. This designation provides for the calculation of nuclide activity concentrations and detection limits in the case of non-presence of the nuclide. When the nuclide is not present, or the software is unable to resolve a peak at the library defined 'NET' energy, the software evaluates the 'NET' region of interest ('NET' peak energy +/- 2 keV) by performing a summation of the net counts above the background level. This 'NET' quantification can result in net negative, zero, or positive activity results, and is highly dependent on the spectral distribution in the region of interest of the 'NET' peak. In cases where only the 'NET' peak is found, and the software performs a net quantification, the nuclide result will be flagged with an 'NQ' qualifier on the final reports. This indicates that the nuclide is not detected or supported at any level above the reported MDC. Results are submitted without further qualification.

All nuclides specified in the library of analysis for gamma spectroscopy are evaluated for positive <u>OR</u> tentative identification on the following criteria:

- The individual abundances for the gamma emissions specified for each nuclide are summed to obtain a total nuclide abundance.
- From the total nuclide abundance, a positive identification criterion is set as 75% of this total nuclide abundance.
- For all nuclide peaks that are not net quantified, those peak abundances are summed. The total non-net quantified peak sum is compared to the calculated 75% abundance criterion. If this sum is greater than the 75% criterion, the nuclide is considered to be positively identified at the reported concentration. If the sum is less than the 75% criterion, the nuclide is tentatively identified at the reported concentration. These results will be flagged with a 'TI' qualifier on the final reports to indicate that the 75% abundance criterion was not met.



March 4, 2013

Ms. Sonia West ALS Environmental 10450 Stancliff Rd, Suite 210 Houston, TX 77099

Re: ALS Workorder:

13-02-030

Project Name:

None Submitted

Project Number:

1302400

Dear Ms. West:

Six soil samples were received from ALS Environmental on February 02, 2013. The samples were scheduled for the following analysis:

Gamma Spectroscopy

The results for this analysis are contained in the enclosed report.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental

Jeff Kujawa Project Manager

JRK/mlc

Enclosure (s): Report

ALS is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

	License or Certification
Accreditation Body	Number
Alaska (AK)	UST-086
_Alaska (AK)	CO00078
Arizona (AZ)*	AZ0742
California (CA)	06251CA
Colorado (CO)	CO00078
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO00078
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Maryland (MD)	285
Missouri	175
Nevada (NV)	CO000782008A
New Jersey (NJ)**	CO003
North Dakota (ND)	R-057
Oklahoma	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241-09-1
Utah (UT)	CO00078
Washington	C1280



1302030

Gamma Spectroscopy:

The samples were analyzed for the presence of gamma emitting radionuclides according to the current revision of SOP 713.

These samples were prepared according to the current revision of SOP 739. The samples were sealed in steel cans and stored for at least 21 days prior to analysis.

All acceptance criteria were met.

Sample Number(s) Cross-Reference Table

OrderNum: 1302030

Client Name: ALS Environmental

Client Project Name:

Client Project Number: 1302400 Client PO Number: 10-1302400

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
1302400-07A (MW-116 (1))	1302030-1		SOIL	29-Jan-13	16:05
1302400-08A (MW-116 (5))	1302030-2		SOIL	29-Jan-13	16:32
1302400-09A (MW-116 (10))	1302030-3		SOIL	30-Jan-13	9:02
1302400-10A (MW-116 (15))	1302030-4		SOIL	30-Jan-13	9:10
1302400-11A (MW-116 (20))	1302030-5		SOIL	30-Jan-13	9:20
1302400-12A (MW-116 (25))	1302030-6		SOIL	30-Jan-13	9:35



□ Comments:



Subcontractor:
ALS Environmental

225 Commerce Drive

Fort Collins, CO 80524

TEL: FAX:

Acct #:

(800) 443-1511

(970) 490-1522

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Date:

01-Feb-13

COC ID: 13238

Due Date 06-Feb-13

Salesperson Mala H. Belmonte Customer Information Project Information Parameter/Method Request for Analysis Purchase Order 10-13011005 Project Name 13011005 A Radium 226 228 Sub to ALS Ft. Collins Work Order Project Number В Company Name ALS Group USA, Corp. Bill To Company ALS Group USA, Corp. C Send Report To Sonia West Inv Attn Accounts Payable D Address 10450 Stancliff Rd, Suite 210 Address 10450 Stancliff Rd, Suite 210 E F. City/State/Zip Houston, Texas 77099-4338 City/State/Zip Houston, Texas 77099-4338 .G Phone (281) 530-5656 Phone (281) 530-5656 н Fax (281) 530-5887 Fax (281) 530-5887 . 1 eMail Address Sonia.West@alsglobal.com eMail CC jumoke.lawal@alsglobal.com Sample ID Matrix Collection Date 24hr Bottle A - В∹ С D E G 13011005-01E (MW-116 (1)) Soil 29/Jan/2013 16:05 (1) 40ZGNEAT Х 13011005-03E (MW-116 (5)) Soil 29/Jan/2013 16:32 (1) 4OZGNEAT Х 13011005-06E (MW-116 (10)) (3) Soil 30/Jan/2013 9:02 (1) 40ZGNEAT Х 13011005-09E (MW-116 (15)) 30/Jan/2013 9:10 Soil (1) 4OZGNEAT Х 13011005-12E (MW-116 (20)) Soil 30/Jan/2013 9:20 (1) 4OZGNEAT X 13011005-15E (MW-116 (25)) Soil 30/Jan/2013 9:35 (1) 4OZGNEAT Х

<u>WO 13</u>	011005 - Please analyze for	Radium 226/228				
1 1		•				,
MA	1/1/2/13	Frak:				
Relinquished by:	Date/Time	Received by:	Date/Time	Cooler IDs	Report	/QC Level
Relinquished by:	Date/Time	Received by:) 2/2/13 0930 Date/Time		Std	
			Date Time			



ALS Environmental - Fort Collins CONDITION OF SAMPLE UPON RECEIPT FORM

Client: ALS TX Workorder No: 13 (203	O	
Project Manager: JRK Initials: LAS	Date:	2/2/1	3
Does this project require any special handling in addition to standard ALS procedures?		YES	(NO)
2. Are custody seals on shipping containers intact?	NONE	YES	NO
3. Are Custody seals on sample containers intact?	NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		YES	NO
5. Are the COC and bottle labels complete and legible?		YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		YES	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	(YES)	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	(N/A)	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	(N/A)	YES	NO
10. Is there sufficient sample for the requested analyses?		(YES)	NO
Were all samples placed in the proper containers for the requested analyses?		/YES	NO
12. Are all samples within holding times for the requested analyses?		(YES)	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		(YES)	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: < green pea > green pea	N/A	YES	NO
15. Do any water samples contain sediment? Amount of sediment: dusting moderate heavy	N/A)	YES	NO
16. Were the samples shipped on ice?		YES	(NO)
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 #4	RAD	YES	(NO)
Cooler #:		<u>_</u>	
Temperature (°C): ATMB			
No. of custody seals on cooler: 2			
DOT Surveys			
Information			
Background μR/hr reading:			
Were external μR/hr readings ≤ two times background and within DOT acceptance criteria? YES NO / NA (If no, see			
Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EX	CEPT #1 AI	ND #16.	
#lu-Limited Volume			
If applicable, was the client contacted? XES/ NO/ NA Contact:	_ Date/Tir	ne: 2-2	-13
Project Manager Signature / Date: 2.2.13	-		
*IR Gun #2: Oakton, SN 29922500201-0066 Form 201r24.xls (06/04/2012) *IR Gun #4: Oakton, SN 2372220101-0002			1

127.713 (00/04/2012)

Page 1 of



ALS Environmental - Fort Collins CONDITION OF SAMPLE UPON RECEIPT FORM

Client: HLS -) X Workorder No: 130	2030)	
Project Manager: JK Initials: CDT	Date:	J-2-	<u>.</u> 3
Does this project require any special handling in addition to standard ALS procedures?		YES	(NO)
2 Are custody seals on shipping containers intact?	NONE	(YES)	NO
3. Are Custody seals on sample containers intact?	NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?		YES	(NO)
s. Are the COC and bottle labels complete and legible?		YES	NO
6 Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		YES	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	(YES)	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	N/A	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	(N/A)	YES	NO
10. Is there sufficient sample for the requested analyses?		(YES)	NO
11. Were all samples placed in the proper containers for the requested analyses?		(YES)	NO
12. Are all samples within holding times for the requested analyses?		(YES)	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		(YES)	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: < green pea > green pea	(N/A)	YES	NO
Amount of sediment: dusting moderateheavy	N/A	YES	NO
16. Were the samples shipped on ice?	<u>' </u>	(YES)	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 (#4)	RAD ONLY	YES	NO
Cooler #:			
Temperature (°C): 2.0			
No. of custody seals on cooler:			
Acceptance External µR/hr reading:	 •		
Background μR/hr reading:			
Were external μR/hr readings ≤ two times background and within DOT acceptance criteria? (YES)/ NO / NA (If no, see	Form 008.)		
Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED IN THE SECOND RESPONSE TO ANY QUESTION ABOVE, EXECUTED ABOVE, EXECUTED ABOVE, EXECUTED ABOVE, EXECUTED ABOVE, EXECUTED ABOVE, EXECUTED ABOVE, EXECUTED ABOVE, EXECUTED ABOVE, EXECUTED ABOVE,	CEPT#I ANI) #16 .	·············
applicable, was the client contacted? YES / NO / NO Contact:	Date/Time:	:	
roject Manager Signature / Date: 1R Gun #2: Oakton, SN 29922500201-0066	-		

Form 201r24.xls (06/04/2012)

*IR Gun #4: Oakton, SN 2372220101-0002



)

ORIGIN ID: SGRA (281) 530-5656 SHIPPING DEPT ALS LABORATORY GROUP 10450 STANCLIFF SUITE 210 HOUSTON, TX 77099 UNITED STATES US

SHIP DATE: 04FEB13 ACTWGT: 49.1 LB CAD: 300130/CAFE2606

BILL SENDER

TO ROY FRENCH **ALS ENVIRONMENTAL** 225 COMMERCE DRIVE

FORT COLLINS CO 80524 (970) 490-1511

Г

REF: SUB SAMPLES



FedEx Express

80524 co-us DEN

Part # 156148-434 RIT2 04/12 🏜

64 of 93

Legal Location:

SAMPLE SUMMARY REPORT

Matrix: SOIL

Client: ALS Environmental Date: 04-Mar-13

 Project:
 1302400
 Work Order:
 1302030

 Sample ID:
 1302400-07A (MW-116 (1))
 Lab ID:
 1302030-1

Collection Date: 1/29/2013 16:05 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GAMMA SPECTROSCOPY RESULTS			PAI 713		Prep Date: 2/6/2013	PrepBy: SAM
Ra-226	1.87 (+/- 0.39)	G	0.53	pCi/g	NA	2/27/2013 14:27
Ra-228	1.2 (+/- 0.51)	G,TI	0.64	pCi/g	NA	2/27/2013 14:27

Legal Location:

SAMPLE SUMMARY REPORT

Matrix: SOIL

Client: ALS Environmental Date: 04-Mar-13

 Project:
 1302400
 Work Order:
 1302030

 Sample ID:
 1302400-08A (MW-116 (5))
 Lab ID:
 1302030-2

Collection Date: 1/29/2013 16:32 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GAMMA SPECTROSCOPY RESULTS			PAI 713		Prep Date: 2/6/2013	PrepBy: SAM
Ra-226	0.86 (+/- 0.27)	LT,G	0.51	pCi/g	NA	2/27/2013 14:49
Ra-228	ND (+/- 0.44)	U,G	0.8	B pCi/g	NA	2/27/2013 14:49

SAMPLE SUMMARY REPORT

Date: 04-Mar-13 **Client:** ALS Environmental

Project: Work Order: 1302030 1302400 **Lab ID:** 1302030-3 Sample ID: 1302400-09A (MW-116 (10))

Legal Location: Matrix: SOIL

Collection Date: 1/30/2013 09:02 **Percent Moisture:**

Analyses	Result	Qual	Report Dilution ual Limit Units Factor		Date Analyzed	
GAMMA SPECTROSCOPY RESULTS			PAI 713		Prep Date: 2/6/2013	PrepBy: SAM
Ra-226	1.75 (+/- 0.41)	G	0.61	pCi/g	NA	2/28/2013 13:52
Ra-228	1.4 (+/- 0.6)	M3,G	1.05	pCi/g	NA	2/28/2013 13:52

Legal Location:

SAMPLE SUMMARY REPORT

Matrix: SOIL

Client: ALS Environmental Date: 04-Mar-13

 Project:
 1302400
 Work Order:
 1302030

 Sample ID:
 1302400-10A (MW-116 (15))
 Lab ID:
 1302030-4

Collection Date: 1/30/2013 09:10 **Percent Moisture:**

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GAMMA SPECTROSCOPY RESULTS			PAI 713		Prep Date: 2/6/2013	PrepBy: SAM
Ra-226	0.66 (+/- 0.22)	LT,G	0.46	pCi/g	NA	2/28/2013 13:52
Ra-228	ND (+/- 0.44)	UG	0.75	nCi/a	NΔ	2/28/2013 13:52

Legal Location:

SAMPLE SUMMARY REPORT

Matrix: SOIL

Client: ALS Environmental Date: 04-Mar-13

 Project:
 1302400
 Work Order:
 1302030

 Sample ID:
 1302400-11A (MW-116 (20))
 Lab ID:
 1302030-5

Collection Date: 1/30/2013 09:20 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GAMMA SPECTROSCOPY RESULTS			PAI 713		Prep Date: 2/6/2013	PrepBy: SAM
Ra-226	0.94 (+/- 0.29)	LT,G	0.5	pCi/g	NA	2/28/2013 13:52
Ra-228	1.06 (+/- 0.56)	G,TI	0.6	pCi/a	NA	2/28/2013 13:52

Legal Location:

SAMPLE SUMMARY REPORT

Matrix: SOIL

Client: ALS Environmental Date: 04-Mar-13

 Project:
 1302400
 Work Order:
 1302030

 Sample ID:
 1302400-12A (MW-116 (25))
 Lab ID:
 1302030-6

Collection Date: 1/30/2013 09:35 **Percent Moisture:**

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GAMMA SPECTROSCOPY RESULTS			PAI 713		Prep Date: 2/6/2013	PrepBy: SAM
Ra-226	0.78 (+/- 0.23)	LT,G	0.37	7 pCi/g	NA	2/28/2013 13:52
Ra-228	ND (+/- 0.4)	U,G	0.85	pCi/g	NA	2/28/2013 13:52

SAMPLE SUMMARY REPORT

Client: ALS Environmental Date: 04-Mar-13

Project: 1302400 **Work Order:** 1302030

Sample ID: 1302400-12A (MW-116 (25)) Lab ID: 1302030-6

Legal Location: Matrix: SOIL

Collection Date: 1/30/2013 09:35 Percent Moisture:

Report Dilution

Analyses Result Qual Limit Units Factor Date Analyzed

Explanation of Qualifiers

Radiochemistry:

U or ND - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

G - Sample density differs by more than 15% of LCS density.

D - DER is greater than Control Limit

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested

MDC.

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).

U or ND - Indicates that the compound was analyzed for but not detected.

E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.

M - Duplicate injection precision was not met.

N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.

Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.

* - Duplicate analysis (relative percent difference) not within control limits.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.

- B Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.
- E Analyte concentration exceeds the upper level of the calibration range.
- J Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).
- A A tentatively identified compound is a suspected aldol-condensation product.
- X The analyte was diluted below an accurate quantitation level.
- * The spike recovery is equal to or outside the control criteria used.
- + The relative percent difference (RPD) equals or exceeds the control criteria.

Diesel Range Organics:

ALS Environmental -- FC
LIMS Version: 6.631

SAMPLE SUMMARY REPORT

Client: ALS Environmental Date: 04-Mar-13

Project: 1302400 **Work Order:** 1302030

Sample ID: 1302400-12A (MW-116 (25)) **Lab ID:** 1302030-6

Legal Location: Matrix: SOIL

Collection Date: 1/30/2013 09:35 Percent Moisture:

Report Dilution
Analyses Result Qual Limit Units Factor Date Analyzed

- G A pattern resembling gasoline was detected in this sample.
- D A pattern resembling diesel was detected in this sample.
- M A pattern resembling motor oil was detected in this sample.
- C A pattern resembling crude oil was detected in this sample.
- 4 A pattern resembling JP-4 was detected in this sample.
- 5 A pattern resembling JP-5 was detected in this sample.
- H Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.
- L Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.
- Z This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products:
- gasoline - JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

ALS Environmental -- FC
LIMS Version: 6.631

Client: ALS Environmental

Work Order: 1302030 **Project:** 1302400

Date: 3/4/2013 1:59:4

QC BATCH REPORT

Batch ID: 6	GS130205-2-1	Instrument ID:	GAMMA		Method:	Gamma S	pectroso	opy Results			
LCS	Sample ID: GS130205	i-2A				Units: pCi/	'g	Analys	is Date:	2/28/2013	15:34
Client ID:		Ru	ın ID: GS130 2	205-2A				Prep Date: 2/6/	2013	DF: N	A
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qual
Ra-226		469 (+/- 55)	3	469.4		100	85-115				P,M3
LCS	Sample ID: GS130205	i-2				Units: pCi/	g	Analys	is Date:	2/28/2013 ·	15:32
Client ID:		Ru	ın ID: GS130 2	205-2A				Prep Date: 2/6/	2013	DF: N	A
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qual
Am-241		479 (+/- 58)	14	475.4		101	85-115				Р
Co-60		205 (+/- 24)	1	205.2		99.9	85-115				Р
Cs-137		180 (+/- 21)	1	173.7		103	85-115				Р
МВ	Sample ID: GS130205	i-2				Units: pCi/	'g	Analys	is Date:	2/28/2013	15:32
Client ID:		Ru	ın ID: GS130 2	205-2A				Prep Date: 2/6/	2013	DF: N .	A
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qual
Ra-226		ND	0.35								U
Ra-228		ND	0.47								U
The follow	wing samples were analy	zed in this bate		302030-1 302030-4)2030-2)2030-5		302030-3 302030-6			

QC Page: 1 of 1

TECHNICAL BULLETIN ADDENDUM

The library used for analysis defines the gamma emission(s) to be used for analysis of each nuclide. If multiple gamma emissions are used for quantification, then a 'NET' quantification emission (or peak) must be defined in the library. This designation provides for the calculation of nuclide activity concentrations and detection limits in the case of non-presence of the nuclide. When the nuclide is not present, or the software is unable to resolve a peak at the library defined 'NET' energy, the software evaluates the 'NET' region of interest ('NET' peak energy +/- 2 keV) by performing a summation of the net counts above the background level. This 'NET' quantification can result in net negative, zero, or positive activity results, and is highly dependent on the spectral distribution in the region of interest of the 'NET' peak. In cases where only the 'NET' peak is found, and the software performs a net quantification, the nuclide result will be flagged with an 'NQ' qualifier on the final reports. This indicates that the nuclide is not detected or supported at any level above the reported MDC. Results are submitted without further qualification.

All nuclides specified in the library of analysis for gamma spectroscopy are evaluated for positive <u>OR</u> tentative identification on the following criteria:

- The individual abundances for the gamma emissions specified for each nuclide are summed to obtain a total nuclide abundance.
- From the total nuclide abundance, a positive identification criterion is set as 75% of this total nuclide abundance.
- For all nuclide peaks that are not net quantified, those peak abundances are summed. The total non-net quantified peak sum is compared to the calculated 75% abundance criterion. If this sum is greater than the 75% criterion, the nuclide is considered to be positively identified at the reported concentration. If the sum is less than the 75% criterion, the nuclide is tentatively identified at the reported concentration. These results will be flagged with a 'TI' qualifier on the final reports to indicate that the 75% abundance criterion was not met.



March 4, 2013

Ms. Sonia West ALS Environmental 10450 Stancliff Rd, Suite 210 Houston, TX 77099

Re: ALS Workorder: 13-02-031

Project Name: None Submitted

Project Number: 1302400

Dear Ms. West:

Six soil samples were received from ALS Environmental on February 02, 2013. The samples were scheduled for the following analysis:

Gamma Spectroscopy pages 1-17

The results for this analysis are contained in the enclosed report.

Thank you for your confidence in ALS Environmental. Should you have any questions, please call.

Sincerely,

ALS Environmental Jeff Kujawa Project Manager

JRK/mlc

Enclosure (s): Report

Environmental .

ALS is accredited by the following accreditation bodies for various testing scopes in accordance with requirements of each accreditation body. All testing is performed under the laboratory management system, which is maintained to meet these requirement and regulations. Please contact the laboratory or accreditation body for the current scope testing parameters.

Gaeraga saba sabaga Maraba da Maraba da Propinsi da Maraba da Maraba da Maraba da Maraba da Maraba da Maraba d	License or Certification
Accreditation Body	Number
Alaska (AK)	UST-086
Alaska (AK)	CO00078
Arizona (AZ)*	AZ0742
California (CA)	06251CA
Colorado (CO)	CO00078
Connecticut (CT)	PH-0232
Florida (FL)	E87914
Idaho (ID)	CO00078
Kansas (KS)	E-10381
Kentucky (KY)	90137
L-A-B (DoD ELAP/ISO 170250)	L2257
Maryland (MD)	285
Missouri	175
Nevada (NV)	CO000782008A
New Jersey (NJ)**	CO003
North Dakota (ND)	R-057
Oklahoma	1301
Pennsylvania (PA)	68-03116
Tennessee (TN)	2976
Texas (TX)	T104704241-09-1
Utah (UT)	CO00078
Washington	C1280



1302031

Gamma Spectroscopy:

The samples were analyzed for the presence of gamma emitting radionuclides according to the current revision of SOP 713.

These samples were prepared according to the current revision of SOP 739. The samples were sealed in steel cans and stored for at least 21 days prior to analysis.

All acceptance criteria were met.

Sample Number(s) Cross-Reference Table

OrderNum: 1302031

Client Name: ALS Environmental

Client Project Name:

Client Project Number: 1302400 Client PO Number: 10-1302400

Client Sample Number	Lab Sample Number	COC Number	Matrix	Date Collected	Time Collected
1302400-01A (MW-115 (1))	1302031-1		SOIL	29-Jan-13	14:25
1302400-02A (MW-115 (5))	1302031-2		SOIL	29-Jan-13	14:35
1302400-03A (MW-115 (10))	1302031-3		SOIL	29-Jan-13	16:10
1302400-04A (MW-115 (15))	1302031-4		SOIL	29-Jan-13	15:20
1302400-05A (MW-115 (20))	1302031-5		SOIL	29-Jan-13	16:00
1302400-06A (MW-115 (25))	1302031-6		SOIL	29-Jan-13	15:45



Subcontractor: ALS Environmental

225 Commerce Drive

Fort Collins, CO 80524

TEL: FAX:

Acct#:

(800) 443-1511

(970) 490-1522

CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Date: 01-Feb-13

COC ID: <u>13237</u>

Due Date 06-Feb-13

1302021

	Salesperson	Mala H. Be	lmonte									ι	JU0	(05	1
CL	stomer Information		Pro	oject Inforn	nation	7 776		Pa	rameter/	Method	Reques	t for An	alysis	a salaha	· · · · · · · · · · · · · · · · · · · ·
Purchase Order	10-1301997	Projec	l Name	1301997		A	Radium 22	6 228 5	ub to Al	S Ft. C	ollins		1,50.0		
Work Order		Projec	t Number			В									
Company Name	ALS Group USA, Corp.	Bill To	Company	ALS Group	USA, Corp.	c									
Send Report To	Sonia West	Inv Att	n	Accounts		D					 				
Address	10450 Stancliff Rd, Suite 210	Addres	SS	10450 Star	cliff Rd, Suite 210	E							-		
						TF							<u>'</u>		
City/State/Zip	Houston, Texas 77099-4338	City/St	ate/Zip	Houston, T	exas 77099-4338	G	•				•				
Phone	(281) 530-5656	Phone		(281) 530-		H		· · · · · · · · · · · · · · · · · · ·							
Fax	(281) 530-5887	Fax		(281) 530-	5887	1-							-		
eMail Address	Sonia.West@alsglobal.com	eMail C	C	jumoke.lav	val@alsglobal.com	J							! 	·····	
Sample ID		Matrix	Collection			Α	В	C	D.	E.	Jacobi, pi	- G	<u> </u> Н		ية أل دوا
1301997-01E (MW		Soil	29/Jan/20	13 14:25	(1) 4OZGNEAT	X	2				et , 158 (2)	6,		11.1	DEMINE
1301997-03E (MW		Soil	29/Jan/20	13 14:35	(1) 4OZGNEAT	X		1			 	 	 		
1301997-06E (MW		Soil	29/Jan/20	13 16:10	(1) 4OZGNEAT	$\frac{1}{X}$				l —	 		-		-
1301997-09E (MW		Soil	29/Jan/20	13 15:20	(1) 4OZGNEAT	X		<u> </u>			-	 	 		\vdash
1301997-12E (MW		Soil	29/Jan/20	13 16:00	(1) 4OZGNEAT	X		†·	 				+	 	r
1301997-15E (MW	-115 (25))	Soil	29/Jan/20	13 15:45	(1) 4OZGNEAT	X		1				_	 	-	<u> </u>

Comments: WO 1301997	- Please analyze for Radi	<u>um 226/228</u>				
phill	1.18313	- Choko				
Restaurished by:	Date/Time	Received by:	Date/Time 2/2/13 C930	Cooler IDs	Report/C	C Level
Relinquished by:	Date/Time	Received by:	Date/Time			

79 of 93



ALS Environmental - Fort Collins CONDITION OF SAMPLE UPON RECEIPT FORM

Client: HLS TX Workorder No: 31)203	> /	
Project Manager: Initials: LAS	Date:	221	<u>-</u> 3
 Does this project require any special handling in addition to standard ALS procedures? 		YES	(NO
2. Are custody seals on shipping containers intact?	NONE	(YES)	NO
3. Are Custody seals on sample containers intact?	NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative documents?	4	YES	NO
5. Are the COC and bottle labels complete and legible?		YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of samples, no. of containers, matrix, requested analyses, etc.)		YES	NO
7. Were airbills / shipping documents present and/or removable?	DROP OFF	(YES)	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volatiles)	(N/A)	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?	(N/A)	YES	NO
10. Is there sufficient sample for the requested analyses?		(YES)	NO
II. Were all samples placed in the proper containers for the requested analyses?		TES	NO
12. Are all samples within holding times for the requested analyses?		(YES)	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)		(YES)	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, radon) headspace free? Size of bubble: < green pea > green pea	N/A	YES	NO
15. Do any water samples contain sediment? Amount		··	
Amount of sediment: dusting moderateheavy	(N/A)	YES	NO
16. Were the samples shipped on ice?		YES	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2 #4	(RAD)	YES	(NO)
Cooler #:	SINCE !		
Temperature (°C): ATMB			
No. of custody seals on cooler: 2			
DOT Survey/ Acceptance External μR/hr reading: 12	 .		
Background μR/hr reading:	 -	·	
Were external μR/hr readings ≤ two times background and within DOT acceptance criteria? YES NO / NA (If no, see I	iam 008)		
Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUESTION ABOVE, EXC		2.416	
A STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STATE OF THE STA	ECI#I ANI	J#10.	
			
# W- Limited Volume			
		-	
If applicable, was the client contacted? YES/NO/NA Contact: S. Wes!	Date/Time	2-2.6	3
Project Manager Signature / Date: 11/1/1/2 2. J. U			
Form 201r24.xls (06/04/2012) *IR Gun #4: Oakton, SN 29922500201-0066 *IR Gun #4: Oakton, SN 2372220101-0002		Page 1 of	



ALS Environmental - Fort Collins CONDITION OF SAMPLE UPON RECEIPT FORM

Client: HUS - 1 X Workorder N	10: <u>130</u> ,	703	1	
Project Manager: JK Initia	ls: CDT	_ Date:	2-5-	<u>1</u> 3
1. Does this project require any special handling in addition to standard ALS procedure	s?		YES	(NO)
2. Are custody seals on shipping containers intact?		NONE	(YES)	NO
3. Are Custody seals on sample containers intact?		NONE	YES	NO
4. Is there a COC (Chain-of-Custody) present or other representative document	s?		YES	NO
5. Are the COC and bottle labels complete and legible?			YES	NO
6. Is the COC in agreement with samples received? (IDs, dates, times, no. of sam containers, matrix, requested analyses, etc.)	ples, no. of		YES	NO
7. Were airbills / shipping documents present and/or removable?		DROP OFF	(YES)	NO
8. Are all aqueous samples requiring preservation preserved correctly? (excluding volat	iles)	(N/A)	YES	NO
9. Are all aqueous non-preserved samples pH 4-9?		(N/A)	YES	NO
10. Is there sufficient sample for the requested analyses?			(YES)	NO
11. Were all samples placed in the proper containers for the requested analyses?			(YES)	NO
12. Are all samples within holding times for the requested analyses?	· · ·		(YES)	NO
13. Were all sample containers received intact? (not broken or leaking, etc.)			(YES)	NO
14. Are all samples requiring no headspace (VOC, GRO, RSK/MEE, Rx CN/S, r headspace free? Size of bubble: < green pea > green pea	radon)	(N/A)	YES	NO
15. Do any water samples contain sediment? Amount of sediment: dusting moderate heavy	Amount	(N/A)	YES	NO
16. Were the samples shipped on ice?	****		(YES)	NO
17. Were cooler temperatures measured at 0.1-6.0°C? IR gun used*: #2	(#4)	RAD ONLY	YES	NO
Cooler #:				
Temperature (°C): 2.0	_			
No. of custody seals on cooler:				
DOT Survey/ Acceptance External uR/hr reading: 12				
Background μR/hr reading:				
Were external μR/hr readings ≤ two times background and within DOT acceptance criteria? YES/ NO	/NA (If no see	Form 008)		
Additional Information: PROVIDE DETAILS BELOW FOR A NO RESPONSE TO ANY QUEST			VD #16	
Extra volume that was requested			10.	
	····· p			
	17			
If applicable was the client contrated? VES / NO /ATA Contrate			· .	
If applicable, was the client contacted? YES / NO / O Contact:	······	_ Date/Tin	ne:	
Project Manager Signature / Date:	>	-		
IR Gun #2: Oakton, SN 29922500201-0066				
Form 201r24.xls (06/04/2012) *IR Gun #4: Oakton, SN 2372220101-0002			Page 1 o	of

ORIGIN ID: SGRA (201) 530-5656 SHIPPING DEPT ALS LABORATORY GROUP 10450 STANCLIFF SUITE 210 HOUSTON, TX 77099 UNITED STATES US

SHIP DATE: 01FEB13 ACTUST: 21.0 LB CAD: 300130/CAFE2606

BILL SENDER

TO ROY FRENCH **ALS ENVIRONMENTAL**

225 COMMERCE DRIVE



(970) 490 - 1511 DEPT: ENVIRONMENTAL



FedEx Express

TRK# 4340 2174 0732

SATURDAY ### A2 PRIORITY OVERNIGHT

80524 co-us DEN



Part # 156148-434 RIT2 04/12 🚓

)

ORIGIN ID: SGRA (201) 530-5656 SHIPPING DEPT ALS LABORATORY GROUP 10450 STANCLIFF SUITE 210 HOUSTON, TX 77099 UNITED STATES US

SHIP DATE: 04FEB13 ACTWGT: 49.1 LB CAD: 300130/CAFE2606

BILL SENDER

TO ROY FRENCH **ALS ENVIRONMENTAL** 225 COMMERCE DRIVE

FORT COLLINS CO 80524

REF: SUB SAMPLES

FedEx Express

TUE - 05 FEB A2

Part # 156148-434 RIT2 04/12 👬

80524

co-us DEN

83 of 93

Legal Location:

SAMPLE SUMMARY REPORT

Matrix: SOIL

Client: ALS Environmental Date: 04-Mar-13

 Project:
 1302400
 Work Order:
 1302031

 Sample ID:
 1302400-01A (MW-115 (1))
 Lab ID:
 1302031-1

Collection Date: 1/29/2013 14:25 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GAMMA SPECTROSCOPY RESULTS			PAI 713		Prep Date: 2/6/2013	PrepBy: SAM
Ra-226	1.62 (+/- 0.38)	G	0.6	pCi/g	NA	2/28/2013 14:48
Ra-228	1.25 (+/- 0.67)	G,TI	0.83	pCi/a	NA	2/28/2013 14:48

SAMPLE SUMMARY REPORT

Client: ALS Environmental Date: 04-Mar-13

 Project:
 1302400
 Work Order:
 1302031

 Sample ID:
 1302400-02A (MW-115 (5))
 Lab ID:
 1302031-2

Legal Location: Matrix: SOIL

Collection Date: 1/29/2013 14:35 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GAMMA SPECTROSCOPY RESULTS			PAI 713		Prep Date: 2/6/2013	PrepBy: SAM
Ra-226	1.29 (+/- 0.28)	G	0.41	pCi/g	NA	2/28/2013 14:48
Ra-228	0.78 (+/- 0.5)	LT,G,TI	0.7	pCi/g	NA	2/28/2013 14:48

SAMPLE SUMMARY REPORT

Client: ALS Environmental Date: 04-Mar-13

 Project:
 1302400
 Work Order:
 1302031

 Sample ID:
 1302400-03A (MW-115 (10))
 Lab ID:
 1302031-3

Legal Location: Matrix: SOIL

Collection Date: 1/29/2013 16:10 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GAMMA SPECTROSCOPY RESULTS			PAI 713		Prep Date: 2/6/2013	PrepBy: SAM
Ra-226	1.39 (+/- 0.37)	G	0.64	pCi/g	NA	2/28/2013 14:49
Ra-228	1.03 (+/- 0.67)	G,NQ	0.91	pCi/g	NA	2/28/2013 14:49

SAMPLE SUMMARY REPORT

Client: ALS Environmental Date: 04-Mar-13

 Project:
 1302400
 Work Order:
 1302031

 Sample ID:
 1302400-04A (MW-115 (15))
 Lab ID:
 1302031-4

Legal Location: Matrix: SOIL

Collection Date: 1/29/2013 15:20 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GAMMA SPECTROSCOPY RESULTS			PAI 713		Prep Date: 2/6/2013	PrepBy: SAM
Ra-226	0.57 (+/- 0.24)	LT,G	0.47	pCi/g	NA	2/28/2013 14:49
Ra-228	ND (+/- 0.46)	U,G	0.63	pCi/g	NA	2/28/2013 14:49

SAMPLE SUMMARY REPORT

Client: ALS Environmental Date: 04-Mar-13

 Project:
 1302400
 Work Order:
 1302031

 Sample ID:
 1302400-05A (MW-115 (20))
 Lab ID:
 1302031-5

Legal Location: Matrix: SOIL

Collection Date: 1/29/2013 16:00 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GAMMA SPECTROSCOPY RESULTS			PAI 713		Prep Date: 2/6/2013	PrepBy: SAM
Ra-226	0.58 (+/- 0.29)	LT,G,TI	0.49	pCi/g	NA	2/28/2013 14:49
Ra-228	ND (+/- 0.57)	U,G	0.81	pCi/g	NA	2/28/2013 14:49

SAMPLE SUMMARY REPORT

Client: ALS Environmental Date: 04-Mar-13

 Project:
 1302400
 Work Order:
 1302031

 Sample ID:
 1302400-06A (MW-115 (25))
 Lab ID:
 1302031-6

Legal Location: Matrix: SOIL

Collection Date: 1/29/2013 15:45 Percent Moisture:

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
GAMMA SPECTROSCOPY RESULTS			PAI 713		Prep Date: 2/6/2013	PrepBy: SAM
Ra-226	ND (+/- 0.23)	U,G	0.51	pCi/g	NA	2/28/2013 14:52
Ra-228	0.75 (+/- 0.51)	NQ	0.68	pCi/g	NA	2/28/2013 14:52

SAMPLE SUMMARY REPORT

Client: ALS Environmental Date: 04-Mar-13

Project: 1302400 **Work Order:** 1302031

Sample ID: 1302400-06A (MW-115 (25)) **Lab ID:** 1302031-6

Legal Location: Matrix: SOIL

Collection Date: 1/29/2013 15:45 Percent Moisture:

Report Dilution
Analyses Result Qual Limit Units Factor Date Analyzed

Explanation of Qualifiers

Radiochemistry:

U or ND - Result is less than the sample specific MDC.

Y1 - Chemical Yield is in control at 100-110%. Quantitative yield is assumed.

Y2 - Chemical Yield outside default limits.

W - DER is greater than Warning Limit of 1.42

* - Aliquot Basis is 'As Received' while the Report Basis is 'Dry Weight'.

- Aliquot Basis is 'Dry Weight' while the Report Basis is 'As Received'.

G - Sample density differs by more than 15% of LCS density.

D - DER is greater than Control Limit

M - Requested MDC not met.

M3 - The requested MDC was not met, but the reported activity is greater than the reported MDC.

L - LCS Recovery below lower control limit.

H - LCS Recovery above upper control limit.

P - LCS, Matrix Spike Recovery within control limits.

N - Matrix Spike Recovery outside control limits

NC - Not Calculated for duplicate results less than 5 times MDC

B - Analyte concentration greater than MDC.

B3 - Analyte concentration greater than MDC but less than Requested

MDC.

Inorganics:

B - Result is less than the requested reporting limit but greater than the instrument method detection limit (MDL).

U or ND - Indicates that the compound was analyzed for but not detected.

E - The reported value is estimated because of the presence of interference. An explanatory note may be included in the narrative.

M - Duplicate injection precision was not met.

N - Spiked sample recovery not within control limits. A post spike is analyzed for all ICP analyses when the matrix spike and or spike duplicate fail and the native sample concentration is less than four times the spike added concentration.

Z - Spiked recovery not within control limits. An explanatory note may be included in the narrative.

* - Duplicate analysis (relative percent difference) not within control limits.

Organics:

U or ND - Indicates that the compound was analyzed for but not detected.

- B Analyte is detected in the associated method blank as well as in the sample. It indicates probable blank contamination and warns the data user.
- E Analyte concentration exceeds the upper level of the calibration range.
- J Estimated value. The result is less than the reporting limit but greater than the instrument method detection limit (MDL).
- A A tentatively identified compound is a suspected aldol-condensation product.
- X The analyte was diluted below an accurate quantitation level.
- * The spike recovery is equal to or outside the control criteria used.
- + The relative percent difference (RPD) equals or exceeds the control criteria.

Diesel Range Organics:

ALS Environmental -- FC
LIMS Version: 6.631

AR Page 7 of 8

SAMPLE SUMMARY REPORT

Date: 04-Mar-13 **Client: ALS** Environmental

Project: 1302400 Work Order: 1302031

Sample ID: 1302400-06A (MW-115 (25)) Lab ID: 1302031-6

Matrix: SOIL **Legal Location:**

Collection Date: 1/29/2013 15:45 **Percent Moisture:**

Report Dilution Result **Date Analyzed** Analyses Qual Limit Units **Factor**

- G A pattern resembling gasoline was detected in this sample.
- D A pattern resembling diesel was detected in this sample.
- M A pattern resembling motor oil was detected in this sample.
- C A pattern resembling crude oil was detected in this sample.
- 4 A pattern resembling JP-4 was detected in this sample.
- 5 A pattern resembling JP-5 was detected in this sample.
- H Indicates that the fuel pattern was in the heavier end of the retention time window for the analyte of interest.
- L Indicates that the fuel pattern was in the lighter end of the retention time window for the analyte of interest.
- Z This flag indicates that a significant fraction of the reported result did not resemble the patterns of any of the following petroleum hydrocarbon products: - gasoline
- JP-8
- diesel
- mineral spirits
- motor oil
- Stoddard solvent
- bunker C

Client: ALS Environmental

Work Order: 1302031 **Project:** 1302400

Date: 3/4/2013 2:01:2

QC BATCH REPORT

Batch ID: 6	GS130205-2-1	Instrument ID:	GAMMA		Method:	Gamma S	pectroso	copy Results			
LCS	Sample ID: GS1302	205-2A				Units: pCi/	g	Analys	is Date:	2/28/2013 <i>1</i>	15:34
Client ID:		Ru	ın ID: GS130 2	205-2A				Prep Date: 2/6/	2013	DF: N .	A
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qual
Ra-226		469 (+/- 55)	3	469.4		100	85-115				P,M3
LCS	Sample ID: GS1302	205-2				Units: pCi/	g	Analys	is Date:	2/28/2013 ⁻	15:32
Client ID:		Ru	ın ID: GS130 2	205-2A				Prep Date: 2/6/	2013	DF: N .	A
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qual
Am-241		479 (+/- 58)	14	475.4		101	85-115				Р
Co-60		205 (+/- 24)	1	205.2		99.9	85-115				Р
Cs-137		180 (+/- 21)	1	173.7		103	85-115				Р
МВ	Sample ID: GS1302	205-2				Units: pCi/	'g	Analys	is Date:	2/28/2013 ⁻	15:32
Client ID:		Ru	ın ID: GS130 2	205-2A				Prep Date: 2/6/	2013	DF: N .	A
Analyte		Result	ReportLimit	SPK Val	SPK Ref Value	%REC	Control Limit	DER Ref Value	DER	DER Limit	Qual
Ra-226		ND	0.35								U
Ra-228		ND	0.47								U
The follow	ving samples were an	alyzed in this bate		302031-1 302031-4		02031-2 02031-5		302031-3 302031-6			

TECHNICAL BULLETIN ADDENDUM

The library used for analysis defines the gamma emission(s) to be used for analysis of each nuclide. If multiple gamma emissions are used for quantification, then a 'NET' quantification emission (or peak) must be defined in the library. This designation provides for the calculation of nuclide activity concentrations and detection limits in the case of non-presence of the nuclide. When the nuclide is not present, or the software is unable to resolve a peak at the library defined 'NET' energy, the software evaluates the 'NET' region of interest ('NET' peak energy +/- 2 keV) by performing a summation of the net counts above the background level. This 'NET' quantification can result in net negative, zero, or positive activity results, and is highly dependent on the spectral distribution in the region of interest of the 'NET' peak. In cases where only the 'NET' peak is found, and the software performs a net quantification, the nuclide result will be flagged with an 'NQ' qualifier on the final reports. This indicates that the nuclide is not detected or supported at any level above the reported MDC. Results are submitted without further qualification.

All nuclides specified in the library of analysis for gamma spectroscopy are evaluated for positive OR tentative identification on the following criteria:

- The individual abundances for the gamma emissions specified for each nuclide are summed to obtain a total nuclide abundance.
- From the total nuclide abundance, a positive identification criterion is set as 75% of this total nuclide abundance.
- For all nuclide peaks that are not net quantified, those peak abundances are summed. The total non-net quantified peak sum is compared to the calculated 75% abundance criterion. If this sum is greater than the 75% criterion, the nuclide is considered to be positively identified at the reported concentration. If the sum is less than the 75% criterion, the nuclide is tentatively identified at the reported concentration. These results will be flagged with a 'TI' qualifier on the final reports to indicate that the 75% abundance criterion was not met.



13-Feb-2013

Robert Combs Navajo Refining Company PO Box 159 Artesia, NM 88211

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

Re: RO Discharge Sampling Work Order: 13011005

Dear Robert,

ALS Environmental received 16 samples on 31-Jan-2013 09:10 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 50.

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

Sincerely,

Electronically approved by: Jumoke M. Lawal

Sonie West

Sonia West Project Manager



Certificate No: T104704231-12-10

ALS Environmental

Date: 13-Feb-13

Client: Navajo Refining Company
Project: RO Discharge Sampling

Work Order: 13011005

Work Order Sample Summary

Lab Samp ID Client Sample ID	<u>Matrix</u>	Tag Number	Collection Date	Date Received	Hold
13011005-01 MW-116 (1)	Soil		1/29/2013 16:05	1/31/2013 09:10	
13011005-02 MW-116 (3)	Soil		1/29/2013 16:18	1/31/2013 09:10	
13011005-03 MW-116 (5)	Soil		1/29/2013 16:32	1/31/2013 09:10	
13011005-04 MW-116 (7)	Soil		1/30/2013 08:55	1/31/2013 09:10	
13011005-05 MW-116 (9)	Soil		1/30/2013 08:55	1/31/2013 09:10	
13011005-06 MW-116 (10)	Soil		1/30/2013 09:02	1/31/2013 09:10	
13011005-07 MW-116 (11)	Soil		1/30/2013 09:05	1/31/2013 09:10	
13011005-08 MW-116 (13)	Soil		1/30/2013 09:05	1/31/2013 09:10	
13011005-09 MW-116 (15)	Soil		1/30/2013 09:10	1/31/2013 09:10	
13011005-10 MW-116 (17)	Soil		1/30/2013 09:15	1/31/2013 09:10	
13011005-11 MW-116 (19)	Soil		1/30/2013 09:15	1/31/2013 09:10	
13011005-12 MW-116 (20)	Soil		1/30/2013 09:20	1/31/2013 09:10	
13011005-13 MW-116 (21)	Soil		1/30/2013 09:30	1/31/2013 09:10	
13011005-14 MW-116 (23)	Soil		1/30/2013 09:30	1/31/2013 09:10	
13011005-15 MW-116 (25)	Soil		1/30/2013 09:35	1/31/2013 09:10	
13011005-16 Trip Blank 011813-15	Water		1/29/2013	1/31/2013 09:10	

ALS Environmental

Date: 13-Feb-13

Client: Navajo Refining Company
Project: RO Discharge Sampling

Work Order: 13011005

Case Narrative

Your samples received for Radium 226 and Radium 228 are reported on ALS workorder 1302400.

Batch 67579, TPH DRO/ORO, Sample 1302018-01: MS/MSD is for an unrelated sample.

Batch 67523, Metals, Sample MW-116 (1): MS/MSD recoveries were outside the control limits for several analytes due to high concentration to the background sample. Results are flagged with an O as applicable. The associated LCS recoveries and MS/MSD RPD were within the control limits.

Batch 67523, Metals, Sample MW-116 (1): Duplicate RPD was outside the control limits for Boron and Sodium.

Batch 67656, Semivolatile Organics, Sample 1302140-04: MS/MSD is for an unrelated sample.

Batch 67656, Semivolatile Organics, Sample 1302140-04: MS/MSD RPD is for an unrelated sample.

Batch R141995, Volatile Organics, Sample 1301997-01: MS/MSD is for an unrelated sample.

Batch R142113, Volatile Organics, Sample 1302069-01: MS/MSD is for an unrelated sample.

Client: Navajo Refining Company

Project: RO Discharge Sampling MW-116 (1)

Sample ID: Collection Date: 1/29/2013 04:05 PM Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Meth	od: SW8015M		Prep: SW	3541 / 2/5/13	Analyst: KMB
TPH (Oil Range)	4.7		0.50	3.4	mg/Kg	1	2/6/2013 17:15
TPH (Diesel Range)	0.53	J	0.50	1.7	mg/Kg	1	2/6/2013 17:15
Surr: 2-Fluorobiphenyl	60.4			60-135	%REC	1	2/6/2013 17:15
GASOLINE RANGE ORGANICS - SW80150	;	Meth	od: SW8015				Analyst: KKP
Gasoline Range Organics	U		0.020	0.050	mg/Kg	1	2/5/2013 18:23
Surr: 4-Bromofluorobenzene	89.6			70-130	%REC	1	2/5/2013 18:23
MERCURY - SW7471B		Meth	od: SW7471A		Prep: SW	7471A / 2/5/13	Analyst: OFO
Mercury	8.10		0.28	3.48	μg/Kg	1	2/5/2013 16:47
METALS		Meth	od: SW6020		Prep: SW	3050A / 2/4/13	Analyst: SKS
Aluminum	14,600		17	82.6	mg/Kg	100	2/6/2013 14:59
Arsenic	4.38		0.083	0.413	mg/Kg	1	2/5/2013 15:17
Barium	130		0.066	0.413	mg/Kg	1	2/5/2013 15:17
Boron	7.77		2.3	4.13	mg/Kg	2	2/6/2013 12:45
Cadmium	0.407	J	0.041	0.413	mg/Kg	1	2/5/2013 15:17
Calcium	60,800		830	4,130	mg/Kg	100	2/6/2013 14:59
Chromium	14.0		0.074	0.413	mg/Kg	1	2/5/2013 15:17
Cobalt	5.52		0.058	0.413	mg/Kg	1	2/5/2013 15:17
Copper	11.1		0.083	0.413	mg/Kg	1	2/5/2013 15:17
Iron	10,100		8.3	41.3	mg/Kg	1	2/5/2013 15:17
Lead	14.7		0.041	0.413	mg/Kg	1	2/5/2013 15:17
Manganese	375		8.3	41.3	mg/Kg	100	2/6/2013 14:59
Molybdenum	0.585		0.12	0.413	mg/Kg	1	2/5/2013 15:17
Nickel	11.6		0.074	0.413	mg/Kg	1	2/5/2013 15:17
Potassium	3,770		21	82.6	mg/Kg	2	2/6/2013 12:45
Selenium	0.950		0.15	0.413	mg/Kg	1	2/5/2013 15:17
Silver	U		0.066	0.413	mg/Kg	1	2/5/2013 15:17
Sodium	135		18	82.6	mg/Kg	2	2/6/2013 12:45
Uranium	U		0.41	0.413	mg/Kg	1	2/5/2013 15:17
Zinc	37.3		0.21	0.413	mg/Kg	1	2/5/2013 15:17
LOW-LEVEL SEMIVOLATILES		Meth	od: SW8270		Prep: SW	3541 / 2/7/13	Analyst: LG
1-Methylnaphthalene	U		1.6	6.6	μg/Kg	1	2/7/2013 17:07
2-Methylnaphthalene	U		1.6	6.6	μg/Kg	1	2/7/2013 17:07
Benzo(a)pyrene	U		1.6	6.6	μg/Kg	1	2/7/2013 17:07
Naphthalene	U		1.6	6.6	μg/Kg	1	2/7/2013 17:07
Surr: 2,4,6-Tribromophenol	49.2			36-126	%REC	1	2/7/2013 17:07
Surr: 2-Fluorobiphenyl	57.2			43-125	%REC	1	2/7/2013 17:07

Note: See Qualifiers Page for a list of qualifiers and their explanation. **Date:** 13-Feb-13

Lab ID: 13011005-01

Work Order: 13011005

Client: Navajo Refining Company

Project: RO Discharge Sampling

MW-116 (1) **Sample ID:**

Lab ID: 13011005-01 **Collection Date:** 1/29/2013 04:05 PM Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 2-Fluorophenol	49.1			37-125	%REC	1	2/7/2013 17:07
Surr: 4-Terphenyl-d14	70.1			32-125	%REC	1	2/7/2013 17:07
Surr: Nitrobenzene-d5	57.8			37-125	%REC	1	2/7/2013 17:07
Surr: Phenol-d6	53.0			40-125	%REC	1	2/7/2013 17:07
VOLATILES - SW8260C		Met	hod: SW8260				Analyst: WLR
1,1,1-Trichloroethane	U		1.7	5.0	μg/Kg	1	2/1/2013 13:18
1,1,2,2-Tetrachloroethane	U		0.50	5.0	μg/Kg	1	2/1/2013 13:18
1,1,2-Trichloroethane	U		2.0	5.0	μg/Kg	1	2/1/2013 13:18
1,1-Dichloroethane	U		0.50	5.0	μg/Kg	1	2/1/2013 13:18
1,1-Dichloroethene	U		1.5	5.0	μg/Kg	1	2/1/2013 13:18
1,2-Dibromoethane	U		0.70	5.0	μg/Kg	1	2/1/2013 13:18
1,2-Dichloroethane	U		0.60	5.0	μg/Kg	1	2/1/2013 13:18
Benzene	U		0.60	5.0	μg/Kg	1	2/1/2013 13:18
Carbon tetrachloride	U		1.2	5.0	μg/Kg	1	2/1/2013 13:18
Chloroform	U		1.8	5.0	μg/Kg	1	2/1/2013 13:18
Ethylbenzene	U		0.90	5.0	μg/Kg	1	2/1/2013 13:18
Methylene chloride	U		2.5	10	μg/Kg	1	2/1/2013 13:18
Tetrachloroethene	U		1.0	5.0	μg/Kg	1	2/1/2013 13:18
Toluene	U		0.70	5.0	μg/Kg	1	2/1/2013 13:18
Trichloroethene	U		1.6	5.0	μg/Kg	1	2/1/2013 13:18
Vinyl chloride	U		1.0	2.0	μg/Kg	1	2/1/2013 13:18
Xylenes, Total	U		2.6	15	μg/Kg	1	2/1/2013 13:18
Surr: 1,2-Dichloroethane-d4	92.3			70-128	%REC	1	2/1/2013 13:18
Surr: 4-Bromofluorobenzene	92.8			73-126	%REC	1	2/1/2013 13:18
Surr: Dibromofluoromethane	103			71-128	%REC	1	2/1/2013 13:18
Surr: Toluene-d8	95.7			73-127	%REC	1	2/1/2013 13:18
ANIONS - EPA 300.0 (1993)		Met	hod: E300		Prep: E300	0 / 2/5/13	Analyst: JKP
Chloride	22.2		2.0	4.99	mg/Kg	1	2/5/2013 19:40
Fluoride	14.7		0.30	0.999	mg/Kg	1	2/5/2013 19:40
Nitrogen, Nitrate (As N)	2.63		0.30	0.999	mg/Kg	1	2/5/2013 19:40
Nitrogen, Nitrite (As N)	U		0.30	0.999	mg/Kg	1	2/5/2013 19:40
Sulfate	330		2.0	4.99	mg/Kg	1	2/5/2013 19:40
Surr: Selenate (surr)	85.4			85-115	%REC	1	2/5/2013 19:40
CYANIDE		Met	hod: SW9014		Prep: SW9	9010C / 2/5/13	Analyst: EDG
Cyanide	U		0.58	1.94	mg/Kg	1	2/5/2013 16:30
MOISTURE		Met	hod: SW3550				Analyst: KAH
Percent Moisture	17.9		0.010	0.0100	wt%	1	2/1/2013 13:00

Note: See Qualifiers Page for a list of qualifiers and their explanation. **Date:** 13-Feb-13

Work Order: 13011005

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 13011005

 Sample ID: MW-116 (3)
 Lab ID: 13011005-02

Collection Date: 1/29/2013 04:18 PM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 19.1
 0.010
 0.0100
 wt%
 1
 2/1/2013 13:00

Client: Navajo Refining Company

Project: RO Discharge Sampling **Sample ID:** MW-116 (5)

Collection Date: 1/29/2013 04:32 PM

Work Order: 13011005

Lab ID: 13011005-03

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Meth	nod: SW7471A		Prep: SW	7471A / 2/5/13	Analyst: OFO
Mercury	6.77		0.29	3.59	μg/Kg	1	2/5/2013 16:49
METALS		Meth	nod: SW6020		Prep: SW	3050A / 2/4/13	Analyst: SKS
Aluminum	9,770		15	76.4	mg/Kg	100	2/6/2013 15:08
Arsenic	3.65		0.076	0.382	mg/Kg	1	2/5/2013 16:13
Barium	155		6.1	38.2	mg/Kg	100	2/6/2013 15:08
Boron	7.48		2.1	3.82	mg/Kg	2	2/6/2013 12:59
Cadmium	0.156	J	0.038	0.382	mg/Kg	1	2/5/2013 16:13
Calcium	122,000		760	3,820	mg/Kg	100	2/6/2013 15:08
Chromium	8.46		0.069	0.382	mg/Kg	1	2/5/2013 16:13
Cobalt	2.94		0.053	0.382	mg/Kg	1	2/5/2013 16:13
Copper	4.05		0.076	0.382	mg/Kg	1	2/5/2013 16:13
Iron	6,240		7.6	38.2	mg/Kg	1	2/5/2013 16:13
Lead	4.47		0.038	0.382	mg/Kg	1	2/5/2013 16:13
Manganese	163		7.6	38.2	mg/Kg	100	2/6/2013 15:08
Molybdenum	0.485		0.11	0.382	mg/Kg	1	2/5/2013 16:13
Nickel	6.19		0.069	0.382	mg/Kg	1	2/5/2013 16:13
Potassium	2,130		9.9	38.2	mg/Kg	1	2/5/2013 16:13
Selenium	0.485		0.14	0.382	mg/Kg	1	2/5/2013 16:13
Silver	U		0.061	0.382	mg/Kg	1	2/5/2013 16:13
Sodium	156		8.4	38.2	mg/Kg	1	2/5/2013 16:13
Uranium	0.523		0.38	0.382	mg/Kg	1	2/5/2013 16:13
Zinc	19.0		0.19	0.382	mg/Kg	1	2/5/2013 16:13
ANIONS - EPA 300.0 (1993)		Meth	nod: E300		Prep: E30	0 / 2/5/13	Analyst: JKP
Chloride	29.8		2.0	4.96	mg/Kg	1	2/5/2013 19:54
Fluoride	4.51		0.30	0.992	mg/Kg	1	2/5/2013 19:54
Nitrogen, Nitrate (As N)	U		0.30	0.992	mg/Kg	1	2/5/2013 19:54
Nitrogen, Nitrite (As N)	U		0.30	0.992	mg/Kg	1	2/5/2013 19:54
Sulfate	234		2.0	4.96	mg/Kg	1	2/5/2013 19:54
Surr: Selenate (surr)	87.5			85-115	%REC	1	2/5/2013 19:54
CYANIDE		Meth	nod: SW9014		Prep: SW	9010C / 2/4/13	Analyst: EDG
Cyanide	U		0.54	1.80	mg/Kg	1	2/4/2013 13:30
MOISTURE		Meth	nod: SW3550				Analyst: KAH
Percent Moisture	16.1		0.010	0.0100	wt%	1	2/1/2013 13:00

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 13011005

 Sample ID: MW-116 (7)
 Lab ID: 13011005-04

Collection Date: 1/30/2013 08:55 AM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 16.0
 0.010
 0.0100
 wt%
 1
 2/1/2013 13:00

Client: Navajo Refining Company

Work Order: 13011005 **Project: RO Discharge Sampling Lab ID:** 13011005-05

MW-116 (9) **Sample ID:**

Collection Date: 1/30/2013 08:55 AM Matrix: SOIL

Report Dilution **Date Analyzed** Limit **Analyses** Result Qual **MDL Factor** Units

Date: 13-Feb-13

Method: SW3550 **MOISTURE** Analyst: KAH 2/1/2013 13:00 **Percent Moisture** 16.2 0.010 0.0100 wt%

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 13011005

 Sample ID: MW-116 (10)
 Lab ID: 13011005-06

Collection Date: 1/30/2013 09:02 AM Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Meth	od: SW7471A		Prep: SW	7471A / 2/5/13	Analyst: OFO
Mercury	7.74		0.27	3.36	μg/Kg	1	2/5/2013 16:51
METALS		Meth	od: SW6020		Prep: SW	3050A / 2/4/13	Analyst: SKS
Aluminum	7,550		17	86.4	mg/Kg	100	2/6/2013 15:11
Arsenic	2.48		0.086	0.432	mg/Kg	1	2/5/2013 16:15
Barium	43.5		0.069	0.432	mg/Kg	1	2/5/2013 16:15
Boron	9.23	J	6.0	10.8	mg/Kg	5	2/6/2013 13:02
Cadmium	0.114	J	0.043	0.432	mg/Kg	1	2/5/2013 16:15
Calcium	166,000		860	4,320	mg/Kg	100	2/6/2013 15:11
Chromium	6.73		0.078	0.432	mg/Kg	1	2/5/2013 16:15
Cobalt	2.58		0.060	0.432	mg/Kg	1	2/5/2013 16:15
Copper	2.97		0.086	0.432	mg/Kg	1	2/5/2013 16:15
Iron	4,720		8.6	43.2	mg/Kg	1	2/5/2013 16:15
Lead	3.63		0.043	0.432	mg/Kg	1	2/5/2013 16:15
Manganese	139		0.086	0.432	mg/Kg	1	2/5/2013 16:15
Molybdenum	0.331	J	0.13	0.432	mg/Kg	1	2/5/2013 16:15
Nickel	4.51		0.078	0.432	mg/Kg	1	2/5/2013 16:15
Potassium	1,620		11	43.2	mg/Kg	1	2/5/2013 16:15
Selenium	0.353	J	0.16	0.432	mg/Kg	1	2/5/2013 16:15
Silver	U		0.069	0.432	mg/Kg	1	2/5/2013 16:15
Sodium	121		9.5	43.2	mg/Kg	1	2/5/2013 16:15
Uranium	0.450		0.43	0.432	mg/Kg	1	2/5/2013 16:15
Zinc	14.2		0.22	0.432	mg/Kg	1	2/5/2013 16:15
ANIONS - EPA 300.0 (1993)		Meth	od: E300		Prep: E30	0 / 2/5/13	Analyst: JKP
Chloride	8.03		2.0	4.98	mg/Kg	1	2/5/2013 20:09
Fluoride	5.76		0.30	0.995	mg/Kg	1	2/5/2013 20:09
Nitrogen, Nitrate (As N)	0.896	J	0.30	0.995	mg/Kg	1	2/5/2013 20:09
Nitrogen, Nitrite (As N)	U		0.30	0.995	mg/Kg	1	2/5/2013 20:09
Sulfate	82.1		2.0	4.98	mg/Kg	1	2/5/2013 20:09
Surr: Selenate (surr)	90.2			85-115	%REC	1	2/5/2013 20:09
CYANIDE		Meth	od: SW9014		Prep: SW	9010C / 2/5/13	Analyst: EDG
Cyanide	U		0.59	1.96	mg/Kg	1	2/5/2013 16:30
MOISTURE		Meth	od: SW3550				Analyst: KAH
Percent Moisture	16.4		0.010	0.0100	wt%	1	2/1/2013 13:00

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

Date: 13-Feb-13

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 13011005

 Sample ID: MW-116 (11)
 Lab ID: 13011005-07

Collection Date: 1/30/2013 09:05 AM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 23.0
 0.010
 0.0100
 wt%
 1
 2/1/2013 13:00

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 13011005

 Sample ID: MW-116 (13)
 Lab ID: 13011005-08

Collection Date: 1/30/2013 09:05 AM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 28.5
 0.010
 0.0100
 wt%
 1
 2/1/2013 13:00

Client: Navajo Refining Company

Project: RO Discharge Sampling **Sample ID:** MW-116 (15)

Collection Date: 1/30/2013 09:10 AM

--- 1001100#

Work Order: 13011005

Lab ID: 13011005-09

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Meth	nod: SW7471A		Prep: SW	7471A / 2/5/13	Analyst: OFO
Mercury	0.647	J	0.29	3.59	μg/Kg	1	2/5/2013 16:53
METALS		Meth	nod: SW6020		Prep: SW:	3050A / 2/4/13	Analyst: SKS
Aluminum	3,970		18	89.6	mg/Kg	100	2/6/2013 15:13
Arsenic	2.83		0.090	0.448	mg/Kg	1	2/5/2013 16:17
Barium	19.0		0.072	0.448	mg/Kg	1	2/5/2013 16:17
Boron	6.99	J	6.3	11.2	mg/Kg	5	2/6/2013 13:04
Cadmium	0.102	J	0.045	0.448	mg/Kg	1	2/5/2013 16:17
Calcium	216,000		900	4,480	mg/Kg	100	2/6/2013 15:13
Chromium	3.86		0.081	0.448	mg/Kg	1	2/5/2013 16:17
Cobalt	2.70		0.063	0.448	mg/Kg	1	2/5/2013 16:17
Copper	2.53		0.090	0.448	mg/Kg	1	2/5/2013 16:17
Iron	2,880		9.0	44.8	mg/Kg	1	2/5/2013 16:17
Lead	2.03		0.045	0.448	mg/Kg	1	2/5/2013 16:17
Manganese	351		9.0	44.8	mg/Kg	100	2/6/2013 15:13
Molybdenum	0.645		0.13	0.448	mg/Kg	1	2/5/2013 16:17
Nickel	5.57		0.081	0.448	mg/Kg	1	2/5/2013 16:17
Potassium	956		12	44.8	mg/Kg	1	2/5/2013 16:17
Selenium	0.252	J	0.16	0.448	mg/Kg	1	2/5/2013 16:17
Silver	U		0.072	0.448	mg/Kg	1	2/5/2013 16:17
Sodium	108		9.9	44.8	mg/Kg	1	2/5/2013 16:17
Uranium	U		0.45	0.448	mg/Kg	1	2/5/2013 16:17
Zinc	7.87		0.22	0.448	mg/Kg	1	2/5/2013 16:17
ANIONS - EPA 300.0 (1993)		Meth	nod: E300		Prep: E30	0 / 2/5/13	Analyst: JKP
Chloride	31.6		2.0	4.92	mg/Kg	1	2/5/2013 20:23
Fluoride	8.70		0.30	0.984	mg/Kg	1	2/5/2013 20:23
Nitrogen, Nitrate (As N)	U		0.30	0.984	mg/Kg	1	2/5/2013 20:23
Nitrogen, Nitrite (As N)	U		0.30	0.984	mg/Kg	1	2/5/2013 20:23
Sulfate	891		2.0	4.92	mg/Kg	1	2/5/2013 20:23
Surr: Selenate (surr)	87.2			85-115	%REC	1	2/5/2013 20:23
CYANIDE		Meth	nod: SW9014		Prep: SW9	9010C / 2/5/13	Analyst: EDG
Cyanide	U		0.55	1.82	mg/Kg	1	2/5/2013 16:30
MOISTURE		Meth	nod: SW3550				Analyst: KAH
Percent Moisture	15.3		0.010	0.0100	wt%	1	2/1/2013 13:00

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 13011005

 Sample ID: MW-116 (17)
 Lab ID: 13011005-10

Collection Date: 1/30/2013 09:15 AM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 20.5
 0.010
 0.0100
 wt%
 1
 2/1/2013 13:00

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 13011005

 Sample ID: MW-116 (19)
 Lab ID: 13011005-11

Collection Date: 1/30/2013 09:15 AM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 24.0
 0.010
 0.0100
 wt%
 1
 2/1/2013 13:00

Client: Navajo Refining Company

Project: RO Discharge Sampling **Sample ID:** MW-116 (20)

Sample ID: MW-116 (20) **Collection Date:** 1/30/2013 09:20 AM

Work Order: 13011005

Lab ID: 13011005-12

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
MERCURY - SW7471B		Metho	od: SW7471A		Prep: SW	7471A / 2/5/13	Analyst: OFO
Mercury	8.29		0.28	3.44	μg/Kg	1	2/5/2013 16:55
METALS		Metho	od: SW6020		Prep: SW	3050A / 2/4/13	Analyst: SKS
Aluminum	8,370		18	92.0	mg/Kg	100	2/6/2013 15:15
Arsenic	6.28		0.092	0.460	mg/Kg	1	2/5/2013 16:20
Barium	19.9		0.074	0.460	mg/Kg	1	2/5/2013 16:20
Boron	4.74		2.6	4.60	mg/Kg	2	2/6/2013 13:07
Cadmium	0.283	J	0.046	0.460	mg/Kg	1	2/5/2013 16:20
Calcium	104,000		920	4,600	mg/Kg	100	2/6/2013 15:15
Chromium	7.41		0.083	0.460	mg/Kg	1	2/5/2013 16:20
Cobalt	2.95		0.064	0.460	mg/Kg	1	2/5/2013 16:20
Copper	4.92		0.092	0.460	mg/Kg	1	2/5/2013 16:20
Iron	7,120		9.2	46.0	mg/Kg	1	2/5/2013 16:20
Lead	7.08		0.046	0.460	mg/Kg	1	2/5/2013 16:20
Manganese	251		9.2	46.0	mg/Kg	100	2/6/2013 15:15
Molybdenum	0.837		0.14	0.460	mg/Kg	1	2/5/2013 16:20
Nickel	7.79		0.083	0.460	mg/Kg	1	2/5/2013 16:20
Potassium	1,280		12	46.0	mg/Kg	1	2/5/2013 16:20
Selenium	0.512		0.17	0.460	mg/Kg	1	2/5/2013 16:20
Silver	U		0.074	0.460	mg/Kg	1	2/5/2013 16:20
Sodium	142		10	46.0	mg/Kg	1	2/5/2013 16:20
Uranium	U		0.46	0.460	mg/Kg	1	2/5/2013 16:20
Zinc	19.8		0.23	0.460	mg/Kg	1	2/5/2013 16:20
ANIONS - EPA 300.0 (1993)		Metho	od: E300		Prep: E30	0 / 2/5/13	Analyst: JKP
Chloride	33.3		2.0	4.99	mg/Kg	1	2/5/2013 20:38
Fluoride	3.92		0.30	0.997	mg/Kg	1	2/5/2013 20:38
Nitrogen, Nitrate (As N)	U		0.30	0.997	mg/Kg	1	2/5/2013 20:38
Nitrogen, Nitrite (As N)	U		0.30	0.997	mg/Kg	1	2/5/2013 20:38
Sulfate	310		2.0	4.99	mg/Kg	1	2/5/2013 20:38
Surr: Selenate (surr)	85.3			85-115	%REC	1	2/5/2013 20:38
CYANIDE		Metho	od: SW9014		Prep: SW	9010C / 2/5/13	Analyst: EDG
Cyanide	U		0.59	1.96	mg/Kg	1	2/5/2013 16:30
MOISTURE		Metho	od: SW3550				Analyst: KAH
Percent Moisture	19.2		0.010	0.0100	wt%	1	2/1/2013 13:00

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 13011005

 Sample ID: MW-116 (21)
 Lab ID: 13011005-13

Collection Date: 1/30/2013 09:30 AM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 22.9
 0.010
 0.0100
 wt%
 1
 2/1/2013 13:00

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 13011005

 Sample ID: MW-116 (23)
 Lab ID: 13011005-14

Collection Date: 1/30/2013 09:30 AM Matrix: SOIL

Analyses Result Qual MDL Limit Units Factor Date Analyzed

Date: 13-Feb-13

 MOISTURE
 Method: SW3550
 Analyst: KAH

 Percent Moisture
 23.5
 0.010
 0.0100
 wt%
 1
 2/1/2013 13:00

Client: Navajo Refining Company

Project: RO Discharge Sampling
 Work Order: 13011005

 Sample ID: MW-116 (25)
 Lab ID: 13011005-15

Collection Date: 1/30/2013 09:35 AM Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
TPH DRO/ORO		Metl	hod: SW8015M		Prep: SW:	3541 / 2/5/13	Analyst: KMB
TPH (Oil Range)	U		0.50	3.4	mg/Kg	1	2/6/2013 14:17
TPH (Diesel Range)	U		0.50	1.7	mg/Kg	1	2/6/2013 14:17
Surr: 2-Fluorobiphenyl	61.6			60-135	%REC	1	2/6/2013 14:17
GASOLINE RANGE ORGANICS - SW8015	С	Metl	hod: SW8015				Analyst: KKP
Gasoline Range Organics	U		0.020	0.050	mg/Kg	1	2/5/2013 18:42
Surr: 4-Bromofluorobenzene	90.8			70-130	%REC	1	2/5/2013 18:42
MERCURY - SW7471B		Metl	hod: SW7471A		Prep: SW	7471A / 2/5/13	Analyst: OFO
Mercury	0.757	J	0.28	3.43	μg/Kg	1	2/5/2013 16:57
METALS		Metl	hod: SW6020		Prep: SW:	3050A / 2/4/13	Analyst: SKS
Aluminum	7,960		16	81.8	mg/Kg	100	2/6/2013 15:28
Arsenic	3.22		0.082	0.409	mg/Kg	1	2/5/2013 16:22
Barium	181		6.5	40.9	mg/Kg	100	2/6/2013 15:28
Boron	7.57		2.3	4.09	mg/Kg	2	2/6/2013 13:14
Cadmium	0.205	J	0.041	0.409	mg/Kg	1	2/5/2013 16:22
Calcium	76,500		820	4,090	mg/Kg	100	2/6/2013 15:28
Chromium	6.81		0.074	0.409	mg/Kg	1	2/5/2013 16:22
Cobalt	2.49		0.057	0.409	mg/Kg	1	2/5/2013 16:22
Copper	4.45		0.082	0.409	mg/Kg	1	2/5/2013 16:22
Iron	5,710		8.2	40.9	mg/Kg	1	2/5/2013 16:22
Lead	5.57		0.041	0.409	mg/Kg	1	2/5/2013 16:22
Manganese	169		8.2	40.9	mg/Kg	100	2/6/2013 15:28
Molybdenum	0.381	J	0.12	0.409	mg/Kg	1	2/5/2013 16:22
Nickel	6.75		0.074	0.409	mg/Kg	1	2/5/2013 16:22
Potassium	1,700		11	40.9	mg/Kg	1	2/5/2013 16:22
Selenium	0.433		0.15	0.409	mg/Kg	1	2/5/2013 16:22
Silver	U		0.065	0.409	mg/Kg	1	2/5/2013 16:22
Sodium	120		9.0	40.9	mg/Kg	1	2/5/2013 16:22
Uranium	U		0.41	0.409	mg/Kg	1	2/5/2013 16:22
Zinc	17.8		0.20	0.409	mg/Kg	1	2/5/2013 16:22
LOW-LEVEL SEMIVOLATILES		Metl	hod: SW8270		Prep: SW3	3541 / 2/7/13	Analyst: LG
1-Methylnaphthalene	U		1.6	6.6	μg/Kg	1	2/7/2013 17:28
2-Methylnaphthalene	U		1.6	6.6	μg/Kg	1	2/7/2013 17:28
Benzo(a)pyrene	U		1.6	6.6	μg/Kg	1	2/7/2013 17:28
Naphthalene	U		1.6	6.6	μg/Kg	1	2/7/2013 17:28
Surr: 2,4,6-Tribromophenol	69.5			36-126	%REC	1	2/7/2013 17:28
Surr: 2-Fluorobiphenyl	81.4			43-125	%REC	1	2/7/2013 17:28

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

Date: 13-Feb-13

Sample ID:

Client: Navajo Refining Company

Project: RO Discharge Sampling

MW-116 (25) **Collection Date:** 1/30/2013 09:35 AM

Work Order: 13011005

Lab ID: 13011005-15

Date: 13-Feb-13

Matrix: SOIL

Analyses	Result	Qual	MDL	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 2-Fluorophenol	70.7			37-125	%REC	1	2/7/2013 17:28
Surr: 4-Terphenyl-d14	98.5			32-125	%REC	1	2/7/2013 17:28
Surr: Nitrobenzene-d5	81.0			37-125	%REC	1	2/7/2013 17:28
Surr: Phenol-d6	75.6			40-125	%REC	1	2/7/2013 17:28
VOLATILES - SW8260C		Meth	nod: SW8260				Analyst: WLR
1,1,1-Trichloroethane	U		1.7	5.0	μg/Kg	1	2/1/2013 13:41
1,1,2,2-Tetrachloroethane	U		0.50	5.0	μg/Kg	1	2/1/2013 13:41
1,1,2-Trichloroethane	U		2.0	5.0	μg/Kg	1	2/1/2013 13:41
1,1-Dichloroethane	U		0.50	5.0	μg/Kg	1	2/1/2013 13:41
1,1-Dichloroethene	U		1.5	5.0	μg/Kg	1	2/1/2013 13:41
1,2-Dibromoethane	U		0.70	5.0	μg/Kg	1	2/1/2013 13:41
1,2-Dichloroethane	U		0.60	5.0	μg/Kg	1	2/1/2013 13:41
Benzene	U		0.60	5.0	μg/Kg	1	2/1/2013 13:41
Carbon tetrachloride	U		1.2	5.0	μg/Kg	1	2/1/2013 13:41
Chloroform	U		1.8	5.0	μg/Kg	1	2/1/2013 13:41
Ethylbenzene	U		0.90	5.0	μg/Kg	1	2/1/2013 13:41
Methylene chloride	U		2.5	10	μg/Kg	1	2/1/2013 13:41
Tetrachloroethene	U		1.0	5.0	μg/Kg	1	2/1/2013 13:41
Toluene	U		0.70	5.0	μg/Kg	1	2/1/2013 13:41
Trichloroethene	U		1.6	5.0	μg/Kg	1	2/1/2013 13:41
Vinyl chloride	U		1.0	2.0	μg/Kg	1	2/1/2013 13:41
Xylenes, Total	U		2.6	15	μg/Kg	1	2/1/2013 13:41
Surr: 1,2-Dichloroethane-d4	88.4			70-128	%REC	1	2/1/2013 13:41
Surr: 4-Bromofluorobenzene	91.1			73-126	%REC	1	2/1/2013 13:41
Surr: Dibromofluoromethane	98.1			71-128	%REC	1	2/1/2013 13:41
Surr: Toluene-d8	103			73-127	%REC	1	2/1/2013 13:41
ANIONS - EPA 300.0 (1993)		Meth	nod: E300		Prep: E300	0 / 2/5/13	Analyst: JKP
Chloride	47.6		2.0	5.00	mg/Kg	1	2/5/2013 20:53
Fluoride	1.91		0.30	1.00	mg/Kg	1	2/5/2013 20:53
Nitrogen, Nitrate (As N)	U		0.30	1.00	mg/Kg	1	2/5/2013 20:53
Nitrogen, Nitrite (As N)	U		0.30	1.00	mg/Kg	1	2/5/2013 20:53
Sulfate	254		2.0	5.00	mg/Kg	1	2/5/2013 20:53
Surr: Selenate (surr)	86.3			85-115	%REC	1	2/5/2013 20:53
CYANIDE		Meth	nod: SW9014		Prep: SW9	9010C / 2/5/13	Analyst: EDG
Cyanide	U		0.57	1.90	mg/Kg	1	2/5/2013 16:30
MOISTURE		Meth	nod: SW3550				Analyst: KAH
Percent Moisture	23.2		0.010	0.0100	wt%	1	2/1/2013 13:00

Client: Navajo Refining Company

Project: RO Discharge Sampling
Sample ID: Trip Blank 011813-15

Collection Date: 1/29/2013

Work Order: 13011005

Lab ID: 13011005-16 **Matrix:** WATER

Date: 13-Feb-13

Analyses	Result	Qual M	Report IDL Limit	Units	Dilution Factor	Date Analyzed
LOW LEVEL VOLATILES - SW8260C		Method: S	W8260			Analyst: AKP
1,1,1-Trichloroethane	U	0.0	0.0010) mg/L	1	2/4/2013 12:29
1,1,2,2-Tetrachloroethane	U	0.0	0.0010) mg/L	1	2/4/2013 12:29
1,1,2-Trichloroethane	U	0.0	0.0010) mg/L	1	2/4/2013 12:29
1,1-Dichloroethane	U	0.0	0.0010) mg/L	1	2/4/2013 12:29
1,1-Dichloroethene	U	0.0	0.0010) mg/L	1	2/4/2013 12:29
1,2-Dibromoethane	U	0.0	0.0010) mg/L	1	2/4/2013 12:29
1,2-Dichloroethane	U	0.0	0.0010) mg/L	1	2/4/2013 12:29
Benzene	U	0.0	0.0010) mg/L	1	2/4/2013 12:29
Carbon tetrachloride	U	0.0	0.0010) mg/L	1	2/4/2013 12:29
Chloroform	U	0.0	0.0010) mg/L	1	2/4/2013 12:29
Ethylbenzene	U	0.0	0.0010) mg/L	1	2/4/2013 12:29
Methylene chloride	U	0.0	0.0020) mg/L	1	2/4/2013 12:29
Tetrachloroethene	U	0.0	0.0010) mg/L	1	2/4/2013 12:29
Toluene	U	0.0	0.0010) mg/L	1	2/4/2013 12:29
Trichloroethene	U	0.0	0.0010) mg/L	1	2/4/2013 12:29
Vinyl chloride	U	0.0	0.0010) mg/L	1	2/4/2013 12:29
Xylenes, Total	U	0.0	0.0010) mg/L	1	2/4/2013 12:29
Surr: 1,2-Dichloroethane-d4	91.7		71-12	5 %REC	1	2/4/2013 12:29
Surr: 4-Bromofluorobenzene	96.9		70-12	5 %REC	1	2/4/2013 12:29
Surr: Dibromofluoromethane	101		74-12	5 %REC	1	2/4/2013 12:29
Surr: Toluene-d8	98.0		78-12	3 %REC	1	2/4/2013 12:29

Client: Navajo Refining Company

Work Order: 13011005

Project: RO Discharge Sampling

Date: 13-Feb-13

QC BATCH REPORT

Batch ID: 67579	Instrument ID FID-7		Metho	d: SW801	5M						
MBLK Sample ID:	FBLKS1-130205-67579				L	Jnits: mg/	Kg	Analys	sis Date: 2/	6/2013 11	:56 AM
Client ID:	Run II	D: FID-7 _1	130206A		Se	qNo: 310	4153	Prep Date: 2/5	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Oil Range)	U	3.4									
TPH (Diesel Range)	U	1.7									
Surr: 2-Fluorobiphenyl	2.092	0.10	3.33		0	62.8	60-135	C)		
LCS Sample ID:	FLCSS1-130205-67579				Units: mg/Kg			Analysis Date: 2/6/2013 12:			:19 PN
Client ID:	Run II	D: FID-7 _1	130206A	06A SeqNo: 3			4154	Prep Date: 2/5	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Oil Range)	27.05	3.4	33.33		0	81.2	70-130	0)		
TPH (Diesel Range)	35.72	1.7	33.33		0	107	70-130	0)		
Surr: 2-Fluorobiphenyl	2.536	0.10	3.33		0	76.2	60-135	C)		
MS Sample ID:	1302018-01BMS				L	Jnits: mg/	Kg	Analys	sis Date: 2/	6/2013 01	:06 PN
Client ID:	Run II	D: FID-7 _1	130206A	SeqNo: 3104156		4156	Prep Date: 2/5/2013		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
TPH (Oil Range)	229.1	3.4	33.23	219	.8	28.1	70-130	O)		SEO
TPH (Diesel Range)	80.52	1.7	33.23	75.4	45	15.3	70-130	0)		SE
Surr: 2-Fluorobiphenyl	2.284	0.10	3.32		0	68.8	60-135	C)		
MSD Sample ID:	1302018-01BMSD				L	Jnits: mg/	Kg	Analys	sis Date: 2/	6/2013 01	:29 PM
Client ID:	Run II	D: FID-7 _1	130206A		Se	qNo: 310	4157	Prep Date: 2/5	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
TPH (Oil Range)	207.2	3.4	33.24	219	.8	-37.7	70-130	229.1	10	30	SEO
TPH (Diesel Range)	76.56	1.7	33.24	75.4	45	3.32	70-130	80.52	5.05	30	SE
Surr: 2-Fluorobiphenyl	2.311	0.10	3.321		0	69.6	60-135	2.284	1.17	30	
The following samples v	vere analyzed in this batch:		3011005- ID	13 15		005-					

Note:

Client: Navajo Refining Company

Work Order: 13011005

Project: RO Discharge Sampling

Batch ID: R142225	Instrument ID FID-9		Metho	d: SW80 1	5						
MBLK Sample ID: 0	GBLKS-130205-R142225				L	Jnits: mg/	Kg	Analys	sis Date: 2/	5/2013 01	:02 PM
Client ID:	Run II	D: FID-9 _1	130205A		Se	SeqNo: 3103619		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	U	0.050									
Surr: 4-Bromofluorobenz	rene 0.08374	0.0050	0.1		0	83.7	70-130	C)		
LCS Sample ID: 0	GLCSS-130205-R142225			Units: mg/Kg			Analysis Date: 2/5/2013 12			:25 PN	
Client ID:	Run II	D: FID-9 _1	130205A		Se	qNo: 310 :	3613	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.942	0.050	1		0	94.2	70-130	C)		
Surr: 4-Bromofluorobenz	rene 0.09701	0.0050	0.1		0	97	70-130	C)		
LCSD Sample ID: 0	GLCSDS-130205-R142225				L	Jnits: mg/	Kg	Analys	sis Date: 2/	5/2013 12	:44 PN
Client ID:	Run II	D: FID-9 _1	130205A		Se	qNo: 310 :	3616	Prep Date:		DF: 1	
	B #	DO 1	ODKV	SPK Ref Value		0/ DEO	Control Limit	RPD Ref Value	0/ 000	RPD Limit	Oval
Analyte	Result	PQL	SPK Val	value		%REC			%RPD		Qual
Gasoline Range Organics Surr: 4-Bromofluorobenz	0.9525 rene 0.09686	0.050	0.1		0	95.2 96.9	70-130 70-130	0.942		30	
		0.0000	0.1								
MS Sample ID: 1 Client ID:	302018-04ZMS	D: FID-9 _1	12020E A			Jnits: mg/	_	Analys Prep Date:	sis Date: 2/	5/2013 04 DF: 1	:11 PN
Client ID.	Ruii ii	D. FID-9 _	130203A	0DK D-4	36	qNo: 310 :		•		RPD	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	Limit	Qual
Gasoline Range Organics	0.8005	0.050	1		0	80	70-130	C)		
Surr: 4-Bromofluorobenz	rene 0.08728	0.0050	0.1		0	87.3	70-130	C)		
MSD Sample ID: 1	302018-04ZMSD				L	Jnits: mg/	Kg	Analys	sis Date: 2/	5/2013 04	:30 PM
Client ID:	Run II	D: FID-9 _1	130205A		Se	qNo: 310 3	3632	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Gasoline Range Organics	0.8125	0.050	1		0	81.2	70-130	0.8005	5 1.49	30	
Surr: 4-Bromofluorobenz	rene 0.08872	0.0050	0.1		0	88.7	70-130	0.08728	3 1.64	30	
The following samples we	ere analyzed in this batch:		3011005- IB	13 15		005-					

Note:

Client: Navajo Refining Company

Work Order: 13011005

Project: RO Discharge Sampling

Batch ID: 675	23 Instrument ID ICPMS05		Method	SW602	20					
MBLK	Sample ID: MBLKS1-020113-67523				Units: mg/	Kg	Analy	sis Date: 2	/5/2013 03	:05 PM
Client ID:	Rui	n ID: ICPMS	05_130205A		SeqNo: 310 2	2200	Prep Date: 2/4	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	0.4165	1.0								J
Arsenic	U	0.50								
Barium	U	0.50								
Cadmium	U	0.50								
Calcium	U	50								
Chromium	U	0.50								
Cobalt	U	0.50								
Copper	U	0.50								
Iron	U	50								
Lead	U	0.50								
Manganese	U	0.50								
Molybdenum	U	0.50								
Nickel	U	0.50								
Potassium	U	50								
Selenium	U	0.50								
Silver	U	0.50								
Uranium	U	0.50								
Zinc	U	0.50								
MBLK	Sample ID: MBLKS1-020113-67523				Units: mg/	Kg	Analy	sis Date: 2	/6/2013 12	:35 PM
Client ID:	Rui	n ID: ICPMS	05_130206A		SeqNo: 310 3	3603	Prep Date: 2/4	/2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron	U	2.5								
Sodium	U	50								

Client: Navajo Refining Company

Work Order: 13011005

Project: RO Discharge Sampling

Batch ID: 675	Instrument ID ICPMS	05	Method:	SW602	0						
LCS	Sample ID: MLCSS1-020113-6752	3			l	Jnits: mg/ l	Kg	Analysis Date: 2/5/2013 03:08 PM			
Client ID:		Run ID: ICPMS	05_130205A	SeqNo: 31			2201	Prep Date: 2/4/2013		DF: 1	
			9	SPK Ref			Control	RPD Ref		RPD	
Analyte	Resu	lt PQL	SPK Val	Value		%REC	Limit	Value	%RPD	Limit	Qual
Aluminum	10.6	8 1.0	10		0	107	80-120	0			
Arsenic	9.67	3 0.50	10		0	96.7	80-120	0			
Barium	10.3	5 0.50	10		0	104	80-120	0			
Cadmium	9.74	8 0.50	10		0	97.5	80-120	0			
Calcium	992.	3 50	1000		0	99.2	80-120	0			
Chromium	9.83	2 0.50	10		0	98.3	80-120	0			
Cobalt	9.92	7 0.50	10		0	99.3	80-120	0			
Copper	10.1	2 0.50	10		0	101	80-120	0			
Iron	974.	8 50	1000		0	97.5	80-120	0			
Lead	9.78	6 0.50	10		0	97.9	80-120	0			
Manganese	9.68	1 0.50	10		0	96.8	80-120	0			
Molybdenum	9.98	5 0.50	10		0	99.8	80-120	0			
Nickel	9.8	3 0.50	10		0	98.3	80-120	0			
Potassium	956.	7 50	1000		0	95.7	80-120	0			
Selenium	9.81	3 0.50	10		0	98.1	80-120	0			
Silver	10.2	2 0.50	10		0	102	80-120	0			
Uranium	9.42	9 0.50	10		0	94.3	80-120	0			
Zinc	9.93	7 0.50	10		0	99.4	80-120	0			
LCS	Sample ID: MLCSS1-020113-6752	3			ι	Jnits: mg/ l	Kg	Analysis	Date: 2 /	/6/2013 12	:38 PM
Client ID:		Run ID: ICPMS	05_130206A		Se	qNo: 310 3	3604	Prep Date: 2/4/20	13	DF: 1	
				SPK Ref			Control	RPD Ref		RPD	
Analyte	Resu	lt PQL	SPK Val	Value		%REC	Limit		%RPD	Limit	Qual
Boron	47.9	2 2.5	50		0	95.8	80-120	0			
Sodium	981.	7 50	1000		0	98.2	80-120	0			

Client: Navajo Refining Company

Work Order: 13011005

Boron

Sodium

Note:

Potassium

Project: RO Discharge Sampling

Batch ID: 675	523 Instrument	ID ICPMS05		Method	: SW6020					
MS	Sample ID: 13011005-01	DMS				Units: mg/	Kg	Analysis Date: 2	2/5/2013 03	:22 PM
Client ID: MV	V-116 (1)	Run ID	: ICPMS	05_130205A	Se	eqNo: 310	2207	Prep Date: 2/4/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value %RPD	RPD Limit	Qual
Aluminum		13710	0.84	8.429	12570	13500	75-125	0		SEO
Arsenic		11.71	0.42	8.429	4.385	86.9	75-125	0		
Barium		138.7	0.42	8.429	129.6	107	75-125	0		0
Cadmium		8.001	0.42	8.429	0.4065	90.1	75-125	0		
Calcium		57470	42	842.9	57640	-19.7	75-125	0		SEO
Chromium		22.67	0.42	8.429	14.02	103	75-125	0		
Cobalt		13.02	0.42	8.429	5.519	89	75-125	0		
Copper		18.8	0.42	8.429	11.12	91.1	75-125	0		
Iron		11500	42	842.9	10120	164	75-125	0		SO
Lead		22.81	0.42	8.429	14.66	96.6	75-125	0		
Manganese		381.8	0.42	8.429	383.5	-20	75-125	0		SEO
Molybdenum		6.315	0.42	8.429	0.5853	68	75-125	0		S
Nickel		19.09	0.42	8.429	11.62	88.6	75-125	0		
Selenium		7.95	0.42	8.429	0.9501	83	75-125	0		
Silver		8.085	0.42	8.429	0.05106	95.3	75-125	0		
Uranium		8.095	0.42	8.429	0.408	91.2	75-125	0		
Zinc		46.05	0.42	8.429	37.34	103	75-125	0		0
MS	Sample ID: 13011005-01	DMS			Units: mg/Kg Analysis Date: 2/6				2/6/2013 12	:50 PM
Client ID: MV	V-116 (1)	Run ID	: ICPMS	05_130206A	Se	eqNo: 310 :	3618	Prep Date: 2/4/2013	DF: 2	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value %RPD	RPD Limit	Qual

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

39.78

4808

914.3

4.2

84

84

42.14

842.9

842.9

60.18

3553

168.4

-48.4

149

88.5

75-125

75-125

75-125

0

0

0

S

SO

Client: Navajo Refining Company

Work Order: 13011005

Project: RO Discharge Sampling

Batch ID: 67523	Instrument ID ICPMS05		Method:	SW6020						
MSD Sample	ID: 13011005-01DMSD			ı	Jnits: mg/	'Kg	Analysi	s Date: 2/	5/2013 03	:25 PM
Client ID: MW-116 (1)	Run	ID: ICPMS	05_130205A	Se	eqNo: 310	2208	Prep Date: 2/4/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Aluminum	12110	0.80	7.956	12570	-5790	75-125	13710	12.4	25	SEO
Arsenic	11.34	0.40	7.956	4.385	87.4	75-125	11.71	3.25	25	
Barium	134	0.40	7.956	129.6	54.7	75-125	138.7	3.43	25	SO
Cadmium	7.562	0.40	7.956	0.4065	89.9	75-125	8.001	5.64	25	
Calcium	52910	40	795.6	57640	-594	75-125	57470	8.27	25	SEO
Chromium	20.95	0.40	7.956	14.02	87.1	75-125	22.67	7.88	25	
Cobalt	12.38	0.40	7.956	5.519	86.3	75-125	13.02	5.05	25	
Copper	17.82	0.40	7.956	11.12	84.3	75-125	18.8	5.32	25	
Iron	10370	40	795.6	10120	31.2	75-125	11500	10.3	25	so
Lead	22.24	0.40	7.956	14.66	95.2	75-125	22.81	2.51	25	
Manganese	389.4	0.40	7.956	383.5	74	75-125	381.8	1.96	25	SEO
Molybdenum	5.373	0.40	7.956	0.5853	60.2	75-125	6.315	16.1	25	S
Nickel	18.17	0.40	7.956	11.62	82.4	75-125	19.09	4.89	25	
Selenium	7.14	0.40	7.956	0.9501	77.8	75-125	7.95	10.7	25	
Silver	7.509	0.40	7.956	0.05106	93.7	75-125	8.085	7.4	25	
Uranium	7.518	0.40	7.956	0.408	89.4	75-125	8.095	7.39	25	
Zinc	44.04	0.40	7.956	37.34	84.2	75-125	46.05	4.46	25	0
MSD Sample		Units: mg/Kg			Analysi	6/2013 12	:52 PM			
Client ID: MW-116 (1)	Run	ID: ICPMS	05_130206A	Se	eqNo: 310	3621	Prep Date: 2/4/2	2013	DF: 2	
				SPK Ref		Control	RPD Ref		RPD	

IVISD C	ample ib. 13011003-010141	130				Office. Hig/	ĸy	Allalysis Date. 2/0/2013 12.32			
Client ID: MW-	Client ID: MW-116 (1) Ru		Run ID: ICPMS05_130206A			SeqNo: 3103621		Prep Date: 2/4/2013		DF: 2	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Boron		37.07	4.0	39.78	60.1	18 -58.1	75-125	39.78	7.06	25	S
Potassium		4552	80	795.6	355	53 126	75-125	4808	5.48	25	SO
Sodium		855.4	80	795.6	168	.4 86.4	75-125	914.3	6.65	25	

Note:

Client: Navajo Refining Company

Work Order: 13011005

Project: RO Discharge Sampling

Batch ID: 67	7523	Instrument ID ICPMS05		Method:	SW602	0						
DUP	Sample ID:	13011005-01DDUP				Ur	nits: mg/	Kg	Analysi	s Date: 2/	5/2013 03	:20 PM
Client ID: M	W-116 (1)	Run II	: ICPMS	05_130205A		Seq	No: 310 2	2206	Prep Date: 2/4/2	2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic		4.109	0.42	0		0	0	0-0	4.385	6.5	25	
Barium		122.9	0.42	0		0	0	0-0	129.6	5.34	25	
Cadmium		0.3587	0.42	0		0	0	0-0	0.4065	0	25	J
Chromium		13.06	0.42	0		0	0	0-0	14.02	7.09	25	
Cobalt		5.04	0.42	0		0	0	0-0	5.519	9.08	25	
Copper		10.23	0.42	0		0	0	0-0	11.12	8.3	25	
ron		9434	42	0		0	0	0-0	10120	7.01	25	
Lead		14.13	0.42	0		0	0	0-0	14.66	3.72	25	
Molybdenum	า	0.5423	0.42	0		0	0	0-0	0.5853	7.63	25	
Nickel		10.65	0.42	0		0	0	0-0	11.62	8.76	25	
Selenium		0.8324	0.42	0		0	0	0-0	0.9501	13.2	25	
Silver		U	0.42	0		0	0	0-0	0.05106	0	25	
Jranium		U	0.42	0		0	0		0.408	0	25	
Zinc		34.3	0.42	0		0	0	0-0	37.34	8.48	25	
DUP	Sample ID:	13011005-01DDUP				Ur	nits: mg/	Kg	Analysi	s Date: 2/ 9	6/2013 12	:47 PN
Client ID: M	W-116 (1)	Run II	: ICPMS	05_130206A		Seq	No: 310 :	3614	Prep Date: 2/4/2	2013	DF: 2	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
-									22.42			
Boron		6.159	4.2	0		0	0	0-0	60.18	163	25	R
Potassium		3479	83	0		0	0	0-0	3553	2.09	25	
Sodium		122.9	83	0		0	0	0-0	168.4	31.2	25	R
OUP	Sample ID:	13011005-01DDUP				Ur	nits: mg/	Kg	Analysi	s Date: 2/0	6/2013 03	:01 PN
Client ID: M	W-116 (1)	Run II	: ICPMS	05_130206A		Seq	No: 310 :	3960	Prep Date: 2/4/2	2013	DF: 10	0
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Aluminum		13720	83	0		0	0	0-0	14570	6.05	25	
Calcium		56380	4,200	0		0	0	0-0	60800	7.55	25	
Manganese		355.2	42	0		0	0	0-0	374.9	5.4	25	
	ng samples v	vere analyzed in this batch:	13 01	8011005- D 8011005-	13 03	0110 D 0110	05-	13 06	011005- D 011005-		-	

Client: Navajo Refining Company

Work Order: 13011005

Project: RO Discharge Sampling

Batch ID: 6	7585	Instrument ID HG02		Metho	d: SW747	1A					
MBLK	Sample ID:	GBLKS1-020513-67585				Units: µg/l	K g	Analysi	s Date: 2 /	/5/2013 04	:01 PN
Client ID:		Run I	D: HG02 _	130205A		SeqNo: 310	2354	Prep Date: 2/5/2	2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Mercury		U	3.3								
LCS	Sample ID:	GLCSS1-020513-67585				Units: µg/l	K g	Analysi	s Date: 2	/5/2013 04	:03 PN
Client ID:		Run I	D: HG02 _	130205A		SeqNo: 310	2355	Prep Date: 2/5/2	2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Mercury		332.7	3.3	333.3		0 99.8	85-115	0			
MS	Sample ID:	1301997-01DMS				Units: µg/l	K g	Analysi	s Date: 2/	/5/2013 04	:09 PN
Client ID:		Run I	D: HG02 _	130205A		SeqNo: 310	2358	Prep Date: 2/5/2	2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Mercury		376.9	3.5	354.9	14.7	76 102	85-115	0			
MSD	Sample ID:	1301997-01DMSD				Units: µg/l	K g	Analysi	s Date: 2	/5/2013 04	:11 PN
Client ID:		Run I	D: HG02 _	130205A		SeqNo: 310	2359	Prep Date: 2/5/2	2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Mercury		375.1	3.5	354.5	14.7	76 102	85-115	376.9	0.484	20	
DUP	Sample ID:	1301997-01DDUP				Units: µg/l	K g	Analysi	s Date: 2/	/5/2013 04	:07 PN
Client ID:		Run I	D: HG02 _	130205A		SeqNo: 310	2357	Prep Date: 2/5/2	2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Mercury		15.21	3.6	0		0 0		14.76	3.04	20	
The followi	ing samples v	were analyzed in this batch:	0 ⁻	3011005- 1D 3011005- 9D	03	011005-	06	011005-			

Client: Navajo Refining Company

Work Order: 13011005

Project: RO Discharge Sampling

Batch ID: 67656	Instrument ID SV-6		Metho	d: SW827	70						
MBLK Sample ID: \$	BLKS2-130207-67656				Į	Jnits: µg/l	(g	Analys	sis Date: 2	/7/2013 04	4:24 PN
Client ID:	Run	ID: SV-6_1	30207A		Se	qNo: 310	6635	Prep Date: 2/7/	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	U	6.6									
2-Methylnaphthalene	U	6.6									
Benzo(a)pyrene	U	6.6									
Naphthalene	U	6.6									
Surr: 2,4,6-Tribromopher	nol 104.3	6.6	166.7		0	62.6	36-126	0			
Surr: 2-Fluorobiphenyl	132.1	6.6	166.7		0	79.2	43-125	0			
Surr: 2-Fluorophenol	126.1	6.6	166.7		0	75.7	37-125	0			
Surr: 4-Terphenyl-d14	166.2	6.6	166.7		0	99.7	32-125	0			
Surr: Nitrobenzene-d5	134.1	6.6	166.7		0	80.4	37-125	0			
Surr: Phenol-d6	130.7	6.6	166.7		0	78.4	40-125	0			
LCS Sample ID: S	LCSS2-130207-67656				ι	Jnits: µg/l	(g	Analys	sis Date: 2	/7/2013 04	4:45 PN
Client ID:	Run	ID: SV-6_1	30207A		Se	qNo: 310	6636	Prep Date: 2/7/	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
1-Methylnaphthalene	131.8	6.6	166.7		0	79.1	50-120	0			
2-Methylnaphthalene	133.3	6.6	166.7		0	80	50-120	0			
Benzo(a)pyrene	148.1	6.6	166.7		0	88.8	50-130	0			
Naphthalene	128.1	6.6	166.7		0	76.9	50-125	0			
Surr: 2,4,6-Tribromopher	nol 125.4	6.6	166.7		0	75.2	36-126	0			
Surr: 2-Fluorobiphenyl	128.4	6.6	166.7		0	77	43-125	0			
Surr: 2-Fluorophenol	122.2	6.6	166.7		0	73.3	37-125	0			
Surr: 4-Terphenyl-d14	159.7	6.6	166.7		0	95.8	32-125	0			
Surr: Nitrobenzene-d5	126.5	6.6	166.7		0	75.9	37-125	0			
Surr: Phenol-d6	122.6	6.6	166.7		0	73.5	40-125	0			

Client: Navajo Refining Company

Work Order: 13011005

Project: RO Discharge Sampling

Batch ID: 67656 Instrume	ent ID SV-6		Metho	d: SW8270							
MS Sample ID: 1302140-0	4DMS			l	Jnits: µg/k	(g	Analysis Date: 2/7/2013 07:35 PN				
Client ID:	Run II	D: SV-6_1	30207A	Se	qNo: 310 6	6643	Prep Date: 2/7/	2013	DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua	
1-Methylnaphthalene	129.4	6.6	166.5	6.178	74	50-120	0				
2-Methylnaphthalene	107.7	6.6	166.5	6.039	61	50-120	0				
Benzo(a)pyrene	224.3	6.6	166.5	160.5	38.3	50-130	0			s	
Naphthalene	102.2	6.6	166.5	5.73	57.9	50-125	0				
Surr: 2,4,6-Tribromophenol	91.94	6.6	166.5	0	55.2	36-126	0				
Surr: 2-Fluorobiphenyl	106.7	6.6	166.5	0	64.1	43-125	0				
Surr: 2-Fluorophenol	91.1	6.6	166.5	0	54.7	37-125	0				
Surr: 4-Terphenyl-d14	124.5	6.6	166.5	0	74.8	32-125	0				
Surr: Nitrobenzene-d5	105.2	6.6	166.5	0	63.2	37-125	0				
Surr: Phenol-d6	85.27	6.6	166.5	0	51.2	40-125	0				
MSD Sample ID: 1302140-0	4DMSD			l	Jnits: µg/k	(g	Analysi	s Date: 2/	7/2013 07	:56 PN	
Client ID:	Run II	D: SV-6_1	30207A	Se	qNo: 310 6	6644	Prep Date: 2/7/2	2013	DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua	
1-Methylnaphthalene	183.4	6.6	166.4	6.178	106	50-120	129.4	34.5	30	R	
2-Methylnaphthalene	143.5	6.6	166.4	6.039	82.6	50-120	107.7	28.5	30		
Benzo(a)pyrene	307.6	6.6	166.4	160.5	88.4	50-130	224.3	31.3	30	R	
Naphthalene	132.9	6.6	166.4	5.73	76.4	50-125	102.2	26.1	30		
Surr: 2,4,6-Tribromophenol	101.8	6.6	166.4	0	61.2	36-126	91.94	10.2	30		
Surr: 2-Fluorobiphenyl	123.6	6.6	166.4	0	74.2	43-125	106.7	14.6	30		
Surr: 2-Fluorophenol	108.3	6.6	166.4	0	65.1	37-125	91.1	17.3	30		
Surr: 4-Terphenyl-d14	150.5	6.6	166.4	0	90.4	32-125	124.5	18.9	30		
		0.0	166.4	0	74.7	37-125	105.2	16.7	30		
Surr: Nitrobenzene-d5	124.3	6.6	166.4	U	14.1	37 120	100.2	10.1	30		

The following samples were analyzed in this batch:

Note:

13011005-01D 15D

Client: Navajo Refining Company

Work Order: 13011005

Project: RO Discharge Sampling

Batch ID: R141995	Instrument ID VOA5		Metho	d: SW82 6	60					
MBLK Sample ID: V	BLKS1-020113-R141995				Units: µg/l	K g	Analy	sis Date: 2	/1/2013 0	9:52 AM
Client ID:	Run ID	: VOA5_	130201A		SeqNo: 309	8471	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	U	5.0								
1,1,2,2-Tetrachloroethane	U	5.0								
1,1,2-Trichloroethane	U	5.0								
1,1-Dichloroethane	U	5.0								
1,1-Dichloroethene	U	5.0								
1,2-Dibromoethane	U	5.0								
1,2-Dichloroethane	U	5.0								
Benzene	U	5.0								
Carbon tetrachloride	U	5.0								
Chloroform	U	5.0								
Ethylbenzene	U	5.0								
Methylene chloride	U	10								
Tetrachloroethene	U	5.0								
Toluene	U	5.0								
Trichloroethene	U	5.0								
Vinyl chloride	U	2.0								
Xylenes, Total	U	15								
Surr: 1,2-Dichloroethane-	d4 42.8	0	50		0 85.6	70-128	1	0		
Surr: 4-Bromofluorobenze	ene 46.86	0	50		0 93.7	73-126		0		
Surr: Dibromofluorometha	ane 48.11	0	50		0 96.2	71-128		0		
Surr: Toluene-d8	44.78	0	50		0 89.6	73-127	•	0		

Client: Navajo Refining Company

Work Order: 13011005

Project: RO Discharge Sampling

Batch ID: R141995	Instrument ID VOA5		Method	: SW826	0						
LCS Sample ID: V	/LCSS1-020113-R141995				l	Jnits: µg/k	ζg	Analy	/sis Date:	2/1/2013 0	8:43 AM
Client ID:	Run I): VOA5 _	130201A		Se	qNo: 309 8	3470	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	53.98	5.0	50		0	108	79-124		0		
1,1,2,2-Tetrachloroethane	53.32	5.0	50		0	107	75-123		0		
1,1,2-Trichloroethane	55.87	5.0	50		0	112	79-120		0		
1,1-Dichloroethane	52.6	5.0	50		0	105	75-124		0		
1,1-Dichloroethene	55.13	5.0	50		0	110	80-122		0		
1,2-Dibromoethane	57.09	5.0	50		0	114	79-120		0		
1,2-Dichloroethane	52.14	5.0	50		0	104	73-121		0		
Benzene	50.57	5.0	50		0	101	79-120		0		
Carbon tetrachloride	45.29	5.0	50		0	90.6	74-126		0		
Chloroform	55.04	5.0	50		0	110	78-120		0		
Ethylbenzene	54.99	5.0	50		0	110	80-122		0		
Methylene chloride	51.62	10	50		0	103	70-123		0		
Tetrachloroethene	47.09	5.0	50		0	94.2	80-121		0		
Toluene	49.54	5.0	50		0	99.1	79-120		0		
Trichloroethene	52.16	5.0	50		0	104	80-121		0		
Vinyl chloride	61.5	2.0	50		0	123	76-126		0		
Xylenes, Total	150.9	15	150		0	101	80-120		0		
Surr: 1,2-Dichloroethane	-d4 51.49	0	50		0	103	70-128		0		
Surr: 4-Bromofluorobenz	rene 47.86	0	50		0	95.7	73-126		0		
Surr: Dibromofluorometh	ane 51.61	0	50		0	103	71-128		0		
Surr: Toluene-d8	43.85	0	50		0	87.7	73-127		0		

0

Client: Navajo Refining Company

Work Order: 13011005

Surr: Toluene-d8

Note:

Project: RO Discharge Sampling

Batch ID: R141995	Instrument ID VOA5		Method	SW8260	0						
MS Sample ID: 1	1301997-01AMS				Uı	nits: µg/k	(g	Analys	sis Date: 2	/1/2013 1	1:46 AM
Client ID:	Ru	in ID: VOA5_	130201A		Sec	No: 309 8	B546	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	51.53	5.0	50		0	103	79-124	C			
1,1,2,2-Tetrachloroethane	45.86	5.0	50		0	91.7	75-123	0	1		
1,1,2-Trichloroethane	56	5.0	50		0	112	79-120	0			
1,1-Dichloroethane	49.56	5.0	50		0	99.1	75-124	0	1		
1,1-Dichloroethene	54.01	5.0	50		0	108	80-122	0			
1,2-Dibromoethane	49.35	5.0	50		0	98.7	79-120	0	1		
1,2-Dichloroethane	51.25	5.0	50		0	103	73-121	0			
Benzene	52.11	5.0	50		0	104	79-120	0	1		
Carbon tetrachloride	46.06	5.0	50		0	92.1	74-126	0			
Chloroform	48.72	5.0	50		0	97.4	78-120	0	1		
Ethylbenzene	50.85	5.0	50		0	102	80-122	0			
Methylene chloride	48.37	10	50		0	96.7	70-123	O	1		
Tetrachloroethene	43.7	5.0	50		0	87.4	80-121	0			
Toluene	53.36	5.0	50		0	107	79-120	O	1		
Trichloroethene	51.31	5.0	50		0	103	80-121	0			
Vinyl chloride	55.22	2.0	50		0	110	76-126	0	1		
Xylenes, Total	146.8	15	150		0	97.9	80-120	O			
Surr: 1,2-Dichloroethane	e-d4 49.29	0	50		0	98.6	70-128	O	1		
Surr: 4-Bromofluorobenz	zene 49	0	50		0	98	73-126	0			
Surr: Dibromofluorometh	nane 49.78	0	50		0	99.6	71-128	0	1		

51.55

0

50

0

103

73-127

Client: Navajo Refining Company

Work Order: 13011005

Project: RO Discharge Sampling

Batch ID: R141995	Instrument ID VOA5		Method	: SW826	0						
MSD Sample ID:	1301997-01AMSD				Į	Jnits: µg/l	K g	Analys	is Date: 2/	1/2013 12	:09 PM
Client ID:	R	un ID: VOA5_	130201A		Se	eqNo: 309	8547	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	54.79	5.0	50		0	110	79-124	51.53	6.13	30	
1,1,2,2-Tetrachloroethane	44.09	5.0	50		0	88.2	75-123	45.86	3.93	30	
1,1,2-Trichloroethane	54.9	5.0	50		0	110	79-120	56	1.98	30	
1,1-Dichloroethane	51.87	5.0	50		0	104	75-124	49.56	4.56	30	
1,1-Dichloroethene	52.81	5.0	50		0	106	80-122	54.01	2.24	30	
1,2-Dibromoethane	48.8	5.0	50		0	97.6	79-120	49.35	1.12	30	
1,2-Dichloroethane	46.29	5.0	50		0	92.6	73-121	51.25	10.2	30	
Benzene	51.81	5.0	50		0	104	79-120	52.11	0.568	30	
Carbon tetrachloride	47.75	5.0	50		0	95.5	74-126	46.06	3.61	30	
Chloroform	53.56	5.0	50		0	107	78-120	48.72	9.45	30	
Ethylbenzene	55.58	5.0	50		0	111	80-122	50.85	8.9	30	
Methylene chloride	53.37	10	50		0	107	70-123	48.37	9.82	30	
Tetrachloroethene	45.21	5.0	50		0	90.4	80-121	43.7	3.39	30	
Toluene	61.14	5.0	50		0	122	79-120	53.36	13.6	30	S
Trichloroethene	51.76	5.0	50		0	104	80-121	51.31	0.863	30	
Vinyl chloride	58.35	2.0	50		0	117	76-126	55.22	5.51	30	
Xylenes, Total	157.7	15	150		0	105	80-120	146.8	7.13	30	
Surr: 1,2-Dichloroethane	e-d4 48.55	0	50		0	97.1	70-128	49.29	1.51	30	
Surr: 4-Bromofluorobenz	zene 46.51	0	50		0	93	73-126	49	5.21	30	
Surr: Dibromofluorometh	nane 48.96	0	50		0	97.9	71-128	49.78	1.67	30	
Surr: Toluene-d8	55.55	0	50		0	111	73-127	51.55	7.47	30	

The following samples were analyzed in this batch:

13011005-	13011005-	
01A	15A	

Client: Navajo Refining Company

Work Order: 13011005

Project: RO Discharge Sampling

Batch ID: R142113	Instrument ID VOA4		Metho	d: SW82 6	60					
MBLK Sample ID: V	BLKW-130204-R142113				Units: µg	/L	Anal	ysis Date: 2	/4/2013 1	1:16 AM
Client ID:	Run I	D: VOA4 _	130204A		SeqNo: 31	00918	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	U	1.0								
1,1,2,2-Tetrachloroethane	U	1.0								
1,1,2-Trichloroethane	U	1.0								
1,1-Dichloroethane	U	1.0								
1,1-Dichloroethene	U	1.0								
1,2-Dibromoethane	U	1.0								
1,2-Dichloroethane	U	1.0								
Benzene	U	1.0								
Carbon tetrachloride	U	1.0								
Chloroform	U	1.0								
Ethylbenzene	U	1.0								
Methylene chloride	U	2.0								
Tetrachloroethene	U	1.0								
Toluene	U	1.0								
Trichloroethene	U	1.0								
Vinyl chloride	U	1.0								
Xylenes, Total	U	1.0								
Surr: 1,2-Dichloroethane-	-d4 43.85	1.0	50		0 87.7	71-125	5	0		
Surr: 4-Bromofluorobenze	ene 49.08	1.0	50		0 98.2	70-125	5	0		
Surr: Dibromofluorometh	ane 48.08	1.0	50		0 96.2	74-125	5	0		
Surr: Toluene-d8	48.41	1.0	50		0 96.8	78-123	}	0		

Client: Navajo Refining Company

Work Order: 13011005

Vinyl chloride

Xylenes, Total

Note:

Surr: 1,2-Dichloroethane-d4

Surr: 4-Bromofluorobenzene

Surr: Dibromofluoromethane

Surr: Toluene-d8

Project: RO Discharge Sampling

Batch ID: R142113	Instrument ID VOA4		Metho	d: SW8260						
LCS Sample ID:	VLCSW-130204-R142113				Units: µg/l	_	Analys	is Date: 2	/4/2013 10	D:03 AM
Client ID:	Run I	ID: VOA4_	130204A	S	eqNo: 310	0916	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	54.47	1.0	50	0	109	80-120	0			
1,1,2,2-Tetrachloroethane	46.02	1.0	50	0	92	74-123	0			
1,1,2-Trichloroethane	48.93	1.0	50	0	97.9	80-120	0			
1,1-Dichloroethane	46.62	1.0	50	0	93.2	80-120	0			
1,1-Dichloroethene	53.04	1.0	50	0	106	80-120	0			
1,2-Dibromoethane	53.39	1.0	50	0	107	80-120	0			
1,2-Dichloroethane	49.07	1.0	50	0	98.1	79-120	0			
Benzene	48.6	1.0	50	0	97.2	80-120	0			
Carbon tetrachloride	58.54	1.0	50	0	117	79-120	0			
Chloroform	46.57	1.0	50	0	93.1	80-120	0			
Ethylbenzene	48.8	1.0	50	0	97.6	80-120	0			
Methylene chloride	47.71	2.0	50	0	95.4	75-125	0			
Tetrachloroethene	53.4	1.0	50	0	107	80-120	0	ı		
Toluene	48.37	1.0	50	0	96.7	80-121	0			
Trichloroethene	53.7	1.0	50	0	107	80-120	0	ı		

48.96

142.5

44.17

52.31

49.72

48.59

1.0

1.0

1.0

1.0

1.0

1.0

50

150

50

50

50

50

0

0

0

0

0

0

97.9

95

88.3

105

99.4

97.2

75-125

80-124

71-125

70-125

74-125

78-123

0

0

0

0

0

0

Client: Navajo Refining Company

Work Order: 13011005

Project: RO Discharge Sampling

Batch ID: R142113 Instrument ID VOA4	Method: SW8260
--------------------------------------	----------------

LCSD Sample ID: VLCSDW-1	30204-R142113				Units: µg/I	_	Analys	is Date: 2/	4/2013 10):27 AN
Client ID:	Run II	D: VOA4 _	130204A	Se	eqNo: 310	0917	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
1,1,1-Trichloroethane	51.78	1.0	50	0	104	80-120	54.47	5.06	20	
1,1,2,2-Tetrachloroethane	46.55	1.0	50	0	93.1	74-123	46.02	1.14	20	
1,1,2-Trichloroethane	48.97	1.0	50	0	97.9	80-120	48.93	0.0875	20	
1,1-Dichloroethane	44.74	1.0	50	0	89.5	80-120	46.62	4.11	20	
1,1-Dichloroethene	51.9	1.0	50	0	104	80-120	53.04	2.16	20	
1,2-Dibromoethane	53.91	1.0	50	0	108	80-120	53.39	0.979	20	
1,2-Dichloroethane	48.06	1.0	50	0	96.1	79-120	49.07	2.09	20	
Benzene	47	1.0	50	0	94	80-120	48.6	3.35	20	
Carbon tetrachloride	56.1	1.0	50	0	112	79-120	58.54	4.26	20	
Chloroform	45.18	1.0	50	0	90.4	80-120	46.57	3.02	20	
Ethylbenzene	46.79	1.0	50	0	93.6	80-120	48.8	4.2	20	
Methylene chloride	46.38	2.0	50	0	92.8	75-125	47.71	2.83	20	
Tetrachloroethene	50.41	1.0	50	0	101	80-120	53.4	5.75	20	
Toluene	46.08	1.0	50	0	92.2	80-121	48.37	4.84	20	
Trichloroethene	52.04	1.0	50	0	104	80-120	53.7	3.14	20	
Vinyl chloride	46.66	1.0	50	0	93.3	75-125	48.96	4.81	20	
Xylenes, Total	138	1.0	150	0	92	80-124	142.5	3.19	20	
Surr: 1,2-Dichloroethane-d4	43.85	1.0	50	0	87.7	71-125	44.17	0.739	20	
Surr: 4-Bromofluorobenzene	51.57	1.0	50	0	103	70-125	52.31	1.41	20	
Surr: Dibromofluoromethane	48.7	1.0	50	0	97.4	74-125	49.72	2.09	20	
Surr: Toluene-d8	48.27	1.0	50	0	96.5	78-123	48.59	0.661	20	

Client: Navajo Refining Company

Work Order: 13011005

Project: RO Discharge Sampling

Batch ID: R142113 Instrument ID VOA4	Method:	SW8260
--------------------------------------	---------	--------

MS Sample ID: 1302069-0	1AMS				Units: µg/l	L	Analys	sis Date: 2	/4/2013 0	1:41 PN
Client ID:	Run II	D: VOA4 _	130204A	S	eqNo: 310	0924	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	56.87	1.0	50	0	114	80-120	()		
1,1,2,2-Tetrachloroethane	45.23	1.0	50	0	90.5	74-123	()		
1,1,2-Trichloroethane	50.26	1.0	50	0	101	80-120	()		
1,1-Dichloroethane	48.56	1.0	50	0	97.1	80-120	()		
1,1-Dichloroethene	57.49	1.0	50	0	115	80-120	()		
1,2-Dibromoethane	53.79	1.0	50	0	108	80-120	()		
1,2-Dichloroethane	50.8	1.0	50	0	102	79-120	()		
Benzene	51.17	1.0	50	0	102	80-120	()		
Carbon tetrachloride	61.34	1.0	50	0	123	79-120	()		S
Chloroform	49.2	1.0	50	0	98.4	80-120	()		
Ethylbenzene	50.6	1.0	50	0	101	80-120	()		
Methylene chloride	49.13	2.0	50	0	98.3	75-125	()		
Tetrachloroethene	55.78	1.0	50	0	112	80-120	()		
Toluene	49.91	1.0	50	0	99.8	80-121	()		
Trichloroethene	57.43	1.0	50	0	115	80-120	()		
Vinyl chloride	53.66	1.0	50	0	107	75-125	()		
Xylenes, Total	148.5	1.0	150	0	99	80-124	()		
Surr: 1,2-Dichloroethane-d4	44.59	1.0	50	0	89.2	71-125	()		
Surr: 4-Bromofluorobenzene	50.99	1.0	50	0	102	70-125	()		
Surr: Dibromofluoromethane	49.65	1.0	50	0	99.3	74-125	()		
Surr: Toluene-d8	48.21	1.0	50	0	96.4	78-123	()		

Navajo Refining Company

Work Order: 13011005

Client:

Project: RO Discharge Sampling

Batch ID: R142113 Instrument ID VOA4 Method: SW8260

MSD Sample ID: 1302069-0	1AMSD				Units: µg/l	L	Analysi	s Date: 2/	4/2013 02	2:06 PN
Client ID:	Run II	D: VOA4 _	130204A	S	eqNo: 310	0925	Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
1,1,1-Trichloroethane	59.48	1.0	50	0	119	80-120	56.87	4.49	20	
1,1,2,2-Tetrachloroethane	47.09	1.0	50	0	94.2	74-123	45.23	4.04	20	
1,1,2-Trichloroethane	51.43	1.0	50	0	103	80-120	50.26	2.29	20	
1,1-Dichloroethane	50.19	1.0	50	0	100	80-120	48.56	3.31	20	
1,1-Dichloroethene	60.32	1.0	50	0	121	80-120	57.49	4.82	20	S
1,2-Dibromoethane	56.01	1.0	50	0	112	80-120	53.79	4.04	20	
1,2-Dichloroethane	52.53	1.0	50	0	105	79-120	50.8	3.34	20	
Benzene	52.17	1.0	50	0	104	80-120	51.17	1.94	20	
Carbon tetrachloride	63.38	1.0	50	0	127	79-120	61.34	3.27	20	S
Chloroform	50.81	1.0	50	0	102	80-120	49.2	3.21	20	
Ethylbenzene	51.95	1.0	50	0	104	80-120	50.6	2.63	20	
Methylene chloride	51.27	2.0	50	0	103	75-125	49.13	4.28	20	
Tetrachloroethene	57.11	1.0	50	0	114	80-120	55.78	2.36	20	
Toluene	50.87	1.0	50	0	102	80-121	49.91	1.91	20	
Trichloroethene	58.72	1.0	50	0	117	80-120	57.43	2.21	20	
Vinyl chloride	54.84	1.0	50	0	110	75-125	53.66	2.17	20	
Xylenes, Total	151	1.0	150	0	101	80-124	148.5	1.7	20	
Surr: 1,2-Dichloroethane-d4	44.99	1.0	50	0	90	71-125	44.59	0.903	20	
Surr: 4-Bromofluorobenzene	50.73	1.0	50	0	101	70-125	50.99	0.509	20	
Surr: Dibromofluoromethane	50.29	1.0	50	0	101	74-125	49.65	1.28	20	
Surr: Toluene-d8	48.15	1.0	50	0	96.3	78-123	48.21	0.13	20	

The following samples were analyzed in this batch:

Note:

13011005-16A QC BATCH REPORT

Client: Navajo Refining Company

Work Order: 13011005

Project: RO Discharge Sampling

Batch ID: 67	7564 Instrument ID UV-2450		Method	: SW901	4	(Dissolv	e)			
MBLK	Sample ID: WBLKS1-020413-67564				Units: m	g/Kg	Analysis Da	ate: 2/4/2013 0	1:30 PN	
Client ID:	Run	ID: UV-245	0_130204B		SeqNo: 31	00816	Prep Date: 2/4/2013	B DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%RE0	Control Limit	RPD Ref Value %F	RPD RPD Limit	Qua	
Cyanide	U	2.0								
LCS	Sample ID: WLCSS1-020413-67564				Units: m	g/Kg	Analysis Da	ate: 2/4/2013 0	4/2013 01:30 PM	
Client ID:	Run	ID: UV-245	0_130204B		SeqNo: 31	00817	Prep Date: 2/4/2013	B DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%RE0	Control Limit	RPD Ref Value %F	RPD Limit	Qua	
Cyanide	8.45	2.0	10		0 84.5	80-120	0			
LCSD	Sample ID: WLCSDS1-020413-67564				Units: m	g/Kg	Analysis Da	ate: 2/4/2013 0	1:30 PN	
Client ID:	Run	ID: UV-245	0_130204B		SeqNo: 31	00821	Prep Date: 2/4/2013	B DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%RE0	Control Limit	RPD Ref Value %F	RPD RPD Limit	Qua	
Cyanide	8.55	2.0	10		0 85.5	80-120	8.45	1.18 30		
MS	Sample ID: 13011005-03DMS				Units: m	g/Kg	Analysis Da	ate: 2/4/2013 0	1:30 PN	
Client ID: M	W-116 (5) Run	ID: UV-245	0_130204B		SeqNo: 31	00819	Prep Date: 2/4/2013	B DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%RE0	Control Limit	RPD Ref Value %F	RPD RPD Limit	Qua	
Cyanide	8.837	1.8	9.064	0.314	19 94	75-125	0			
The followi	ng samples were analyzed in this batch	: 13	3011005-							

Client: Navajo Refining Company

Work Order: 13011005

Project: RO Discharge Sampling

Batch ID: 6	7583 Instrument ID UV	V-2450		Method	d: SW901	4		(Dissolve	e)			
MBLK	Sample ID: WBLKS1-020513-	67583				Uı	nits: mg/	Kg	Analy	ysis Date: 2	/5/2013 04	:30 PN
Client ID:		Run II	D: UV-245	0_130205C		Sec	No: 310 :	3414	Prep Date: 2/	5/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide		U	2.0									
LCS	Sample ID: WLCSS1-020513-	67583				Uı	nits: mg/	Kg	Analy	Analysis Date: 2/5/2013 04:30 P		
Client ID:		Run II	D: UV-245	0_130205C		Sec	No: 310	3415	Prep Date: 2/	5/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide		9.05	2.0	10		0	90.5	80-120		0		
LCSD	Sample ID: WLCSDS1-020513	3-67583				Uı	nits: mg/	Kg	Analy	ysis Date: 2	/5/2013 04	:30 PN
Client ID:		Run II	D: UV-245	0_130205C		Sec	No: 310	3437	Prep Date: 2/	5/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide		8.9	2.0	10		0	89	80-120	9.0)5 1.67	30	
MS	Sample ID: 1301997-09DMS					Uı	nits: mg/	Kg	Analy	ysis Date: 2	/5/2013 04	:30 PN
Client ID:		Run II	D: UV-245	0_130205C		Sec	No: 310	3436	Prep Date: 2/	5/2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Cyanide		9.495	1.9	9.308	0.0961	11	101	75-125		0		
The followi	ing samples were analyzed in th	his batch:	01	8011005-	06	0110		06	011005-			

Client: Navajo Refining Company

Work Order: 13011005

Project: RO Discharge Sampling

Batch ID: 67633	Instrument ID ICS2100		Method	: E300			(Dissolve	e)			
MBLK Sample ID:	WBLKS1-67633				U	nits: mg/	Kg	Analysi	s Date: 2	/5/2013 07	':11 PN
Client ID:	Run	ID: ICS210	0_130205C		Sec	qNo: 310 :	3858	Prep Date: 2/5/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride	U	5.0									
Fluoride	0.64	1.0									J
Nitrogen, Nitrate (As N)	U	1.0									
Nitrogen, Nitrite (As N)	U	1.0									
Sulfate	U	5.0									
Surr: Selenate (surr)	45.24	1.0	50		0	90.5	85-115	0			
LCS Sample ID:	WLCSS1-67633				U	nits: mg/	Kg	Analysi	s Date: 2	/5/2013 07	:25 PN
Client ID:	Run	ID: ICS210	0_130205C		Sec	qNo: 310 :	3859	Prep Date: 2/5/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Chloride	219.8	5.0	200		0	110	90-110	0			
Fluoride	37.72	1.0	40		0	94.3	90-110	0			
Nitrogen, Nitrate (As N)	43.14	1.0	40		0	108	90-110	0			
Nitrogen, Nitrite (As N)	43.82	1.0	40		0	110	90-110	0			
Sulfate	208.7	5.0	200		0	104	90-110	0			
Surr: Selenate (surr)	47.79	1.0	50		0	95.6	85-115	0			
MS Sample ID:	1302026-21DMS				U	nits: mg/	Kg	Analysi	s Date: 2	/6/2013 01	:29 AN
Client ID:	Run	ID: ICS210	0_130205C		Sec	qNo: 310 :	3884	Prep Date: 2/5/2	2013	DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value		%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qua
Chloride	126.4	5.0	98.97	16	5.2	111	75-125	0			
Fluoride	20.19	0.99	19.79	2.63		88.7	75-125	0			
Nitrogen, Nitrate (As N)	20.76	0.99	19.79		0	105	75-125	0			
Nitrogen, Nitrite (As N)	21.36	0.99	19.79		0	108	75-125	0			
Sulfate	319.3	5.0	98.97	213	3.5	107	75-125	0			
Surr: Selenate (surr)	42.66	0.99	49.48		0	86.2	80-120	0			

Navajo Refining Company

Work Order: 13011005

Client:

Project: RO Discharge Sampling

QC BATCH REPORT

Batch ID: 6763	33 Instrum	ent ID ICS2100		Method	: E300	-	(Dissolve)			
MSD	Sample ID: 1302026- 2	21DMSD				Units: mg/	Kg	Analys	is Date: 2/	6/2013 01	:43 AM
Client ID:		Run ID:	ICS210	0_130205C	S	eqNo: 310 :	3885	Prep Date: 2/5/ 2	2013	DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chloride		124.6	4.9	98.65	16.2	110	75-125	126.4	1.49	20	
Fluoride		19.9	0.99	19.73	2.638	87.5	75-125	20.19	1.45	20	
Nitrogen, Nitra	te (As N)	20.57	0.99	19.73	0	104	75-125	20.76	0.942	20	
Nitrogen, Nitrit	e (As N)	20.98	0.99	19.73	0	106	75-125	21.36	1.77	20	
Sulfate		315.2	4.9	98.65	213.5	103	75-125	319.3	1.29	20	
Surr: Selena	ate (surr)	42	0.99	49.33	0	85.1	80-120	42.66	1.58	20	
The following	samples were analy	zed in this batch:	13 01	011005- D	1301 03D	1005-	130 06l	011005- D			
			13 09	8011005- D	1301 12D	1005-	130 151	011005- D			

Client: Navajo Refining Company

Work Order: 13011005

Project: RO Discharge Sampling

QC BATCH REPORT

Batch ID: R1	142103	Instrument ID Ba	lance1		Metho	d: SW355	0		(Dissolve)	l .					
DUP	Sample ID:	13011005-15DDUF)				Units:	wt%	,)	Analysi	s Date: 2/	1/2013 01	:00 PM		
Client ID: M	W-116 (25)		Run ID	: BALAN	CE1_13020	1B	SeqNo	310	0807	Prep Date:					
Analyte		I	Result	PQL	SPK Val	SPK Ref Value	%F	REC	Control Limit	RPD Ref Value	%RPD		Qual		
Percent Mois	sture		23.71	0.010	0		0	0	0-0	23.23	2.05	20			
The following	ng samples v	vere analyzed in th	nis batch:	01 13 04 13 07 13 10	3011005- IA 3011005-	02 13 05 13 08 13	011005- A 011005- A 011005- A 011005-		03D 130 06D 130 09D 130 12D	11005-) 11005-) 11005-) 11005-					

ALS Environmental

Date: 13-Feb-13

Client: Navajo Refining Company
Project: RO Discharge Sampling

QUALIFIERS,
ACRONIZACIO

WorkOrder: 13011005 ACRONYMS, UNITS

workOrder:	15011005
Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
В	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
Н	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
Acronym	<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
Units Reported	<u>Description</u>
$\mu g/Kg$	Micrograms per Kilogram
mg/Kg	Milligrams per Kilogram
mg/L	Milligrams per Liter
wt%	

ALS Environmental

Sample Receipt Checklist

Client Name:	NAVAJO REFINING			Date/Time	Received:	31-Jan-13	<u>3 09:10</u>					
Work Order:	<u>13011005</u>			Received b	y:	<u>RDH</u>						
Checklist comp	pleted by Lohnnie B. Wlenesignature	31-	-Jan-13 Date	Reviewed by:	Patricia eSignature	L. Lyne	h	01-Feb-13 Date				
Matrices: Carrier name:	soil/water FedEx Priority Overnight	'						'				
Shipping conta	iner/cooler in good condition?		Yes 🗸	No 🗌	Not Pres	ent						
Custody seals i	intact on shipping container/coole	er?	Yes 🗹	No 🗌	Not Pres	ent \square						
Custody seals	intact on sample bottles?		Yes \square	No 🗆	Not Pres	ent 🗹						
Chain of custoo	dy present?		Yes 🗹	No 🗌								
Chain of custoo	dy signed when relinquished and	received?	Yes 🗸	No 🗌								
Chain of custoo	dy agrees with sample labels?		Yes 🗹	No 🗌								
Samples in pro	per container/bottle?		Yes 🗹	No 🗆								
Sample contain	ners intact?		Yes 🗹	No 🗆								
Sufficient samp	ole volume for indicated test?		Yes 🗹	No 🗌								
All samples rec	eived within holding time?		Yes 🗹	No 🗌								
Container/Tem	p Blank temperature in compliand	ce?	Yes 🗹	No 🗌								
)/Thermometer(s):		1.4 C/uc		IR	<u>1</u>						
Cooler(s)/Kit(s)	:		4028									
Date/Time sam	ple(s) sent to storage:		1/31/13 14:	<u>30</u>								
Water - VOA vi	als have zero headspace?		Yes 🗸	No 🗀	No VOA vials	submitted						
Water - pH acc	eptable upon receipt?		Yes 🗹	No 🗆	N/A							
pH adjusted? pH adjusted by	:		Yes 🗌	No 🗹	N/A							
Login Notes:	Trip blank received, but not	on COC. Ra-226/228	8 & cyanide	not on COC. Inc	correct metals	list on COC	<u>.</u>					
	========					===						
	.d.	Data Cantantant		D	0444-							
Client Contacte	eu.	Date Contacted:		Person	Contacted:							
Contacted By:		Regarding:										
Comments:												
CorrectiveAction	on:						000	Dans 4 of 4				

(ALS)
Environmental

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

Chain of Custody Form

Page 1 of 2

COC ID: 41210

Cincinnati, OH +1 513 733 5336

□ Everett, WA +1 425 356 2600

Fort Collins, CO + 1 970 490 1511

13011005

NAVAJO REFINING: Navajo Refining Company

Project: RO Discharge Sampling



Copyright 2011 by ALS Group

	ALS Project Manager:																	
	tomer Information				nformatio			Parameter/Method Request for Analysis A NOC (8260) NW GW List										
Purchase Order			Project N	Vame Ro D	Discherg	e15.	milar	Α,	<u> </u>		326	∞	$\mathcal{N}_{\mathcal{C}}$	<u>ی د</u>	1W	List		
Work Order	<u> </u>		Project Nur		28823		, J	в	GRO		8015		J					
Company Name	Marajo Re	ctining	Bill To Comp	pany Nav	aja Res	rini ng	Co	c 7	Dai		801)					
Send Report To			Invoice .		sect C			D C	DORO (8015 M)									
Address			Adc	dress 50				ELL SYOC (B270) NW GWList					10					
City/State/Zip	A		City/Stat	City/State/Zip				G \	G Dissolved Metals (6020/7000) RCRAS									
Phone	Adesia, N	<u>M</u>	***************************************	And the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second s						,	<u>d /~</u>	10-10	15 (602	0/71	Trac	(KC+"	KH0
Fax									D									
e-Mail Address			e-Mail Add	Fax 575-746-5421 1 Moisture														
No.	Sample Description		Dinis been not stateen.	esprive II. Tagaine di versi esprive di					1	1 .	H. Kal	Tripic	منتهر مما	Tage	largespace	Program	<u> </u>	Togana
	<u>yak mangaji bilan din kita ya maji baji, kita</u>		Date	Time	Matrix	Pres.		. A	В	C	D	`E	F	G	н		J	Hold
[25 25 55 55]	9-116 Q		1/29/13	1605	Soil (↓	15	<u> </u>	\perp_X		X	X	×	n		X	 '	
returie de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Companya de la Company	N-116 (3)	<u> </u>	1/29/13	1618		1		<u> </u>	<u> </u>		ļ <u>.</u>			ļ		X	ļ ¹	
	N 116 (5)		1/29/13	1632		11	5	169	8	1/2	及	10	X	78	<u> </u>	メ	<u> </u>	ļ
5000000	W-116 (7)		1/30/13	<u> </u>	·····		1 1						<u> </u>	<u> </u>		X	ļ	<u> </u>
	W-116 (9)		1/30/13	০৪১১		$\perp \perp$	<u> </u>	ļ <u>.</u>	<u> </u>		.,					X	<u> </u> '	
5.1.07.1.1.1.	W-116 (10)		1/30/13	390Z		$\perp \perp$	5	B	The	4	×	S	×	X2		X		
7 11	W-116 (11)		1/36/13	0905			1			<u> </u>				<u> </u>		X	·	
8 M.	(E1) 211-(13)		1/36/13	<u>เ</u> วิ <i>ง</i> ร		-										X		
	100-116 (5)		1/30/13	0710			5	A	1/2	1/4	2/3	4	人	R		X		
10 /	W-116 (17)		1/3=113	6712	1											X]	
Sampler(s): Please Pr	nt & Sign		Shipm	Shipment Method: Required Turnaround Time: Other Results Due Date: STD 10 Wk Days 5 Wk Days 24 Hour														
Relinquished by Eic Beggers		Date: 1 30 13	1300	Received by:			21.		tes: D.,	7.17	4T, \); _{ss}	olved	Πe	+= 5	Field) Fil	tered
Relinquished by:	: :	Date:	Time:	Received by (La	bordtory):	11011	12/91	N_{c}	ιο,er Ter	mr. i	and the state of			x Belov	N)			
	stranda Vanda seessi kelaga seessi kala selesti.			W_`	71/2	11511	12011	4		<u>""[:</u>		~~~~~~	Standa	~~~~~~~~				
Logged by (Laboratory):		Date:	Time:	Checkedby (Lab	ocratory);	a koma d	0.000000			 				C + Raw 6 CLP-1				
Preservative Key: 1-	-HCL 2-HNO3 3-H	2SO4 4-NaOH	5-Na2S2O3 6	-NaHSO4 7	Other 8-	4 degree	s C 9-50	35	******		Lev		3 11 041	J CLF-	LIKE			

A .	
AND THE	
ACCEPT TOTAL	
ANNA MANA	
ASSESS TO SECOND	1
/ BA 11	
(Marie and)	
` ,	

Chain of Custody Form

Page 2 of 2

COC ID:

Cincinnati, OH +1 513 733 5336

41190

Everett, WA + 1 425 356 2600

Fort Collins, CO +1 970 490 1511

☐ Houston, TX +1 281 530 5656

Holland, Mf +1 616 399 6070

Salt Lake City, UT +1 801 266 7700 Spring City, PA +1 610 948 4903

Middletown, PA +1 717 944 5541

York, PA + 1 717 505 5280

	ENU	ronmen	leai -			ALS Pro	ject M	anager:					Street Street	Work	Order	#:		13	0//	100
	Cust	omer Information				Inform						·					t for A	·	\$	
Р	urchase Order			Project N	vame RC	Discl	1019	2/50	upling	Α	VC	C 1	820	60)	N	MC	TW.	List		
	Work Order			Project Nu		12	প্রর্ত্ত	73	1)	В	GP	0	(80	% अ)					
C	ompany Name	Navajo Re	fining	Bill To Com	pany N.	wais	Re	fine	(G	С	100	30	(8	015	21)					
S	end Report To		mbs J	Invoice	and the second	ober			. 1	D	P ORD (801514)									
	Address		1 Main	Add	Address STIFOST Mein E						LL SVOC (B270) NM GW List Total Metals (602017000) RCRA 8									
	City/State/Zip	Artesia, N	IM	City/Stat	e/Zip 🗘	rtcs:	1. N	M		G							0/70			
	Phone			P	A - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 - 4 -	75-				н -		5				· · · · · · · · · · · · · · · · · · ·			***************************************	-
	Fax		:		Fax 5					1	Moi		(~ t ~							
	-Mail Address			e-Mail Ado				**************************************		J								,		
No.		Sample Description		Daté	Time	M	atrix	Pres.	# Bottles	А	В	С	D	E	F	G	н	1	J	Hold
1	Mw-1	u6 (11)		1/30/13	O93	5 5	51	-	١									Х		
2	,	(05) 211		1 1	O1Zc		1	1	5	3/2	8	级	K	孜	Х	鹂		χ		
3	-	-116 (21)			O93	0 .	<i>j</i>		1									X		÷
4	MW.	-116 (23)			093)												¥		
5	Mw-	116 (25)			୍ରମଞ୍ଚ				5	・メ	×	X	х	×	×	4		X		
6													4							
7													-							
8																				
9																				
10																				
/	er(s): Please Pr	3		Shipm	ent Metho	i :		uired Tu STD 10 W	irnaround k Days [Time:] 5 Wk			Other k Days	24	Hour	Re	sults Du	e Date:		
Relinqui	shed by:		1 . 1	Time:	Received by						otes:			_			. }	، سر	i [11
Palipaul	<u>c Deg</u>	ressen	1/30/13	1300	Dona X Dal III.	// Shalatan				1	o Da	77/	77,1	<u> </u>	o luec	1 101	etals	riela	<u>.</u> } }	ltered
rvennuli	siled by.		Date:	Time:	Received by	(rapotator)	_)	311	3/9	IQ°	oc.er Ter	~ <u>~</u>		ige: (Cr vel II:			w)		<u> Parist</u>	
Logged I	y (Laboratory):		Date:	Time:	Checked by	Laboratory); };	ΗΨ	<u> </u>			-				C + Rav	v Data			
																6 CLP-				
Presen	/ative Key: 1	-HCL 2-HNO3 3-H	2504 4-NaOH	5-Na2S2O3 6	-NaHSO4	7-Other	8-4	degrees	C 9-50	35			Ot	her: _						

Note: Any changes must be made in writing once samples and COC Form have been submitted to ALS Environmental.

Copyright 2011 by ALS Group



Da

Na

Ca



ALS Environmental

10450 Stanciiff Rd., Suite 210 Houston, Texas 77099 Tal. +1 281 530 5656 Fax. +1 281 530 5887 CUSTODY SEAL

te: 1-30-2013 Time: 1245

me: Ben McKenne

mpany: ARCADK



Appendix D

Data Validation Reports

DATA VALIDATION CHECKLIST

NAVAJO REFINING RO Discharge Sampling

Sample Team:	ARCADIS
	ARCADIS
Sample Matrix:	Soil
Analytical Laboratory;	ALS Environmental
Laboratory Work Order No.:	1301997
Lab Project Manager:	Sonia West
Analyses:	VOCs, SVOCs, TPH, Metals, Mercury, Cyanide, and Anions
QA Reporting Level:	ARCADIS, Level II

ARCADIS, Inc. 2929 Briarpark Dr. Suite 300 Houston, TX 77042 Tel. (713) 953-4800

Environmental Project: Navajo Refinery

Analytical data were evaluated in accordance with applicable USEPA SW-846 method requirements, "USEPA Contract Laboratory Program National Functional Guidelines for Organic TX001027.0002 Data Review" (October 1999), "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" (July 2002), analytical method control criteria, the analytical laboratory Quality Assurance Control Limits, and professional judgment. National Functional Guidelines were used primarily to determine applicable qualification.

The data verification was performed at a Level II and included review of data package completeness, laboratory control samples and method blanks, matrix spike precision and accuracy, surrogate recoveries, and holding time compliance. Laboratory calculations were not verified. Only QA/QC results and analytical data associated with analytes/compounds of interest were reviewed for this validation. Field sampling documentation was not reviewed as a component of this validation.

Only QA/QC results and analytical data associated with analytes/compounds of interest were reviewed for this validation.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The following samples were included in this data validation:

SDG Number	Sample ID	Sample Date	Parent Sample
1301997	MW -115 (1)	1/29/2013	
1301997	MW -115 (3)	1/29/2013	
1301997	MW- 115 (5)	1/29/2013	
1301997	MW -115 (7)	1/29/2013	
1301997	MW- 115 (9)	1/29/2013	
1301997	MW- 115 (10)	1/29/2013	
1301997	MW -115 (11)	1/29/2013	
1301997	MW -115 (13)	1/29/2013	
1301997	MW- 115 (15)	1/29/2013	
1301997	MW -115 (17)	1/29/2013	
1301997	MW -115 (19)	1/29/2013	
1301997	MW -115 (20)	1/29/2013	
1301997	MW -115 (21)	1/29/2013	
1301997	MW- 115 (23)	1/29/2013	
1301997	MW-115 (25)	1/29/2013	
1301997	Trip Blank 011813-29	1/29/2013	

I. VOLATILE COMPOUNDS

ITEMS REVIEWED		RTED/ EWED	EXCEP NOT		GENERAL C		ITEM NOT REQUIRED
	NO	YES	NO	YES	NO	YES	
1. Holding times		Х	Х		Х		
2. Reporting limits		X	Χ		X		
3. Blanks							
A. Method Blanks		Χ	Х		X		
B. Equipment Blanks	Х						Х
C. Trip Blanks		Х	Х		Х		
4. Laboratory control sample (LCS) (%R)		X	Х		Х		
5. Laboratory control sample duplicate (LCSD) (%R)		X	Х		Х		
6. LCS/LCSD (RPD)		X	Χ		X		
7. Matrix spike (MS) (%R)		X	Х		X		
8. Matrix spike duplicate (MSD) (%R)		X		Х		Х	
9. MS/MSD (RPD)		X	X		X		
10. Surrogate Recoveries (%R)		X	Х		X		
11. Field Duplicate Comparison (RPD)	X						X

COMMENTS: The samples were analyzed for Volatiles by Method 8260. Performance was acceptable, with the following exceptions and notes.

7-9. Sample MW -115 (1) was used as the MS/MSD. The recovery for toluene was greater than the control limit in the MSD. Since toluene was not detected, qualification is not required.

II. METALS

ITEMS REVIEWED		RTED/ EWED	EXCEP NOT		GENERAL C		ITEM NOT REQUIRED
	NO	YES	NO	YES	YES	NO	•
1. Holding times		Х	Х			X	
2. Reporting limits		Χ	X			X	
3. Blanks							
A. Method Blanks		X		Х	X		
B. Field Blanks	X						Χ
C. Equipment Blank	Х						X
4. Laboratory control sample (LCS) (%R)		Х	Х			Х	
5. LCSD (% R)	Х						Χ
6. LCS/LCSD (RPD)	Х						Х
7. Matrix spike (MS) (%R)		Х	Х		Х		
8. MSD (%R)		Х	Х		Х		
9. MS/MSD (RPD)		Х	Х		X		
10. Lab Duplicate (RPD)		Х	Х		X		
11. Field Duplicate (RPD)	Х						X

COMMENTS: The samples were analyzed for metals by Methods 6020 and 7471A. Performance was acceptable, with the following exceptions and notes.

- 3A. Aluminum was detected in the associated method blank. The associated sample results were greater than five times the method blank concentration. No qualification of the sample results was required.
- 7-9. Sample MW -115 (1) was used as the MS/MSD for the mercury. The recoveries and RPD were acceptable.
- 10. Sample MW -115 (1) was used as the laboratory duplicate for mercury. The RPD was acceptable.

III. SEMIVOLATILE ORGANIC COMPOUNDS

ITEMS REVIEWED	REPO REVIE	EXCEP NOT		GENERAL C	ITEM NOT REQUIRED		
	NO	YES	NO	YES	NO	YES	
1. Holding times		Х	Х		Х		
2. Reporting limits		Χ	X		Χ		
3. Blanks							
A. Method Blanks		Χ	X		Χ		
B. Field Blanks	X						Χ
C. Equipment Blank	X						Χ
4. Surrogate Recovery		Χ	Χ		Χ		
5. Laboratory control sample (LCS) (%R)		X	Х		X		
6. LCSD (% R)	Х						X
7. LCS/LCSD (RPD)	X						Χ
8. Matrix spike (MS) (%R)	X						Χ
9. MSD (%R)	Х						Х
10. MS/MSD (RPD)	Х						X
11. Field Duplicate (RPD)	Х						Х

 ${\tt COMMENTS:}\ \ {\tt The\ samples\ were\ analyzed\ for\ SVOCs\ by\ Method\ 8270.}\ \ {\tt Performance\ was\ acceptable,\ with\ the\ following\ exceptions\ and\ notes.}$

IV. TOTAL PETROLEUM HYDROCARBONS

ITEMS REVIEWED		RTED/ EWED	EXCEP NO	TIONS TED	GENERAL C		ITEM NOT REQUIRED
	NO	YES	NO	YES	NO	YES	
1. Holding times		Х	Х		Х		
2. Reporting limits		X	Χ		X		
3. Blanks							
A. Method Blanks		Χ	Χ		X		
B. Field Blanks	X						Χ
C. Equipment Blank	X						Χ
4. Surrogate Recovery		Χ	Χ		X		
5. Laboratory control sample (LCS) (%R)		X	Х		X		
6. LCSD (% R)	Х						Х
7. LCS/LCSD (RPD)	X						Χ
8. Matrix spike (MS) (%R)	X						Χ
9. MSD (%R)	X						Χ
10. MS/MSD (RPD)	X						X
11. Field Duplicate (RPD)	X						X

 ${\tt COMMENTS:}\ \ {\tt The\ samples\ were\ analyzed\ for\ TPH\ by\ Method\ 8015.}\ \ {\tt Performance\ was\ acceptable,\ with\ the\ following\ exceptions\ and\ notes.}$

V. CYANIDE

ITEMS REVIEWED	REPO REVIE	EXCEP NOT		GENERAL C	ITEM NOT REQUIRED		
	NO	YES	NO	YES	YES	NO	
1. Holding times		X	Х			X	
2. Reporting limits		X	Χ			X	
3. Blanks							
A. Method Blanks		Χ		Х	X		
B. Field Blanks	X						X
C. Equipment Blank	Х						X
4. Laboratory control sample (LCS) (%R)		Х	Х			Х	
5. LCSD (% R)		Χ	X			X	
6. LCS/LCSD (RPD)		Χ	Х			Х	
7. Matrix spike (MS) (%R)		Х	Х		Х		
8. MSD (%R)		X	Х			Х	
9. MS/MSD (RPD)		X	Х			Х	
10. Lab Duplicate (RPD)		X	Х			X	

COMMENTS: The samples were analyzed for cyanide by Method 9014. Performance was acceptable, with the following exceptions and notes.

7. Sample MW -115 (15) was used as the MS analysis for the cyanide. The recovery was acceptable.

VI. ANIONS

ITEMS REVIEWED	REPO REVIE	EXCEP NOT		GENERAL O	ITEM NOT REQUIRED		
	NO	YES	NO	YES	YES	NO	
1. Holding times		X	Χ			X	
2. Reporting limits		X	X			X	
3. Blanks							
A. Method Blanks		X		Х	X		
B. Field Blanks	X						Χ
C. Equipment Blank	Х						X
4. Laboratory control sample (LCS) (%R)		Х		Х		Х	
5. LCSD (% R)	X						X
6. LCS/LCSD (RPD)	Х						Χ
7. Matrix spike (MS) (%R)	Х						Х
8. MSD (%R)	Х						Χ
9. MS/MSD (RPD)	Х						Χ
10. Lab Duplicate (RPD)	Х						Χ

COMMENTS: The samples were analyzed for chloride, fluoride, nitrate, nitrite, and sulfate by EPA Method 300.0. Performance was acceptable, with the following exceptions and notes.

3A. Fluoride was detected in the associated method blank. The associated sample results were greater than five times the method blank concentration except for sample location MW-115 (25). Sample location MW-115 (25) was qualified as not detected for fluoride. See the attached qualification summary for details of the qualification.

Qualifier Definitions:

- J Result is considered to be estimated at the value reported.
- UJ Result is considered not detected but estimated due to QC deficiencies.
- UB Non-detect at the Reporting Limit (RL) or at the concentration reported if greater than the RL due to associated blank contamination.
- R Result is qualified as unusable, data point is rejected.

Explanation/Notes:

Sample ID	Parameter	Result	Units	Qualifier	Reason
MW-115 (25)	Fluoride	3.55	mg/kg	UB	Blank Contamination

Lad William

VALIDATION PERFORMED BY: Lyndi Mott

SIGNATURE:

DATE: March 4, 2013

PEER REVIEW:

DATE: March 12, 2013

DATA VALIDATION CHECKLIST

NAVAJO REFINING RO Discharge Sampling

Sample Team:	ARCADIS
Sample Matrix:	Water
Analytical Laboratory;	ALS Environmental
Laboratory Work Order No.:	1301989
Lab Project Manager:	Sonia West
Analyses:	VOCs, SVOCs, TPH, Metals, Mercury, Cyanide, and Anions
QA Reporting Level:	ARCADIS, Level II

ARCADIS, Inc. 2929 Briarpark Dr. Suite 300 Houston, TX 77042 Tel. (713) 953-4800

Environmental Project: Navajo Refinery

Analytical data were evaluated in accordance with applicable USEPA SW-846 method requirements, "USEPA Contract Laboratory Program National Functional Guidelines for Organic TX001027.0002 Data Review" (October 1999), "USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Data Review" (July 2002), analytical method control criteria, the analytical laboratory Quality Assurance Control Limits, and professional judgment. National Functional Guidelines were used primarily to determine applicable qualification.

The data verification was performed at a Level II and included review of data package completeness, laboratory control samples and method blanks, matrix spike precision and accuracy, surrogate recoveries, and holding time compliance. Laboratory calculations were not verified. Only QA/QC results and analytical data associated with analytes/compounds of interest were reviewed for this validation. Field sampling documentation was not reviewed as a component of this validation.

Only QA/QC results and analytical data associated with analytes/compounds of interest were reviewed for this validation.

ANALYTICAL DATA PACKAGE DOCUMENTATION

The following samples were included in this data validation:

SDG Number	Sample ID	Sample Date	Parent Sample
1302189	MW-116	2/3/2013	
1302189	MW-119	2/5/2013	
1302189	MW-118	2/5/2013	
1302189	TRIP BLANK 011813-71	2/5/2013	
1302189	TRIP BLANK 011813-30	2/5/2013	

I. VOLATILE COMPOUNDS

ITEMS REVIEWED	REPORTED/ REVIEWED		EXCEPTIONS NOTED		GENERAL COMMENTS NOTED		ITEM NOT REQUIRED
	NO	YES	NO	YES	NO	YES	
1. Holding times		Х	Х		Х		
2. Reporting limits		Χ	Χ		Χ		
3. Blanks							
A. Method Blanks		Χ	Х		Χ		
B. Equipment Blanks	Χ						Х
C. Trip Blanks		Х	Х		Х		
4. Laboratory control sample (LCS) (%R)		X	Х		Х		
5. Laboratory control sample duplicate (LCSD) (%R)		X	Х		Х		
6. LCS/LCSD (RPD)		Χ	Х		X		
7. Matrix spike (MS) (%R)	Χ						X
8. Matrix spike duplicate (MSD) (%R)	Х						Х
9. MS/MSD (RPD)	X						X
10. Surrogate Recoveries (%R)		X	X		X		
11. Field Duplicate Comparison (RPD)	Х						Х

COMMENTS: The samples were analyzed for Volatiles by Method 8260. Performance was acceptable, with the following exceptions and notes.

II. METALS

ITEMS REVIEWED	REPORTED/ REVIEWED		EXCEPTIONS NOTED		GENERAL COMMENTS NOTED		ITEM NOT REQUIRED
	NO	YES	NO	YES	YES	NO	
1. Holding times		X	Χ			Х	
2. Reporting limits		X	Х			X	
3. Blanks							
A. Method Blanks		X		X	X		
B. Field Blanks	X						Χ
C. Equipment Blank	Х						Χ
4. Laboratory control sample (LCS) (%R)		Х	Х			Х	
5. LCSD (% R)	Х						Χ
6. LCS/LCSD (RPD)	Χ						Χ
7. Matrix spike (MS) (%R)	Х						Х
8. MSD (%R)	X						Χ
9. MS/MSD (RPD)	X						Χ
10. Lab Duplicate (RPD)	X						Χ
11. Field Duplicate (RPD)	Х						X

COMMENTS: The samples were analyzed for metals by Methods 6020 and 7471A. Performance was acceptable, with the following exceptions and notes.

- 3A. Aluminum was detected in the associated method blank. The associated field sample results were less than five times the method blank concentration. The field sample results for aluminum were qualified as non-detect at the Reporting Limit (RL), or at the detected sample concentration when greater than the RL. See the attached qualification summary for details of the qualifications.
- 3A. Calcium was detected in the associated method blank. The associated field sample calcium results were greater than five times the blank value; therefore, qualification of the data was not warranted.
- 3A. Zinc was detected in the associated method blank. The result for sample location MW-116 was less than five times the method blank concentration. The zinc result for this sample was qualified as non-detect at the RL. Sample locations MW-119 and MW-118 were either non-detect or greater than five times the method blank concentration, and did not require qualification. See the attached qualification summary for details of the qualifications.

III. SEMIVOLATILE ORGANIC COMPOUNDS

ITEMS REVIEWED		REPORTED/ REVIEWED		TIONS ED	GENERAL COMMENTS NOTED		ITEM NOT REQUIRED
	NO	YES	NO	YES	NO	YES	
1. Holding times		Χ	Χ		X		
2. Reporting limits		Χ	Χ		X		
3. Blanks							
A. Method Blanks		Χ	Χ		X		
B. Field Blanks	X						Χ
C. Equipment Blank	X						Χ
4. Surrogate Recovery		Χ	Χ		X		
5. Laboratory control sample (LCS) (%R)		X	Х		X		
6. LCSD (% R)		Х	Х		Х		
7. LCS/LCSD (RPD)		Х	Х		Х		
8. Matrix spike (MS) (%R)	X						Χ
9. MSD (%R)	X						Х
10. MS/MSD (RPD)	X						Х
11. Field Duplicate (RPD)	X						Х

 ${\tt COMMENTS:}\ \ {\tt The\ samples\ were\ analyzed\ for\ SVOCs\ by\ Method\ 8270.}\ \ {\tt Performance\ was\ acceptable,\ with\ the\ following\ exceptions\ and\ notes.}$

IV. TOTAL PETROLEUM HYDROCARBONS

ITEMS REVIEWED	REPORTED/ REVIEWED		EXCEPTIONS NOTED		GENERAL COMMENTS NOTED		ITEM NOT REQUIRED
	NO	YES	NO	YES	NO	YES	·
1. Holding times		Х	Х		Х		
2. Reporting limits		X	Χ		Χ		
3. Blanks							
A. Method Blanks		X	Χ		Χ		
B. Field Blanks	X						Χ
C. Equipment Blank	X						Χ
4. Surrogate Recovery		X	Χ		Χ		
5. Laboratory control sample (LCS) (%R)		X	Х		Х		
6. LCSD (% R)		Х	Х		Х		
7. LCS/LCSD (RPD)		Х	Х		X		
8. Matrix spike (MS) (%R)	X						X
9. MSD (%R)	Х	_					Х
10. MS/MSD (RPD)	Х						X
11. Field Duplicate (RPD)	Х						Х

 ${\tt COMMENTS:}\ \ {\tt The\ samples\ were\ analyzed\ for\ TPH\ by\ Method\ 8015.}\ \ {\tt Performance\ was\ acceptable,\ with\ the\ following\ exceptions\ and\ notes.}$

V. CYANIDE

ITEMS REVIEWED		REPORTED/ REVIEWED		TIONS ED	GENERAL COMMENTS NOTED		ITEM NOT REQUIRED
	NO	YES	NO	YES	YES	NO	
1. Holding times		Х	Х			Х	
2. Reporting limits		X	X			X	
3. Blanks							
A. Method Blanks		X		X	X		
B. Field Blanks	X						X
C. Equipment Blank	Х						Х
4. Laboratory control sample (LCS) (%R)		Х	Х			Х	
5. LCSD (% R)		Χ	Х			X	
6. LCS/LCSD (RPD)		Χ	Х			X	
7. Matrix spike (MS) (%R)	Х						Х
8. MSD (%R)	X						X
9. MS/MSD (RPD)	X						X
10. Lab Duplicate (RPD)	X						Χ

 ${\tt COMMENTS:}\ \ {\tt The\ samples\ were\ analyzed\ for\ cyanide\ by\ Standard\ Methods\ 4500CN\ E\&G.\ Performance\ was\ acceptable,\ with\ the\ following\ exceptions\ and\ notes.}$

VI. ANIONS

ITEMS REVIEWED		REPORTED/ REVIEWED		TIONS ED	GENERAL COMMENTS NOTED		ITEM NOT REQUIRED
	NO	YES	NO	YES	YES	NO	
1. Holding times		Χ		X	Х		
2. Reporting limits		Χ	X			X	
3. Blanks							
A. Method Blanks		X	Х	X		X	
B. Field Blanks	X						Χ
C. Equipment Blank	X						Χ
4. Laboratory control sample (LCS) (%R)		Х		Х		Х	
5. LCSD (% R)	X						X
6. LCS/LCSD (RPD)	X						X
7. Matrix spike (MS) (%R)		Х		Х		Х	
8. MSD (%R)		Χ		X		X	
9. MS/MSD (RPD)		Χ	X		X		
10. Lab Duplicate (RPD)	Х						Χ

COMMENTS: The samples were analyzed for chloride, fluoride, nitrate, nitrite, and sulfate by EPA Method 300.0. Performance was acceptable, with the following exceptions and notes.

- 1. Sample location MW-116 was received by the laboratory beyond the 48 hour hold time for nitrate and nitrite. The laboratory contacted the client, and the lab was authorized to proceed with the analysis. The nitrate and nitrite analysis was performed 9 days from collection, which is greater than twice the holding time. The nitrate result should be considered estimated. The nitrite result was non-detect and is rejected. See the attached qualification summary for details of the qualifications.
- 3A. Nitrate was detected in the method blank associated with the analysis of sample location MW-116. The associated sample result was greater than five times the method blank concentration therefore, qualification of the data was not required.
- 7-8. Sample MW-116 was used as the MS/MSD for fluoride, nitrate and nitrite. The recovery of fluoride was less than the control limit in the MS and the MSD. The fluoride result for sample location MW-116 was qualified as estimated. See the attached qualification summary for details of the qualifications.

VII. TOTAL DISSOVLED SOLIDS (TDS)

······································								
ITEMS REVIEWED		REPORTED/ REVIEWED		TIONS TED	GENERAL COMMENTS NOTED		ITEM NOT REQUIRED	
	NO	YES	NO	YES	YES	NO		
1. Holding times		X	Х			X		
2. Reporting limits		X	Х			X		
3. Blanks								
A. Method Blanks		X		Χ	X			
B. Field Blanks	X						X	
C. Equipment Blank	Х						Х	
4. Laboratory control sample (LCS) (%R)		Х		Х		Х		
5. LCSD (% R)	X						Х	
6. LCS/LCSD (RPD)	Х						Х	
7. Matrix spike (MS) (%R)	X						Х	
8. MSD (%R)	X						X	
9. MS/MSD (RPD)	X						X	
10. Lab Duplicate (RPD)		Х		Х		Х		

COMMENTS: The samples were analyzed for chloride, fluoride, nitrate, nitrite, and sulfate by EPA Method 300.0. Performance was acceptable, with the following exceptions and notes.

10. Sample MW-116 was used as the laboratory duplicate for TDS. The RPD was acceptable.

Qualifier Definitions:

- J Result is considered to be estimated at the value reported.
- UJ Result is considered not detected but estimated due to QC deficiencies.
- UB Non-detect at the Reporting Limit (RL) or at the concentration reported if greater than the RL due to associated blank contamination.
- R Result is qualified as unusable, data point is rejected.

Explanation/Notes:

Sample ID	Parameter	Result	Units	Qualifier	Reason
Campic is				Qualifici	
	Nitrate	1.37	mg/L	J	Holding Time
	Nitrite	0.1 U	mg/L	R	Holding Time
MW-116	Aluminum	0.01	mg/L	UB	Blank contamination
	Zinc	0.005	mg/L	UB	Blank contamination
	Fluoride	1.31	mg/L	J	MS/MSD % Recovery
MW-119	Aluminum	0.01	mg/L	UB	Blank contamination
MW-118	Aluminum	0.0146	mg/L	UB	Blank contamination

VALIDATION PERFORMED BY: Lyndi Mott

SIGNATURE:

PEER REVIEW:

DATE: March 6, 2013

Low lu mon

DATE: March 12, 2013

Page 10 of 10