AP - 110

Facility-Wide GW Monitoring Report

April 2016

HOLLYFRONTIER.

April 15, 2017

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

Re: 2016 Annual Facility-Wide Groundwater Monitoring Report, HollyFrontier Navajo Refining LLC, Lovington, New Mexico, AP-110.

Dear Mr. Chavez:

Please find enclosed the original and one electronic copy of the *2016 Annual Facility-Wide Groundwater Monitoring Report* (Report) for the HollyFrontier Navajo Refining LLC (Navajo) Lea Refinery (refinery) located in Lovington, New Mexico. The Report summarizes the results of groundwater monitoring activities conducted at the refinery under AP-110 during calendar year 2016.

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

Sincerely,

Scott M. Denton
Environmental Manager

cc: Robert Combs, HFNR
Julie Speer, TRC
Bryan Gilbert, TRC
Catriona Smith, TRC

2016 Annual Facility-Wide Groundwater Monitoring Report

HollyFrontier Navajo Refining LLC
AP-110
Lovington, New Mexico

April 2017

Prepared for:

HollyFrontier

HollyFrontier Navajo Refining LLC
Artesia, New Mexico

Prepared by:

TRC

TRC Environmental Corporation
Austin, Texas

2016 Annual Facility-Wide Groundwater Monitoring Report

HollyFrontier Navajo Refining LLC
AP-110
Lovington, New Mexico

Prepared for:

HOLLYFRONTIER.

HollyFrontier Navajo Refining LLC
Artesia, New Mexico

Prepared by:

TRC

505 East Huntland Drive, Suite 250
Austin, Texas 78752

TRC Project No. 247359

April 2017

Principal Lead _____ **Technical Lead** _____

EXECUTIVE SUMMARY

This *2016 Annual Facility-Wide Groundwater Monitoring Report* documents groundwater monitoring activities conducted at the HollyFrontier Navajo Refining LLC (Navajo) facility located (refinery) in Lovington, New Mexico during calendar year 2016. The refinery is currently regulated by New Mexico Oil Conservation Division Energy Minerals and Natural Resources Department (OCD) under Abatement Plan (AP)-110).

The groundwater monitoring program consists of semi-annual groundwater gauging of monitoring wells, semi-annual groundwater sampling of monitoring wells, semi-annual quarterly sampling of refinery water supply wells, and annual reporting. The monitoring objectives are to determine groundwater elevations, flow direction, and gradient and obtain dissolved-phase toxic pollutant concentration data. Monitoring activities were conducted in general accordance with the December 2015 *Revised Facility-Wide Groundwater Monitoring Work Plan* (Revised FWGWMWP) that was approved by OCD on March 9, 2016.

The 2016 groundwater monitoring results indicate that physical and chemical groundwater conditions are generally consistent with historical data. Groundwater flows radially (southeast, south, and north/northwest) towards a cone of depression near the three water supply wells located within the central portion of the refinery. This cone of depression is induced by groundwater pumping from the three on-site water supply wells for refinery process use and non-potable restroom and safety shower use. The presence of select anions (chloride and fluoride), total dissolved solids (TDS), and manganese in select wells at concentrations above Water Quality Control Commission (WQCC) Human Health Standards is due to off-site sources, background concentrations, and/or non-Navajo sources at the refinery.

Navajo installed and maintained oxygen-releasing compound (ORC®) socks in MW-11 to promote enhanced aerobic biodegradation of benzene historically detected in this well until August 2016 when the well went dry. Monitoring well MW-11 was replaced with a deeper monitor well (MW-11R) in December 2016.

Navajo conducted additional investigation of the historical release at the asphalt loading rack that was discovered by Holly Energy Partners – Operating, L.P. (HEP) during construction activities in November 2015. Samples collected from select wells during the August 2016 and December 2016 events were analyzed for total petroleum hydrocarbon (TPH). One monitoring well (MW-31) was installed at the asphalt loading rack in December 2016. The investigation of the historical release is ongoing. No reportable releases occurred at the refinery during 2016.

Navajo will implement groundwater monitoring activities at the refinery in 2017 under the Revised FWGWMWP. The Revised FWGWMWP will be updated to include all new wells.

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1.0 INTRODUCTION

On behalf of HollyFrontier Navajo Refining LLC (Navajo), TRC Environmental Corporation (TRC) has prepared this *2016 Annual Facility-Wide Groundwater Monitoring Report* to summarize the results of groundwater monitoring activities conducted at the facility located (refinery) in Lovington, New Mexico during calendar year 2016. Previous annual monitoring reports were submitted in accordance with a Groundwater Discharge Permit (GW-014) issued by the New Mexico Oil Conservation Division (OCD). The Groundwater Discharge Permit was due to expire on October 30, 2011, and a renewal draft permit was issued in August 2011 that was to go into effect by November 1, 2011. However, the OCD rescinded the Groundwater Discharge Permit on February 9, 2012. The refinery is currently regulated by the OCD under Abatement Plan (AP)-110. This report is prepared in accordance with Navajo's February 22, 2013, Memorandum to the OCD and OCD's response on February 28, 2013.

1.1 Refinery Description

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

2.0 SEMI-ANNUAL GROUNDWATER MONITORING ACTIVITIES

Semi-annual groundwater monitoring activities were conducted at the refinery in March 2016 and August 2016 in accordance with the December 2015 *Revised Facility-Wide Groundwater Monitoring Work Plan* (Revised FWGWMWP) that was approved by the OCD in an email on March 9, 2016. TRC conducted the first semi-annual groundwater monitoring event from March 7 to March 10, 2016, and the second semi-annual event from August 15 to August 19, 2016. Groundwater monitoring activities consisted of (1) gauging all refinery monitoring wells (MW-1 through MW-30) and one recovery well (RW-1), and (2) collecting groundwater samples for laboratory analysis from all refinery monitoring wells (MW-1 through MW-30) except MW-7, and three water supply wells (WW-North, WW-South, and WW-East). The locations of the monitoring wells, recovery well, and water supply wells are presented in Figure 2.

The following deviations to the Revised FWGWMWP were documented during the March 2016 monitoring event:

- Wells MW-11 and MW-13 were sampled using bailing techniques rather than low-flow procedures with a submersible pump due to poor recharge and insufficient water column in the wells. These wells were purged dry with a new disposable bailer and a grab sample was collected for laboratory analysis after the well recharged.
- Well MW-11 could only be sampled for volatile organic compounds (VOCs) due to poor recharge resulting in insufficient water volume.

The following deviations to the Revised FWGWMWP were documented during the August 2016 monitoring event:

- Well MW-11 could not be sampled because it was dry.
- Wells MW-13, MW-14, and MW-18 were sampled using bailing techniques rather than low-flow procedures with a submersible pump due to poor recharge and insufficient water column in the wells. These wells were purged dry with a new disposable bailer and a grab sample was collected for laboratory analysis after the well recharged.

2.1 Fluid Level Gauging

All refinery monitoring and recovery wells were gauged during the March 2016 and August 2016 semi-annual monitoring events to determine the groundwater elevation, flow direction, and gradient, the presence or absence of phase-separated hydrocarbons (PSH), and apparent PSH thickness. A decontaminated oil-water interface probe was used to measure depth to water and depth to PSH, if present. Depth to water and depth to PSH were measured to the nearest 0.01-foot from the top of the well casing.

2.2 Groundwater Sample Collection

Groundwater samples were collected for laboratory analysis from the following wells during each semi-annual monitoring event: 29 refinery monitoring wells (MW-1 through MW-30, except MW-7), and three water supply wells (WW-North, WW-East, and WW-South).

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

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

After the purging process was complete, groundwater samples were collected directly from the dedicated or disposable tubing (for the monitoring and recovery wells) or from the water supply well sampling point into method-specific containers provided by the laboratory. All groundwater samples were submitted to ESC Lab Sciences (ESC) in Mount Juliet, Tennessee under appropriate chain-of-custody documentation for one or more of the following analyses in accordance with the Revised FWGWMWP, except as identified as deviations above:

- VOCs by Method 8260B
- SVOCs by Method 8270C
- Dissolved metals (aluminum, arsenic, barium, boron, cadmium, chromium, cobalt, copper, iron, lead, magnesium, manganese, molybdenum, nickel, selenium, silver, sodium, uranium, zinc) by Method 6010B and 6020
- Total mercury by Method 7470A
- Anions (chloride, fluoride, nitrate-nitrite, and sulfate) Method 353.2 and Method 9056
- Alkalinity by Method 2320 B
- TDS by Method M2540C

Groundwater samples collected from select wells surrounding the asphalt loading rack (MW-5, MW-21, and MW-22) and the water supply wells (WW-North, WW-South, and WW-East) during the August semi-annual monitoring event were submitted to ESC for laboratory analysis of total petroleum (TPH) gasoline range organics (GRO) and diesel range organics (DRO) by Method 8015. The TPH analyses were conducted to support ongoing assessment of the historical release discovered at the asphalt loading rack.

3.0 SEMI-ANNUAL GROUNDWATER MONITORING RESULTS

The results of the semi-annual groundwater monitoring activities conducted in March 2016 and August 2016 are discussed below.

3.1 Fluid Gauging Results

Fluid level gauging was performed on March 7, 2016, and on August 15, 2016. Depth to water measurements and groundwater elevations are presented in Table 1. No PSH was detected in any monitoring or recovery well during either gauging event. Potentiometric groundwater surface maps for the March 2016 and August 2016 gauging events are presented as Figures 3 and 4, respectively. The groundwater elevations measured during both gauging events indicate groundwater flows radially (southeast, south, and north/northwest) towards a cone of depression near the three water supply wells located within the central portion of the refinery. This cone of depression is consistent with previous events and is induced by groundwater pumping from the three on-site water supply wells for refinery process use and non-potable restroom and safety shower use.

Groundwater elevations measured during the March 2016 event decreased an average 0.77 feet from those measured in February 2015. The March 2016 groundwater elevation data indicates groundwater beneath the northwestern portion of the refinery flows southeast towards the cone of depression at a hydraulic gradient ranging from 0.004 to 0.024 feet per foot. South/southeast of the cone of depression, groundwater flows north/northwest at a hydraulic gradient ranging from 0.0006 to 0.004 feet per foot.

Groundwater elevations measured during the August 2016 event decreased an average 1.02 feet from those measured in August 2015. The August 2016 groundwater elevation data indicates groundwater northwest of the cone of depression flows southeast at a hydraulic gradient ranging from of 0.004 to 0.021 feet per foot. South/southeast of the cone of depression, groundwater flows north/northwest at a hydraulic gradient ranging from 0.0006 to 0.001 feet per foot.

A graph of groundwater elevations versus time for wells MW-4 and MW-6 is provided in Appendix A. As shown on the graph, groundwater elevations in wells MW-4 and MW-6 have decreased 8.59 feet and 8.98 feet, respectively, from June 2009 to August 2016. These reductions in groundwater levels are consistent across the refinery and are likely caused by (1) limited recharge due to low rainfall levels and (2) active pumping from three on-site water supply wells and City of Lovington water supply wells located northwest and west (i.e., upgradient) of the refinery.

3.2 Groundwater Sampling Results

Analytical results of organic and inorganic constituents in groundwater samples collected during the 2016 sampling events are presented in Tables 2 and 3, respectively. Analytical results are compared to the New Mexico Water Quality Control Commission (WQCC) Human Health Standards for groundwater and any results that exceeded these standards are shaded gray. Groundwater concentration maps are provided as Figures 5 through 9 for constituents that exceeded WQCC Standards. Laboratory analytical reports are provided in Appendix B. Plots of groundwater concentrations over time for detected constituents are provided in Appendix C.

3.2.1 Organic Constituent Results

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

3.2.1.1 Volatile Organic Compounds

VOCs were not detected above their respective WQCC Standards in any of the wells sampled in March 2016 and August 2016. VOCs were not detected above the method quantitation limits in any of the 22 wells sampled during the March 2016 sampling event or in any of the 32 wells sampled during the August 2016 sampling event.

Reported concentrations of VOCs during the 2016 sampling events were generally consistent with or less than previous sampling results with no notable increases. Concentration maps of VOCs in groundwater for the March 2016 and August 2016 sampling events are not provided because none of the reported concentrations exceeded the WQCC Standards.

Benzene has historically fluctuated above and below the WQCC Standard in well MW-11. In March 2015, Navajo installed oxygen-releasing compound (ORC®) socks in MW-11 to promote enhanced aerobic biodegradation of benzene historically detected in this well. ORC® socks were maintained and replaced in accordance with the manufacturer's recommendations until the August 2016 event because the well was dry. No samples could be collected from MW-11 in August 2016. Monitoring well MW-11 was plugged and abandoned in December 2016 and a deeper, replacement well (MW-11R) was installed at a location adjacent to the former well. Details of the abandonment and replacement activities are provided in Section 7 of this report. The State of New Mexico Office of the State Engineer (OSE) plugging and well records and TRC soil boring and well completion logs are provided in Appendix E.

3.2.1.2 Semi-Volatile Organic Compounds

SVOCs were not detected above their respective method quantification limits in any of the 9 wells sampled for SVOCs during the March 2016 monitoring event or the 26 wells sampled for SVOCs during the August 2016 monitoring event. Analytical results for SVOCs during the 2016 sampling events were generally consistent with previous sampling results with no notable increases. Concentration maps of SVOCs in groundwater for the March 2016 and August 2016 sampling events are not provided because no concentrations were reported above the WQCC Standards.

3.2.1.3 Total Petroleum Hydrocarbons

TPH GRO was not detected above the method quantification limit in any of the 6 wells sampled for TPH GRO during the August 2016 monitoring event. TPH DRO was detected at concentrations above the method quantification limit in 3 of the 6 wells (MW-5, MW-21, and MW-22) sampled for TPH DRO during the August 2016 monitoring event with a maximum detected concentration of 0.819 milligrams per liter (mg/L) in MW-22. In addition, TPH DRO was detected at estimated J-flagged concentrations below the method quantification limit in water supply wells WW-South (0.0303 J mg/L, 0.0482 J mg/L [duplicate]) and WW-East (0.0673 J mg/L).

There is no WQCC Standard for TPH DRO or TPH GRO. The New Mexico Environment Department (NMED) published groundwater screening levels in the March 2017 *Risk Assessment Guidance for Investigations and Remediation Volume I*. TPH DRO was detected above the NMED groundwater screening of 0.473 mg/L for Diesel #2 in samples collected from wells MW-21 and MW-22. However, NMED guidance indicates TPH data is screened in conjunction with indicator VOCs and SVOCs associated with TPH mixtures. No indicator VOCs or SVOCs were detected above their respective method quantitation limit or WQCC Standard in samples collected from wells MW-21 and MW-22.

3.2.2 Inorganic Constituent Results

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

3.2.2.1 Anions

The March 2016 analytical results indicate that chloride and fluoride are present in groundwater at concentrations above their respective WQCC Standards. Chloride was detected at concentrations above the WQCC Standard of 250 mg/L in 4 of the 15 wells sampled with a maximum detected concentration of 354 mg/L in MW-South. Fluoride was detected at a concentration above the WQCC Standard of 1.6 mg/L in 1 of the 15 wells sampled at a concentration of 1.62 mg/L in MW-28.

The August 2016 analytical results indicate that chloride and fluoride are present at concentrations above their respective WQCC Standards. Chloride was detected at concentrations above the WQCC Standard of 250 mg/L in 5 of the 30 wells sampled with a maximum detected concentration of 470 mg/L in MW-19. Fluoride was detected at concentrations above the WQCC Standard of 1.6 mg/L in 2 of the 30 wells with a maximum detected concentration of 2.78 mg/L in MW-24.

Concentration maps of anions that exceeded WQCC Standards in groundwater for the March 2016 and August 2016 sampling events are provided as Figures 5 and 6, respectively.

Reported anion concentrations for the 2016 sampling events were generally consistent with previous sampling results, with notable increases in the following wells:

- MW-19: Chloride concentrations increased from 236 mg/L in August 2015 to 297 mg/L in March 2016 to 470 mg/L in August 2016. However, the chloride concentrations in this well have historically fluctuated above and below the WQCC Standard of 250 mg/L. The historical maximum reported concentration at this well is 1,130 mg/L in July 2012.
- MW-25: Chloride concentrations increased from 207 mg/L in August 2015 to 345 mg/L in March 2016, which is the historical maximum reported concentration at the well. The chloride concentration decreased to 292 mg/L in August 2016. The chloride concentrations in this well have historically fluctuated above and below the WQCC Standard of 250 mg/L.

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

3.2.2.2 Total Dissolved Solids

During the March 2016 sampling event, TDS was detected at concentrations above the WQCC Standard of 1,000 mg/L in 4 of the 11 wells sampled with a maximum detected concentration of 1,290 mg/L in well MW-8. During the August 2016 sampling event, TDS was detected at concentrations above the WQCC Standard of 1,000 mg/L in 5 of the 25 wells sampled with a maximum detected concentration of 1,660 mg/L in well MW-19. Concentration maps of TDS in groundwater for the March 2016 and August 2016 sampling events are provided as Figures 7 and 8, respectively. Reported TDS concentrations for both 2016 sampling events were generally consistent with previous sampling results, with a notable increase in the following well:

- MW-19: TDS concentrations increased from 888 mg/L in August 2015 to 1,170 mg/L in March 2016 to 1,660 mg/L in August 2016. The TDS concentration has historically fluctuated above and below the WQCC Standard of 1,000 mg/L in this well. The historical maximum reported concentration in this well is 3,570 mg/L in July 2012.

As discussed in the December 2013 *Refinery Investigation Report*, the presence of TDS at concentrations above WQCC Standards in select wells (including wells MW-8, MW-13, MW-19, MW-21, MW-23, MW-25, MW-26, MW-29, and WW-South) is due to off-site sources, background concentrations, and/or non-Navajo sources at the refinery.

3.2.2.3 Metals

Metals were not detected above their respective WQCC Standard in any of the 12 wells sampled in March 2016.

The August 2016 analytical results indicate that manganese was detected at a concentration above its WQCC Standard. Manganese was detected at a concentrations above the WQCC Standard of 0.2 mg/L in 1 of the 25 wells sampled at a concentration of 0.241 mg/L in well MW-13.

Concentration maps of metals that exceeded WQCC Standards in groundwater for the August 2016 sampling event is provided as Figure 9. Metal present in groundwater beneath the wastewater separator, the former salt water disposal wells, and between Tanks 1214 and 1203, located within the northwestern/central portion of the refinery (i.e., wells MW-6, MW-13, and MW-29), were generally consistent with or less than previous sampling events.

Reported metal concentrations for the 2016 sampling events were generally consistent with or less than previous sampling results, with no notable increases. As discussed in the December 2013 *Refinery Investigation Report*, the presence of metals at concentrations above WQCC Standards in select wells, including manganese (well MW-13) is due to off-site sources, background concentrations, and/or non-Navajo sources at the refinery.

4.0 WATER WELL SAMPLING AND ANALYTICAL RESULTS

The potential risk associated with use of the water in refinery restrooms and safety showers (the water is not used for drinking or cooking) was evaluated through sampling of the refinery water supply wells WW-North, WW-South, and WW-East on a quarterly basis. The results of the water supply well sampling activities conducted in 2016 are discussed below.

Groundwater samples were collected from refinery water supply wells WW-North, WW-East, and WW-South on a quarterly basis in 2016 in accordance with the Revised FWGWMWP. The objective of the quarterly sampling is to evaluate the potential risk associated with use of the water in refinery restrooms and safety showers (the water is not used for drinking or cooking). Water supply well WW-East is the primary source of refinery water supply and water supply wells WW-North and WW-South are used to supplement well WW-East.

Groundwater samples were collected from water supply wells WW-North, WW-South, and WW-East on March 10, 2016, May 25, 2016, August 18, 2016, and December 8, 2016. Groundwater samples collected from the water supply wells were submitted to ESC in Mount Juliet, Tennessee, under appropriate chain-of-custody documentation for the same analyses as the semi-annual monitoring events.

Consistent with historical results, chloride was detected in WW-South at concentrations above the WQCC Standard of 250 mg/L in each of the quarterly sampling events with results ranging from 354 mg/L in March 2016 to 425 mg/L in December 2016. Also consistent with historical results, TDS was detected in WW-South at concentrations above the WQCC Standard of 1,000 mg/L in each of the quarterly sampling events with results ranging from 1,100 mg/L in March to 1,620 mg/L in May 2016. None of the remaining analytes were detected at concentrations above their respective WQCC Standards in any of the samples.

TPH DRO was detected at estimated J-flagged concentrations below the method quantification limit in water supply wells WW-South and WW-East during the August 2016 event and in all three water supply wells during the December 2016 event (with the exception of the duplicate sample collected from WW-South which was detected above the method quantification limit). The greatest TPH DRO concentrations were reported in WW-South during each event with concentrations ranging from 0.0303 J mg/L (0.0482 J mg/L in duplicate) in August 2016 to 0.0961 J mg/L (0.118 mg/L in duplicate) in December 2016. There is no WQCC Standard for TPH. The New Mexico Environment Department (NMED) published groundwater screening levels in the March 2017 *Risk Assessment Guidance for Investigations and Remediation Volume I*. TPH DRO was not detected above the TPH groundwater screening level of 0.473 mg/L for Diesel #2 in any of the samples collected from the water supply wells.

Organic and inorganic analytical results of the quarterly water supply well samples are summarized and compared to WQCC Standards in Tables 2 and 3, respectively. Water from the water supply wells poses no risk associated with continued use in refinery restrooms and safety showers based on these results.

5.0 QUALITY ASSURANCE/QUALITY CONTROL

5.1 Semi-Annual and Quarterly Groundwater Samples

Nineteen water samples, two field duplicates, one equipment blank, and six trip blanks were collected from March 7 to 10, 2016. Three water samples and one field duplicate were collected on May 25, 2016. Thirty-two water samples, four field duplicates, two equipment blanks, and eight trip blanks were collected from August 15 to 19, 2016. Three water samples, one field duplicate, and one trip blank were collected on December 8, 2016. These samples were submitted to ESC in Mount Juliet, Tennessee for analyses.

TRC Quality Assurance (QA) staff reviewed resultant data on March 14, 2017. Six separate data packages identified as L822693, L822843, L837813, L854986, L854500, and L877712 were reviewed. Data were reviewed for compliance with the analytical protocols used for sample analysis and laboratory-defined quality control (QC) limits. Items reviewed during the data validation process included the following:

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

Complete QA/QC data review results are provided in Appendix D. Only data interpretation issues are identified in the following subsections.

5.1.1 Laboratory Method Blanks

- In March 2016, these compounds were detected in the laboratory method blank WG855745. These compounds were detected in the following associate samples at concentrations within five times the method blank concentration and therefore may include measurement contributions from laboratory sources:
    - Aluminum: MW-1, MW-13, MW-15, MW-17R, MW-29, MW-30, Dup-1
    - Copper: MW-1, MW-13, MW-15, MW-17R, MW-29, MW-30, Dup-1
    - Iron: MW-13
    - Lead: MW-13, MW-15, Dup-1
    - Molybdenum: MW-1, MW-17R

- Zinc: MW-1, MW-13, MW-15, MW-17R, Dup-1

- In March 2016, copper and molybdenum were detected in laboratory method blank WG856192. These compounds were detected in the following associate samples at concentrations within five times the method blank concentration and therefore may include measurement contributions from laboratory sources:
  - Copper: MW-6, MW-12R, MW-25, WW-North, and WW-East
  - Molybdenum: MW-6, MW-12R, MW-25, WW-North, WW-South, and WW-East
- In March 2016, di-n-butyl phthalate and di-n-octyl phthalate were detected in laboratory method blank WG856641. Di-n-butyl phthalate and di-n-octyl phthalate were detected in associated samples MW-12R, MW-25, WW-North, and WW-South at concentrations within ten times the method blank concentration and therefore may include measurement contributions from laboratory sources.
- In March 2016, aluminum was detected in laboratory method blank WG856533. Aluminum was detected in associated samples MW-6, MW-12R, MW-25, WW-North, WW-South, WW-East, and EB-3-10-16-A at concentrations within five times the method blank concentration and therefore may include measurement contributions from laboratory sources.
- In May 2016, manganese was detected in laboratory method blank WG876373. Manganese was not detected in WW-South, WW-North, and Dup-4 at concentrations within five times the method blank concentration; therefore, there are no data interpretation issues associated with the detection of alkalinity in this method blank. Manganese was detected in WW-East within five times the associated method blank concentrations and therefore may include measurement contributions from laboratory sources.
- In August 2016, the following compounds were detected in laboratory method blank WG901756: aluminum, calcium, chromium, copper, manganese, nickel, and zinc. These compounds were detected in the following associated samples at concentrations within five times the associated method blank concentrations and therefore may include measurement contributions from laboratory sources:
  - Aluminum: MW-2, MW-6, MW-8, MW-12R, MW-14, MW-16, MW-17R, WW-North, WW-East, Dup-4
  - Calcium: EB-08-18-16-A, EB-08-18-16-B

  - Chromium: MW-2, MW-6, MW-8, MW-12R, MW-14, MW-17R, MW-18, WW-North, Dup-4, WW-East, EB-08-18-16-A, EB-08-18-16-B
  - Copper: MW-2, MW-6, MW-8, MW-12R, MW-14, MW-17R, MW-18, MW-29, WW-North, WW-South, Dup-4, WW-East, EB-08-18-16-A, EB-08-18-16-B
  - Manganese: MW-2, MW-8, MW-29, WW-North, EB-08-18-16-A
  - Nickel: MW-2, MW-6, MW-8, MW-12R, MW-14, MW-17R, MW-18, MW-29, WW-North, WW-South, Dup-4, WW-East, EB-08-18-16-A, EB-08-18-16-B
  - Zinc: MW-2, MW-6, MW-8, MW-14, MW-18, MW-29, WW-North, WW-South, Dup-4, WW-East

- In August 2016, mercury was detected in laboratory method blank WG901226. Mercury was not detected in MW-6, MW-14, MW-17R, MW-29, WW-East, EB-08-18-16-A, and EB-08-18-16-B; therefore, there are no data interpretation issues associated with the detection of mercury in this method blank. Mercury was detected in associated samples MW-2, MW-8, MW-12R, MW-18, WW-North, WW-South, and Dup-4 at concentrations within five times the method blank concentration and therefore may include measurement contributions from laboratory sources.
- In August 2016, the following compounds were detected in laboratory method blank WG901124: aluminum, chromium, copper, iron, lead, manganese, molybdenum, nickel, and potassium. Molybdenum and potassium were not detected in any associated samples at concentrations within five times the blank concentration; therefore, there are no data interpretation issues associated with detection of these compounds in this method blank. These compounds were detected in the following associated samples at concentrations within five times the associated method blank concentrations and therefore may include measurement contributions from laboratory sources:
  - Aluminum: MW-1, MW-4, MW-5, MW-13, MW-15, MW-16, MW-19, MW-20, MW-22, MW-24, MW-25, MW-28, MW-30, Dup-1, Dup-2, Dup-3
  - Chromium: MW-1, MW-4, MW-5, MW-13, MW-15, MW-16, MW-19, MW-20, MW-22, MW-24, MW-25, MW-28, MW-30, Dup-1, Dup-2, Dup-3
  - Copper: MW-1, MW-4, MW-5, MW-13, MW-15, MW-16, MW-19, MW-22, MW-24, MW-25, Dup-1, Dup-2, Dup-3
  - Iron: MW-1, MW-4, MW-5, MW-13, MW-16, MW-19, MW-20, MW-24, MW-25, MW-28, Dup-1, Dup-3

- Lead: MW-20
- Manganese: MW-1, MW-4, MW-5, MW-19, MW-20, MW-22, MW-24, MW-28
- Nickel: MW-4, MW-5, MW-19, MW-20, MW-22, MW-24, MW-25, MW-28, MW-30, Dup-2

- In August 2016, aluminum, calcium, chromium, copper, manganese, nickel, and potassium were detected in laboratory method blank WG901422. Calcium, manganese, and potassium were not detected in associated sample MW-21 at concentrations within five times the blank concentration; therefore, there are no data interpretation issues associated with detection of these compounds in this method blank. Aluminum, chromium, copper, and nickel were detected in associated sample MW-21 at concentrations within five times the method blank concentration and therefore may include measurement contributions from laboratory sources.
- In August 2016, di-n-butyl phthalate and di-n-octyl phthalate were detected in laboratory method blanks WG901058 and WG902203. Di-n-butyl phthalate and di-n-octyl phthalate were detected in associated samples at concentrations within ten times the method blank concentration and therefore may include measurement contributions from laboratory sources.
- In December 2016, dissolved aluminum and dissolved manganese were detected in laboratory method blank WG934836. Dissolved aluminum was detected in associated samples WW-North, WW-South, WW-South D, and WW-East at concentrations within five times the method blank concentration and therefore may include measurement contributions from laboratory sources. Dissolved manganese was detected in associated samples WW-North at concentrations within five times the method blank and therefore may include measurement contributions from laboratory sources.
- In December 2016, di-n-octyl phthalate was detected in laboratory method blank WG934274. Samples with a di-n-octyl phthalate detection were at concentrations within ten times the method blank concentration and therefore may include measurement contributions from laboratory sources.

5.1.2 Equipment Blanks

- In March 2016, the following compounds were detected in equipment blank EB-3-10-16-A: aluminum, boron, manganese, nickel, zinc, and benzaldehyde. Data interpretation issues were identified for the following compounds and samples:

- Aluminum was detected in MW-1, MW-6, MW-12R, MW-13, MW-15, MW-17R, MW-25, MW-29, MW-30, WW-North, WW-South, WW-East, and Dup-1 at concentrations within five times the blank concentration and may include measurement contributions from inadequate decontamination of field equipment or from laboratory sources as discussed above.

- Manganese was detected in MW-1, MW-12R, MW-13, MW-15, MW-29, MW-30, WW-North, WW-South, WW-East, and Dup-1 at concentrations within five times the blank concentration and may include measurement contributions from inadequate decontamination of field equipment.

- Nickel was detected in samples MW-1, MW-6, MW-12R, MW-13, MW-15, MW-17R, MW-25, MW-29, MW-30, WW-North, WW-South, WW-East, and Dup-1 within five times the maximum equipment blank concentration and may include measurement contributions from inadequate decontamination of field equipment.

- Zinc was detected in MW-1, MW-6, MW-13, MW-15, MW-17R, MW-25, WW-North, WW-South, WW-East, and Dup-1 at concentrations within five times the blank concentration and may include measurement contributions from inadequate decontamination of field equipment or from laboratory sources as discussed above.

- In August 2016, the following compounds were detected in equipment blank EB-3-10-16-A: TDS, alkalinity, boron, calcium, chromium, copper, manganese, nickel, sodium, benzaldehyde, and di-n-butyl phthalate. The following compounds were detected in equipment blank EB-3-10-16-B: TDS, nitrate-nitrite, chloride, boron, calcium, chromium, copper, nickel, benzaldehyde, and di-n-butyl phthalate. Data interpretation issues were identified for the following compounds and samples:

  - Chromium was detected in samples MW-1, MW-2, MW-4, MW-5, MW-6, MW-8, MW-12R, MW-13, MW-14, MW-15, MW-16, MW-17R, MW-18, MW-19, MW-20, MW-21, MW-22, MW-24, MW-25, MW-28, MW-30, WW-North, WW-South, WW-East, Dup-1, Dup-2, Dup-3, and Dup-4 at concentrations within five times the blank concentration and may include measurement contributions from inadequate decontamination of field equipment or from laboratory sources as discussed above.

  - Copper was detected in samples MW-1, MW-2, MW-4, MW-5, MW-6, MW-8, MW-12R, MW-13, MW-14, MW-15, MW-16, MW-17R, MW-18, MW-19, MW-21, MW-22, MW-24, MW-25, MW-29, WW-North, WW-South, WW-East, Dup-1, Dup-2, Dup-3, and Dup-4 at concentrations within five times the blank concentration and may include measurement contributions from inadequate decontamination of field equipment or from laboratory sources as discussed above.

- Manganese was detected in samples MW-2, MW-4, MW-5, MW-8, MW-19, MW-20, MW-22, MW-24, MW-28, MW-29, and WW-North at concentrations within five times the blank concentration and may include measurement contributions from inadequate decontamination of field equipment or from laboratory sources as discussed above.

- Nickel was detected in samples MW-2, MW-4, MW-5, MW-6, MW-8, MW-12R, MW-13, MW-14, MW-17R, MW-18, MW-19, MW-20, MW-21, MW-22, MW-24, MW-28, MW-29, MW-30, WW-North, WW-South, WW-East, Dup-2, and Dup-4 at concentrations within five times the blank concentration and may include measurement contributions from inadequate decontamination of field equipment. With the exception of MW-13, these samples also may include measurement contributions from laboratory sources as discussed above.

- Di-n-butyl phthalate was detected in all samples, except MW-19 which was non-detect, in August 2016 at concentrations within ten times the blank concentration and may include measurement contributions from inadequate decontamination of field equipment or from laboratory sources as discussed above.

5.1.3 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

- In March 2016, MS/MSD recoveries of select compounds did not meet laboratory-defined limits in the following samples, and therefore the results may be biased as specified:

  - WW-North:

    - MS/MSD recoveries for alkalinity were below the laboratory-defined limits, and therefore the alkalinity result in this sample may be biased low.

    - MSD recovery for sulfate was above the laboratory-defined limits, and therefore the sulfate result in this sample may be biased high.

  - WW-East: The MS recovery for nitrate-nitrite was below the laboratory-defined limits, and therefore the nitrate-nitrite result in this sample may be biased low.

  - MW-28: MS/MSD recoveries for alkalinity were below the laboratory-defined limits, and therefore the alkalinity result in this sample may be biased low.

  - MW-3: The MS recovery for nitrate-nitrite was below the laboratory-defined limits, and therefore the nitrate-nitrite result in this sample may be biased low.

- In August 2016, MS/MSD recoveries of select compounds did not meet laboratory-defined limits in the following samples, and therefore the results may be biased as specified:
  - WW-North: MS/MSD recoveries for alkalinity were below the laboratory-defined limits, and therefore the alkalinity result in this sample may be biased low.
  - WW-South: MS/MSD recoveries for alkalinity were below the laboratory-defined limits, and therefore the alkalinity result in this sample may be biased low
- In December 2016, MS/MSD recoveries of select compounds did not meet laboratory-defined limits in the following sample, and therefore the results may be biased as specified:
  - WW-North:
    - MS/MSD recoveries for alkalinity were below the laboratory-defined limits, and therefore the alkalinity result in this sample may be biased low.
    - The RPD and MSD percent recovery for di-n-octyl phthalate were outside of the laboratory-defined limits in batch WG934274. The detection in sample WW-North may be biased high.

5.1.4 Laboratory Duplicates

There were no data interpretation issues associated with laboratory duplicate analyses in March 2016, May 2016, or December 2016. In August 2016, the relative percent difference (RPD) of alkalinity for sample EB-08-18-16-A exceeded the laboratory-defined control limit and therefore the alkalinity result in this sample may be biased high.

6.0 2016 RELEASES AND REMEDIATION ACTIVITIES

No reportable releases occurred at the refinery in 2016. On November 11, 2015, during construction activities at the asphalt loading rack, HEP discovered stained soil with a hydrocarbon odor that was indicative of a historical release. HEP and Navajo both notified OCD of the historical release discovery. HEP conducted soil assessment and abatement activities in November 2015 and December 2015 and additional soil investigation activities in March 2016. Navajo documented the activities and results of the HEP investigation in a letter report to the OCD on September 15, 2016. Navajo conducted additional soil and groundwater investigation activities in December 2016 in accordance with OCD comments provided in emails on September 16, 2016, and December 1, 2016. Investigation of the asphalt loading rack historical release is still ongoing in accordance with OCD directives. Results of the December 2016 investigation and an upcoming additional soil and groundwater investigation will be documented in a forthcoming report to the OCD.

7.0 MONITOR WELL ABANDONMENT AND INSTALLATION

Groundwater investigation activities were conducted on December 17, 2016 to (1) replace monitoring well MW-11, which was dry to declining groundwater elevations, and (2) assess groundwater beneath the asphalt loading rack as part of historical release investigation activities. Monitoring well MW-11 was plugged and abandoned and replacement well MW-11R was installed in close proximity to the former well location. Monitoring well MW-31 was installed within the asphalt loading rack area in accordance with OCD requests (in emails on September 16, 2016, and December 1, 2016). The locations of these monitoring wells are shown on Figure 2.

Well abandonment and installation activities are described below. Results of the groundwater investigation conducted at the asphalt loading rack will be provided to the OCD under separate cover in the forthcoming report which will also document upcoming additional soil and groundwater investigation.

7.1 Well Abandonment

Monitoring well MW-11 was plugged and abandoned on December 17, 2016, under permit L-14228 by the OSE. The groundwater elevation in this well had steadily declined since the well was installed in 2002 until the well was dry during the August 2016 semi-annual monitoring event. A replacement well (MW-11R) was installed as detailed below.

Monitoring wells MW-11 was plugged in accordance with the plugging permit by pressure filling the casing with cement grout from total depth to land surface. The grout was allowed to settle and any remaining void was filled with additional cement grout. The upper portion of the top of casing was cut below ground surface and removed. The OSE Plugging Record for MW-11 is provided in Appendix E.

7.2 Well Installation

Monitoring wells MW-11R and MW-31 were installed on December 17, 2016 under OSE permit L-14228 using air-rotary drilling methods. The return cutting from the borehole were continuously collected with a clean shovel; described based on lithology, moisture content, and notable presence of contamination (i.e., odor and staining); and field screened for organic compounds using a photoionization device (PID). Discrete soil samples were collected from MW-31 at select depths for laboratory analysis using a split-spoon sampler as part of historical release investigation activities. The monitoring wells were constructed using 2-inch diameter Schedule 40 polyvinyl chloride (PVC) casing and twenty linear feet of 0.010-inch machine-slot PVC screen. The well screens were installed across the saturated zone-vadose zone interface. The annular space was filled with 8/16-grade silica sand to approximately 2 feet above the screen. The annular space above the sand pack was sealed using hydrated 3/8-inch bentonite chips above the sand pack to 2 feet below the ground surface (bgs) and Portland cement from 2 feet bgs to the ground surface.

Each monitoring well was completed with a concrete pad and either a flush-grade steel cover (MW-31) or a stickup, steel protective cover (MW-11R). Soil boring/well construction logs and OSE Well Records for MW-11R and MW-31 are provided in Appendix E. Upon completion, the monitor wells were developed by surging and purging using a submersible pump.

8.0 CONCLUSIONS

Conclusions based on data collected during groundwater monitoring activities conducted during calendar year 2016 (reporting year 2016) are discussed below.

Groundwater flow directions were consistent with previous groundwater monitoring events. Groundwater elevations decreased an average of 0.77 feet from February 2015 to March 2016 and an average of 1.02 feet from August 2015 to August 2016. PSH was not detected in any monitoring wells. Groundwater elevations have continually decreased from June 2009 to August 2016. These reductions in groundwater are likely caused by limited recharge and active pumping from on-site water supply wells and City of Lovington water supply wells located northwest and west (i.e., upgradient) of the refinery.

No VOCs were reported at concentrations above WQCC Standards in any well during any semi-annual or quarterly sampling events. Navajo installed and maintained ORC® socks in well MW-11 throughout 2016 as an interim corrective action for historically elevated benzene concentrations in this well until the well was dry in August 2016. No SVOCs were reported at concentrations above WQCC Standards in any well during either semi-annual monitoring event. TPH DRO was reported above the NMED groundwater screening level for Diesel #2 (in wells MW-21 and MW-22) in August 2016. There is no WQCC Standard for TPH and no indicator VOCs or SVOCs were detected in samples collected from MW-21 and MW-22.

Anion exceedances of WQCC Standards reported during 2016 included chloride (in wells MW-8, MW-19, MW-25, and WW-South) and fluoride (in well MW-28) in March 2016; and chloride (in wells MW-13, MW-19, MW-23, MW-25, and WW-South) and fluoride (in wells MW-5 and MW-24) in August 2016. The presence of select anions at concentrations above WQCC Standards in select wells is due to off-site sources, background concentrations, and/or non-Navajo sources at the refinery.

TDS was reported at concentrations above its WQCC Standard in wells MW-8, MW-19, MW-25, and WW-South during the March 2016 semi-annual monitoring event and in MW-13, MW-19, MW-23, MW-25, and WW-South during the August 2016 semi-annual monitoring event. The presence of TDS at concentrations above WQCC Standards in select wells is due to off-site sources, background concentrations, and/or non- Navajo sources at the refinery.

There were no metal exceedances of WQCC Standards during the March 2016 semi-annual monitoring event. Manganese exceeded the WQCC Standard in well MW-13 during the August 2016 semi-annual monitoring event. The presence of select metals at concentrations above WQCC Standards historically in select wells is due to off-site sources, background concentrations, and/or non- Navajo sources at the refinery.

No constituents exceeded WQCC Standards in wells located along the southeastern refinery boundary (wells MW-5, MW-12R, MW-14, and MW-22), which is the natural downgradient portion of the facility (i.e., if active pumping from the on-site water supply wells ceased). Groundwater pumping from refinery water supply wells WW-East, WW-North, and WW-South for industrial use causes radial groundwater flow towards a cone of depression at the central portion of the refinery preventing migration of constituents offsite, but also enables onsite migration of constituents from offsite sources (i.e., active oil production and injection wells).

WQCC Standards were not exceeded in any of the quarterly samples collected from refinery water supply wells WW-North, WW-South, and WW-East with the exceptions of chloride and TDS in WW-South during each quarterly event. Based on these results, the water poses no risk associated with continued use in refinery restrooms and safety showers.

9.0 WORK PLANNED FOR 2017

The following summarizes the scope of work planned for 2017 at the refinery:

- Conduct further investigation of the historical release at the asphalt loading rack in accordance with the work plan submitted to OCD on February 24, 2017, and OCD comments on March 17, 2017.
- Update the December 2015 Revised FWGWMWP to include MW-11R, MW-31, and any new wells that are installed during 2017 as part of additional groundwater investigation of the historical release at the asphalt loading rack.
- Conduct PSH recovery at well MW-31. PSH was discovered in the new well MW-31 located at the asphalt loading rack during the February 2017 semi-annual monitoring event. PSH will be recovered via manual bailing periodically pending additional evaluation and design of an optimal recovery program.
- Implement semi-annual groundwater monitoring and annual reporting activities in accordance with the sampling and analysis plan presented in the December 2015 Revised FWGWMWP with updates as appropriate. Navajo will continue to evaluate revisions to the sampling plan based on historical analytical trends in groundwater.
- Continue to implement quarterly water supply well monitoring in accordance with OCD's May 16, 2014, letter, Navajo's response letter on June 20, 2014, and the December 2015 Revised FWGWMWP.
- Determine if interim corrective action of benzene in replacement well MW-11R is warranted. ORC® socks were previously installed in former well MW-11 to promote enhanced aerobic biodegradation of historically detected benzene in groundwater in MW-11. Benzene was not detected in MW-11R during the February 2017 semi-annual monitoring event.
- Evaluate and replace monitor wells that are screened at depths too shallow for optimal monitoring of the current groundwater elevation, which has continually decreased from June 2009 to August 2016.

FIGURES

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LEGEND

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

BASEMAP: GOOGLE EARTH AND THEIR DATA PARTNERS, 2017.

N

1 inch = 700 feet

0 350 700 1,400

Feet

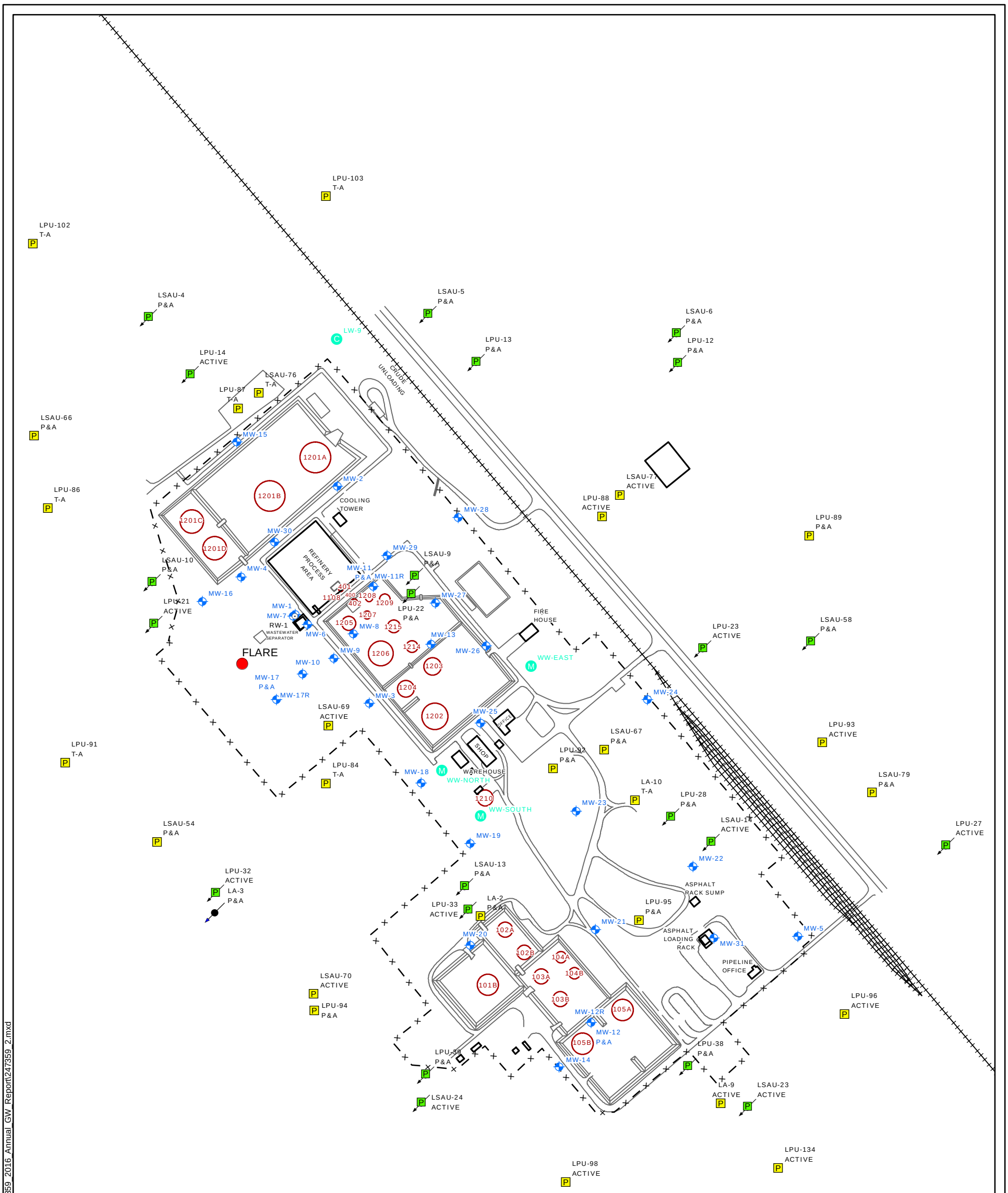
REFINERY VICINITY MAP

HOLLYFRONTIER NAVAJO REFINING LLC
AP-110, LOVINGTON FACILITY, LOVINGTON, NM

PROJECT NO: 247359	MXD: 247359_1
AUTHOR: MFL	DATE: 3/31/2017

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

FIGURE 1



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LEGEND

- INJECTION WELL
- MONITORING WELL
- OIL PRODUCTION WELL
- OIL PRODUCTION-CONVERTED TO INJECTION WELL
- RECOVERY WELL
- REFINERY WATER SUPPLY WELL
- CITY OF LOVINGTON WATER SUPPLY WELL
- WATER WELL
- FLARE
- RAIL
- FENCE
- BUILDINGS
- TANKS

N

0 250 500 1,000

FEET

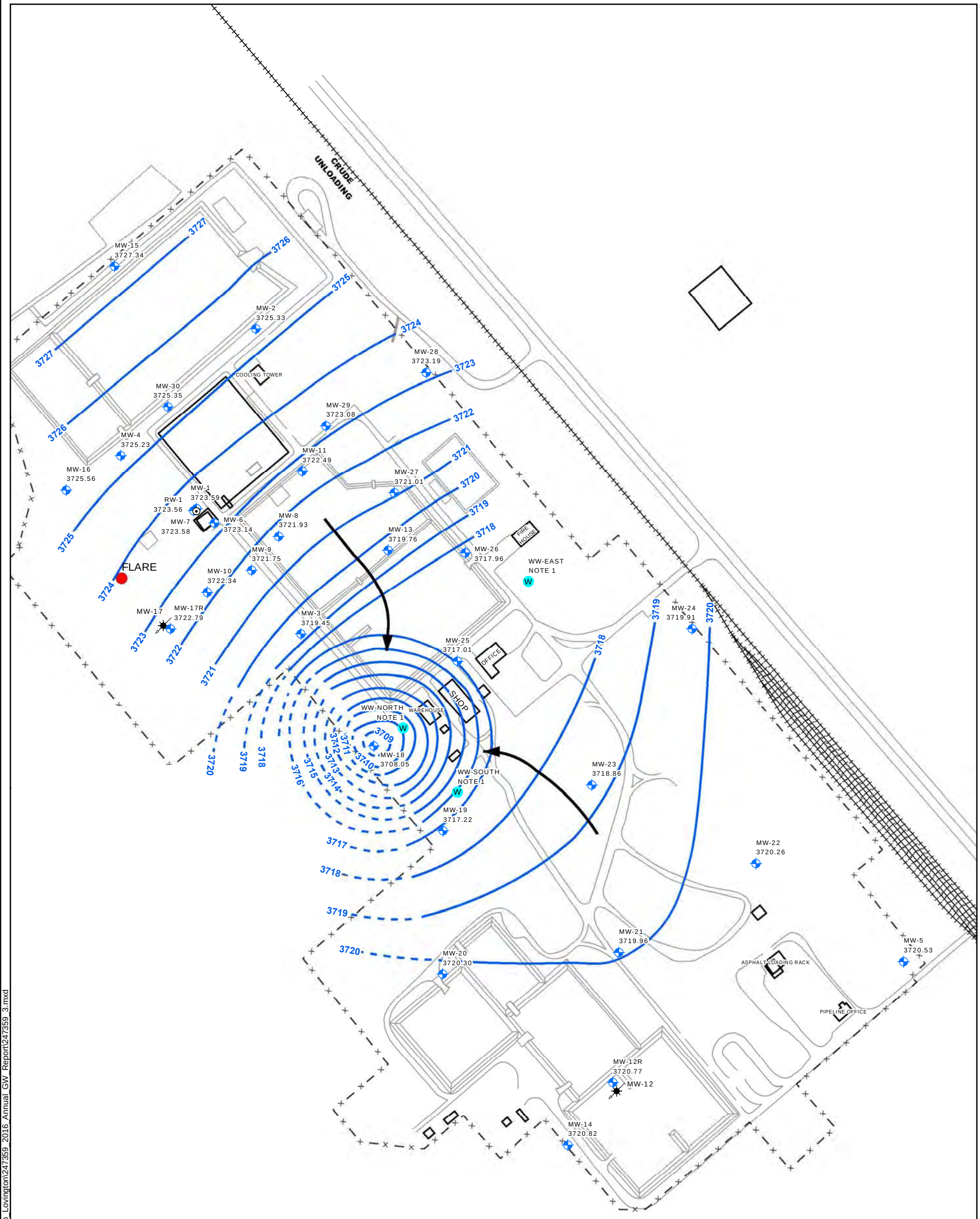
REFINERY SITE PLAN

HOLLYFRONTIER NAVAJO REFINING LLC
AP-110, LOVINGTON FACILITY, LOVINGTON, NM

PROJECT NO: 247359	MXD: 247359_2
AUTHOR: MFL	DATE: 4/13/2017

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

FIGURE
2



Document Path: J:\Holly_Energy_Partners\Navajo_Lovington\247359_2016_Annual_GW_Report\247359_3.mxd

NOTES:
1. WELL NOT ACCESSIBLE FOR GAUGING.
2. WELLS GAUGED ON MARCH 7, 2016.

LEGEND

- GROUNDWATER CONTOURS (DASHED WHERE INFERRED)
- MONITORING WELL
- PLUGGED AND ABANDONED MONITORING WELL
- RECOVERY WELL
- WATER WELL
- FLARE
- FENCE
- RAIL
- GROUNDWATER FLOW DIRECTION
- 3727.34 GROUNDWATER ELEVATION (FEET)
- BUILDINGS

N

0 175 350 700
FEET

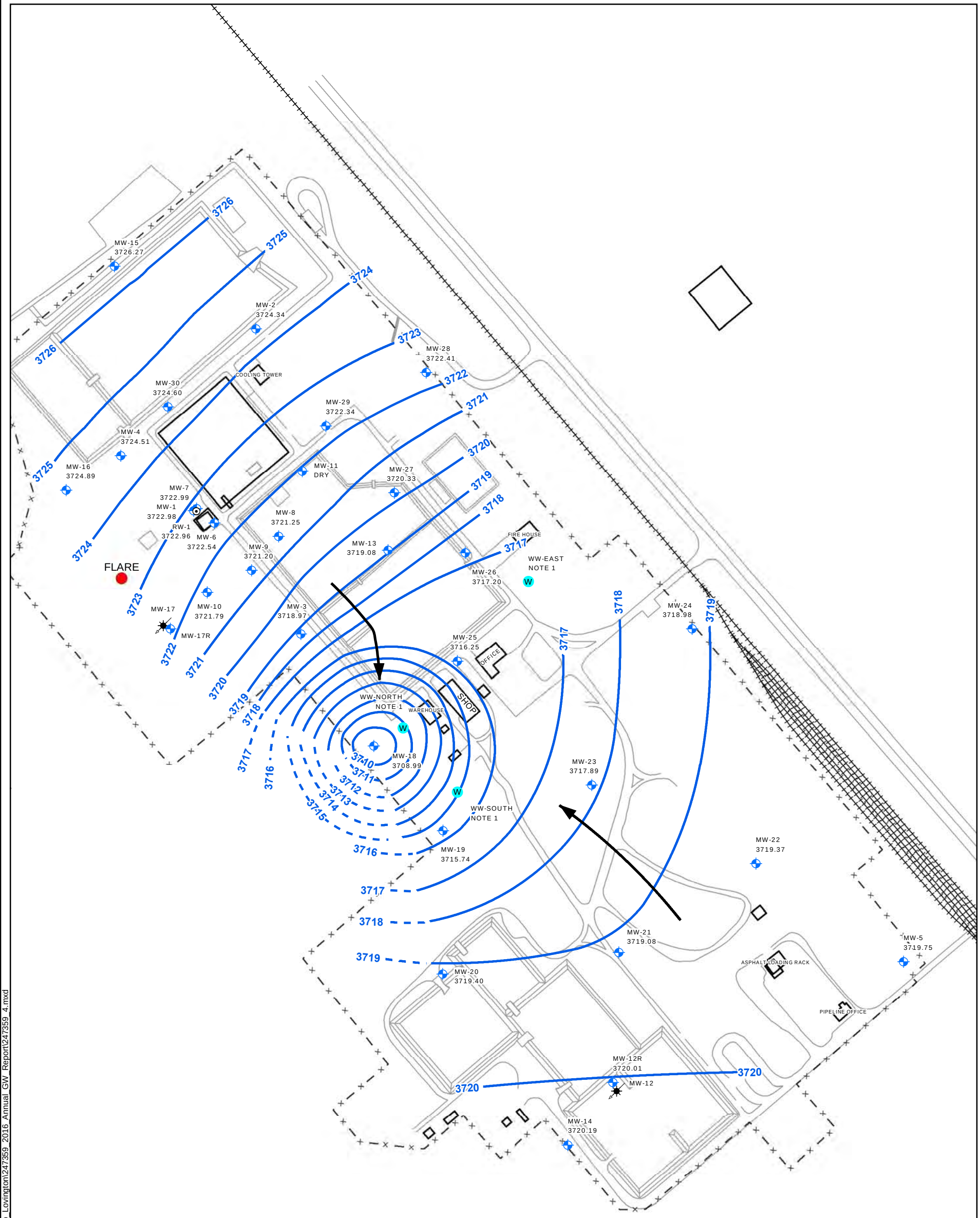
GROUNDWATER POTENTIOMETRIC SURFACE MAP - MARCH 2016

HOLLYFRONTIER NAVAJO REFINING LLC
AP-110, LOVINGTON FACILITY, LOVINGTON, NM

PROJECT NO: 247359	MXD: 247359_3
AUTHOR: MREEVES	DATE: 4/13/2017

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

FIGURE 3



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NOTES:
1. WELL NOT ACCESSIBLE FOR GAUGING.
2. WELLS GAUGED ON AUGUST 15, 2016.

LEGEND

- GROUNDWATER CONTOURS (DASHED WHERE INFERRED)
- MONITORING WELL
- PLUGGED AND ABANDONED MONITORING WELL
- RECOVERY WELL
- WATER WELL
- FLARE
- FENCE
- RAIL
- GROUNDWATER FLOW DIRECTION
- 3720.19 GROUNDWATER ELEVATION (FEET)
- BUILDINGS

N

0 175 350 700
FEET

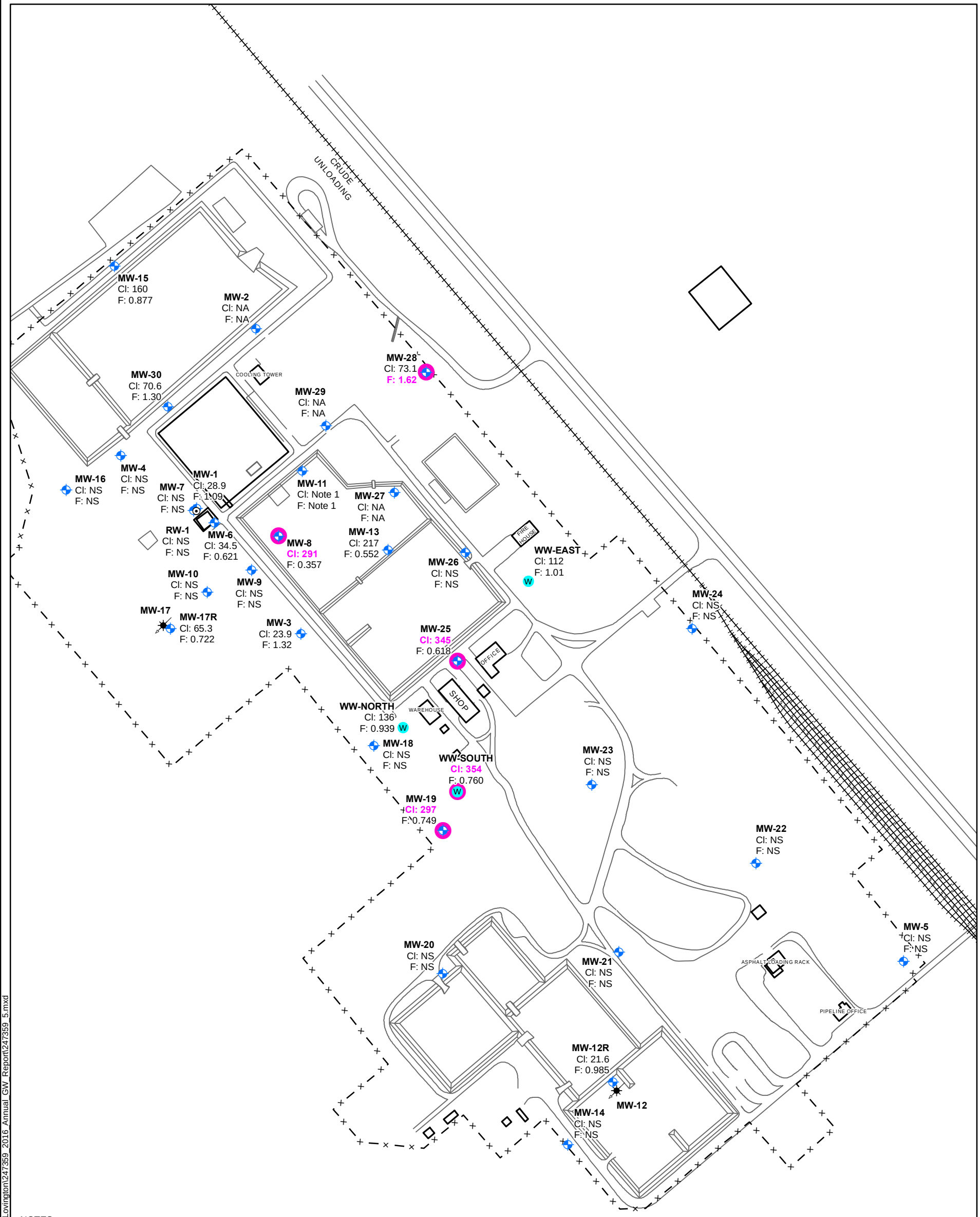
GROUNDWATER POTENTIOMETRIC SURFACE MAP - AUGUST 2016

HOLLYFRONTIER NAVAJO REFINING LLC
AP-110, LOVINGTON FACILITY, LOVINGTON, NM

PROJECT NO: 247359	MXD: 247359_4
AUTHOR: MREEVES	DATE: 4/13/2017

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

FIGURE
4



NOTES:
1. NOT ANALYZED DUE TO INSUFFICIENT WATER VOLUME.
2. NA = NOT ANALYZED (NOTE 6).
3. NS = NOT SAMPLED (NOTE 6).
4. ALL CONCENTRATIONS IN MG/L.
5. CHLORIDE AND FLUORIDE CONCENTRATIONS SHOWN FOR ALL WELLS BECAUSE THEY ARE THE ONLY ANIONS THAT EXCEEDED THEIR RESPECTIVE WQCC STANDARDS.
6. NOT ANALYZED OR SAMPLED IN ACCORDANCE WITH DECEMBER 2015 REVISED FACILITY-WIDE GROUNDWATER MONITORING WORK PLAN.

LABEL KEY:
Cl: 21.6 - CHLORIDE CONCENTRATION (WQCC STANDARD = 250 mg/L)
F: 0.985 - FLUORIDE CONCENTRATION (WQCC STANDARD = 1.6 mg/L)

PINK HIGHLIGHTED VALUES IN EXCEEDANCE OF WQCC STANDARD.

LEGEND

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

N

0 175 350 700
FEET

ANIONS
CONCENTRATION MAP - MARCH 2016

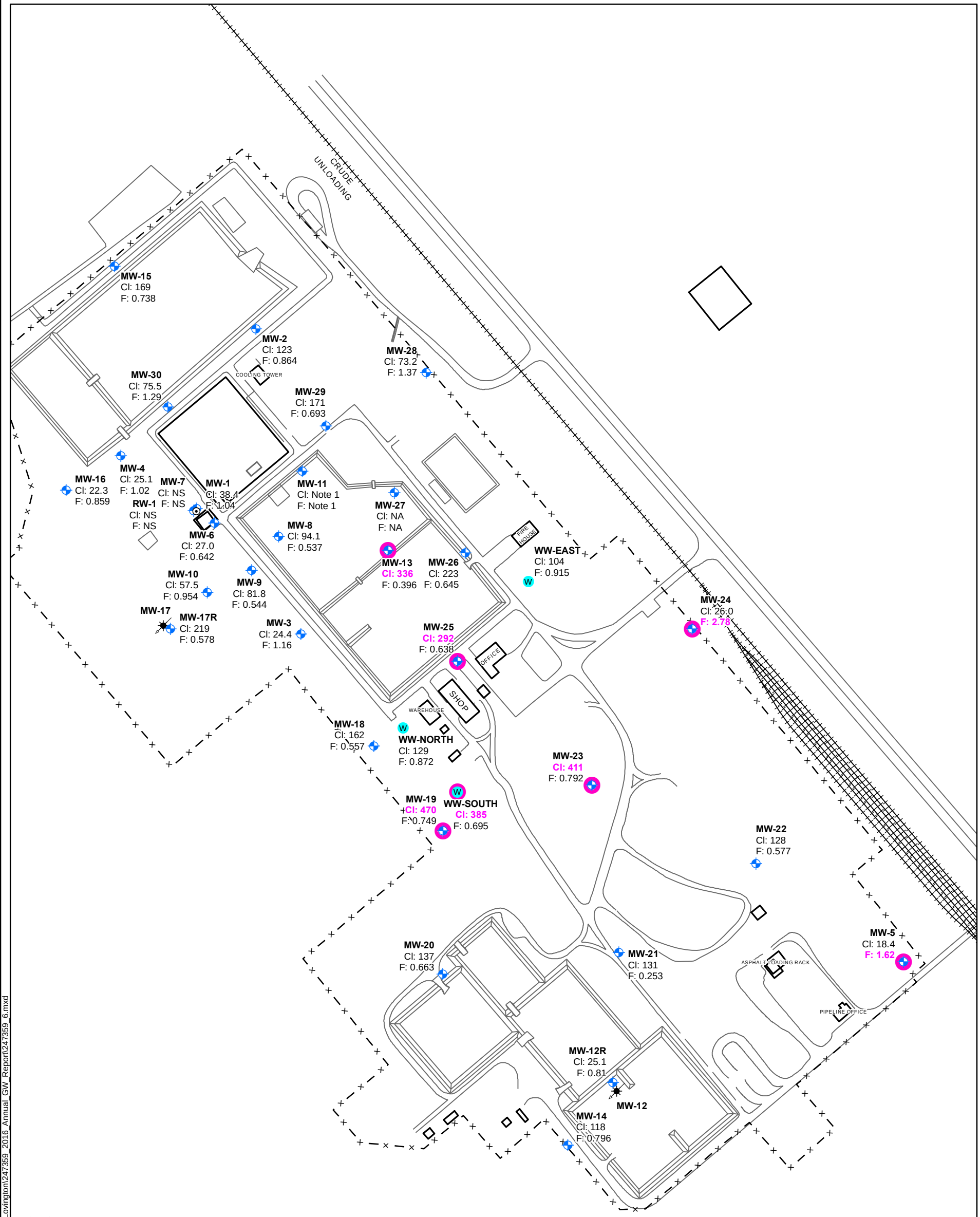
HOLLYFRONTIER NAVAJO REFINING LLC
AP-110, LOVINGTON FACILITY, LOVINGTON, NM

PROJECT NO: 247359	MXD: 247359_5
AUTHOR: MREEVES	DATE: 4/13/2017

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

FIGURE 5

Document Path: J:\Holly_Energy_Partners\Navajo_Lovington\247359_2016_Annual_GW_Report\247359_5.mxd



NOTES:
1. NOT ANALYZED DUE TO INSUFFICIENT WATER VOLUME.
2. NA = NOT ANALYZED (NOTE 6).
3. NS = NOT SAMPLED (NOTE 6).
4. ALL CONCENTRATIONS IN MG/L.
5. CHLORIDE AND FLUORIDE CONCENTRATIONS SHOWN FOR ALL WELLS BECAUSE THEY ARE THE ONLY ANIONS THAT EXCEEDED THEIR RESPECTIVE WQCC STANDARDS.
6. NOT ANALYZED OR SAMPLED IN ACCORDANCE WITH DECEMBER 2015 REVISED FACILITY-WIDE GROUNDWATER MONITORING WORK PLAN.

LABEL KEY:
Cl: 81.8 - CHLORIDE CONCENTRATION (WQCC STANDARD = 250 mg/L)
F: 0.544 - FLUORIDE CONCENTRATION (WQCC STANDARD = 1.6 mg/L)

PINK HIGHLIGHTED VALUES IN EXCEEDANCE OF WQCC STANDARD.

LEGEND

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

N

0 175 350 700
FEET

ANIONS
CONCENTRATION MAP - AUGUST 2016

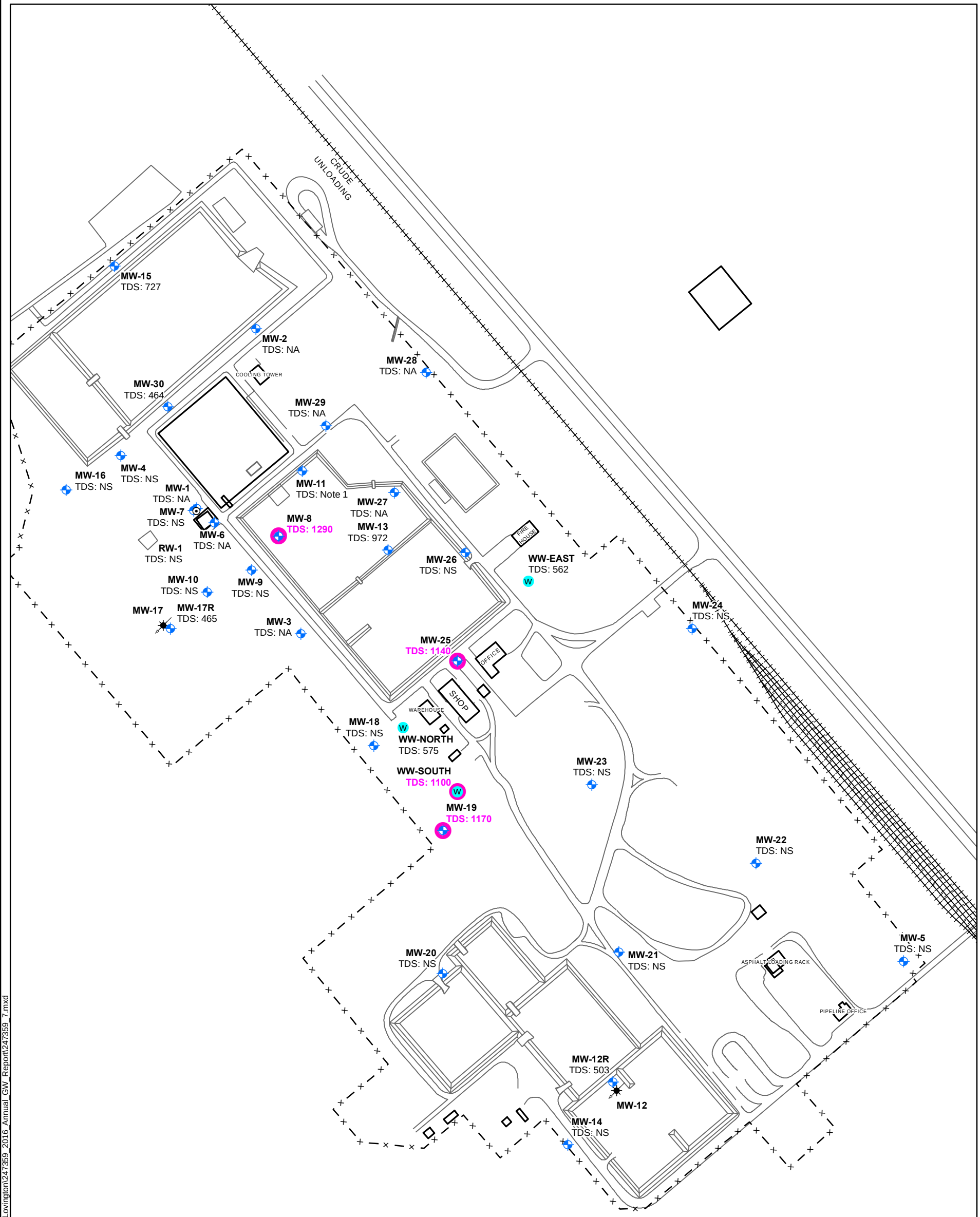
HOLLYFRONTIER NAVAJO REFINING LLC
AP-110, LOVINGTON FACILITY, LOVINGTON, NM

PROJECT NO: 247359	MXD: 247359_6
AUTHOR: MREEVES	DATE: 4/13/2017

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

FIGURE 6

Document Path: J:\Holly_Energy_Partners\Navajo_Lovington\247359_2016_Annual_GW_Report\247359_6.mxd



NOTES:
1. NOT ANALYZED DUE TO INSUFFICIENT WATER VOLUME.
2. NA = NOT ANALYZED (NOTE 5).
3. NS = NOT SAMPLED (NOTE 5).
4. ALL CONCENTRATIONS IN MG/L.
5. NOT ANALYZED OR SAMPLED IN ACCORDANCE WITH DECEMBER 2015 REVISED FACILITY-WIDE GROUNDWATER MONITORING WORK PLAN.

LABEL KEY:
TDS: 503 - TOTAL DISSOLVED SOLIDS CONCENTRATION (WQCC STANDARD = 1,000 mg/L)

PINK HIGHLIGHTED VALUES IN EXCEEDANCE OF WQCC STANDARD.

LEGEND

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

N

0 175 350 700
FEET

TOTAL DISSOLVED SOLIDS CONCENTRATION MAP - MARCH 2016

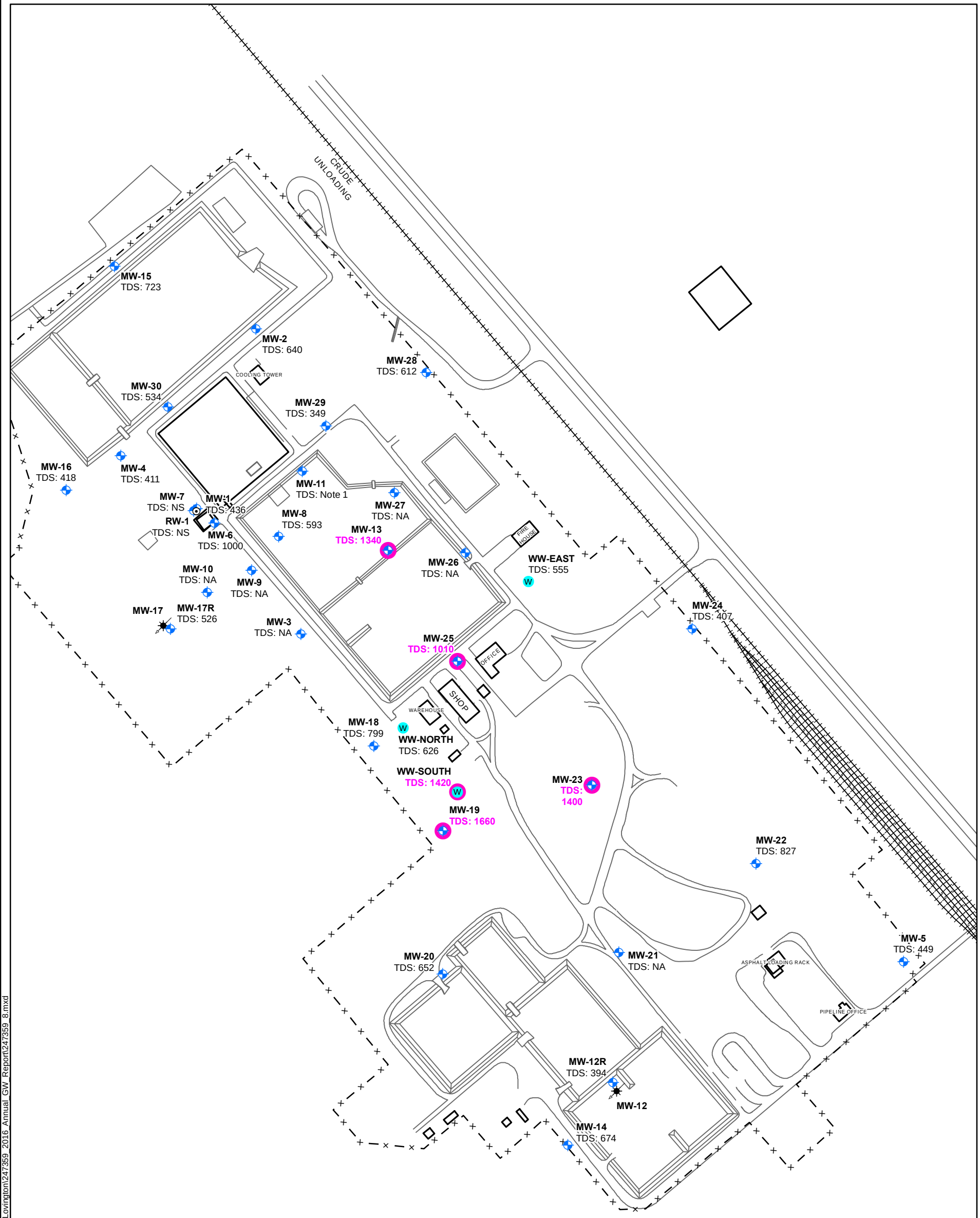
HOLLYFRONTIER NAVAJO REFINING LLC
AP-110, LOVINGTON FACILITY, LOVINGTON, NM

PROJECT NO: 247359	MXD: 247359_7
AUTHOR: MREEVES	DATE: 4/13/2017

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

FIGURE 7

Document Path: J:\Holly_Energy_Partners\Navajo_Lovington\247359_2016_Annual_GW_Report\247359_7.mxd



NOTES:
1. NOT ANALYZED DUE TO INSUFFICIENT WATER VOLUME.
2. NA = NOT ANALYZED (NOTE 5).
3. NS = NOT SAMPLED (NOTE 5).
4. ALL CONCENTRATIONS IN MG/L.
5. NOT ANALYZED OR SAMPLED IN ACCORDANCE WITH DECEMBER 2015 REVISED FACILITY-WIDE GROUNDWATER MONITORING WORK PLAN.

LABEL KEY:
TDS: 652 - TOTAL DISSOLVED SOLIDS CONCENTRATION (WQCC STANDARD = 1,000 mg/L)

PINK HIGHLIGHTED VALUES IN EXCEEDANCE OF WQCC STANDARD.

LEGEND

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

N

0 175 350 700
FEET

TOTAL DISSOLVED SOLIDS CONCENTRATION MAP - AUGUST 2016

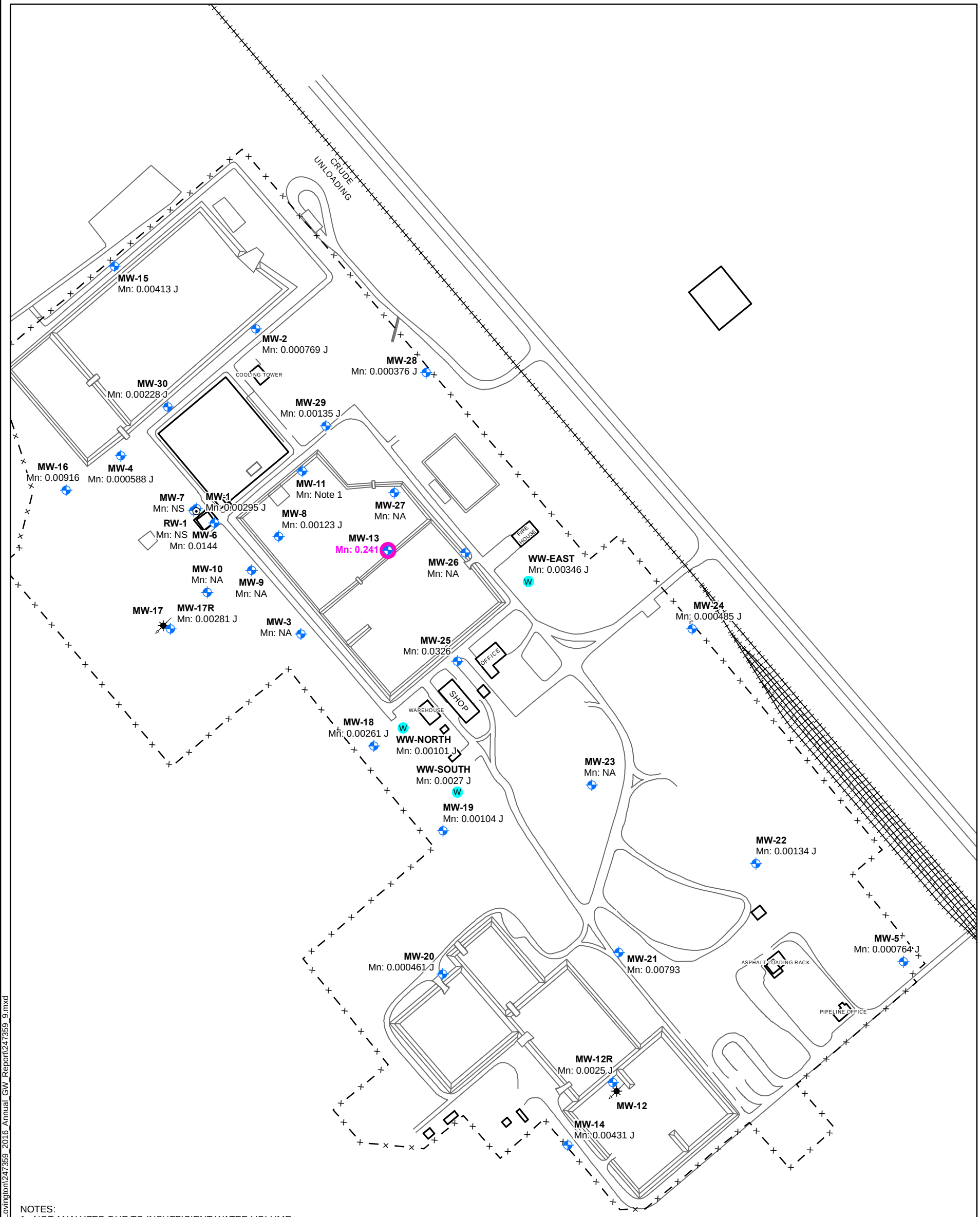
HOLLYFRONTIER NAVAJO REFINING LLC
AP-110, LOVINGTON FACILITY, LOVINGTON, NM

PROJECT NO: 247359	MXD: 247359_8
AUTHOR: MREEVES	DATE: 4/13/2017

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

FIGURE 8

Document Path: J:\Holly_Energy_Partners\Navajo_Lovington\247359_2016_Annual_GW_Report\247359_8.mxd



NOTES:
1. NOT ANALYZED DUE TO INSUFFICIENT WATER VOLUME.
2. NA = NOT ANALYZED (NOTE 7).
3. NS = NOT SAMPLED (NOTE 7).
4. ALL CONCENTRATIONS IN MG/L.
5. MANGANESE IS SHOWN FOR ALL WELLS BECAUSE IT IS THE ONLY METAL THAT HAS EXCEEDED ITS RESPECTIVE WQCC STANDARD.
6. J = ANALYTE DETECTED BELOW REPORTING LIMIT, ESTIMATED VALUE.
7. NOT ANALYZED OR SAMPLED IN ACCORDANCE WITH DECEMBER 2015 REVISED FACILITY-WIDE GROUNDWATER MONITORING WORK PLAN.

LABEL KEY:
Mn: 0.0025 - MANGANESE CONCENTRATION (WQCC STANDARD = 0.20 mg/L)

PINK HIGHLIGHTED VALUES IN EXCEEDANCE OF WQCC STANDARD.

LEGEND

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

N

0 175 350 700
FEET

METALS CONCENTRATION MAP - AUGUST 2016

HOLLYFRONTIER NAVAJO REFINING LLC
AP-110, LOVINGTON FACILITY, LOVINGTON, NM

PROJECT NO: 247359	MXD: 247359_9
AUTHOR: MREEVES	DATE: 4/13/2017

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

FIGURE 9

Document Path: J:\Holly_Energy_Partners\Navajo_Lovington\247359_2016_Annual_GW_Report\247359_9.mxd

TABLES

Table 1. Water Elevation Measurements

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Top of Casing Elevation (feet)	Well Screen Interval (feet)	Date	Depth to Product (feet, btoc)	Depth to Water (feet, btoc)	Total Depth (feet)	Product Thickness (feet)	Corrected Depth to Water (feet)	Corrected Water Level Elev. (feet)	Change from previous measurement (ft)
MW-1 [1,5]	3,838.40	3,739.19 to 3,709.19	04/30/09	- -	106.35	136.10	0.00	106.35	3,732.05	NA
			06/10/09	- -	106.49	NM	0.00	106.49	3,731.91	-0.14
			06/19/09	- -	106.57	129.12	0.00	106.57	3,731.83	-0.08
			07/02/09	- -	106.74	129.13	0.00	106.74	3,731.66	-0.17
			07/24/09	- -	106.83	129.11	0.00	106.83	3,731.57	-0.09
			09/24/09	- -	107.31	129.12	0.00	107.31	3,731.09	-0.48
			10/27/09	- -	107.44	129.10	0.00	107.44	3,730.96	-0.13
			01/13/10	- -	107.57	129.11	0.00	107.57	3,730.83	-0.13
			04/01/10	- -	107.51	NM	0.00	107.51	3,730.89	0.06
			08/11/10	- -	108.09	129.16	0.00	108.09	3,730.31	-0.58
			02/23/11	- -	108.12	129.14	0.00	108.12	3,730.28	-0.03
			07/12/11	- -	109.00	129.11	0.00	109.00	3,729.40	-0.88
			02/02/12	- -	109.68	129.12	0.00	109.68	3,728.72	-0.68
			07/23/12	- -	110.88	128.87	0.00	110.88	3,727.52	-1.20
			02/18/13	- -	110.51	129.22	0.00	110.51	3,727.89	0.37
			08/19/13	- -	111.55	130.60	0.00	111.55	3,726.85	-1.04
			02/24/14	- -	112.49	129.35	0.00	112.49	3,725.91	-0.94
			08/18/14	- -	113.37	129.09	0.00	113.37	3,725.03	-0.88
			02/23/15	- -	113.82	129.20	0.00	113.82	3,724.58	-0.45
			08/24/15	- -	114.56	129.19	0.00	114.56	3,723.84	-0.74
			03/07/16	- -	114.81	129.19	0.00	114.81	3,723.59	-0.25
			08/15/16	- -	115.42	129.19	0.00	115.42	3,722.98	-0.61
MW-2 [1,5]	3,837.35	3,739.77 to 3,709.77	06/22/09	- -	104.32	126.41	0.00	104.32	3,733.03	NA
			01/13/10	- -	105.44	126.68	0.00	105.44	3,731.91	-1.12
			08/11/10	- -	105.97	126.42	0.00	105.97	3,731.38	-0.53
			02/23/11	- -	105.92	126.46	0.00	105.92	3,731.43	0.05
			07/12/11	- -	107.22	126.47	0.00	107.22	3,730.13	-1.30
			01/30/12	- -	107.55	126.47	0.00	107.55	3,729.80	-0.33
			07/23/12	- -	108.72	126.48	0.00	108.72	3,728.63	-1.17
			02/18/13	- -	108.15	126.69	0.00	108.15	3,729.20	0.57
			08/19/13	- -	109.43	126.75	0.00	109.43	3,727.92	-1.28
			02/24/14	- -	110.59	127.70	0.00	110.59	3,726.76	-1.16
			08/18/14	- -	111.25	126.58	0.00	111.25	3,726.10	-0.66
			02/23/15	- -	111.45	126.77	0.00	111.45	3,725.90	-0.20
			08/24/15	- -	112.13	126.75	0.00	112.13	3,725.22	-0.68
			03/07/16	- -	112.02	126.71	0.00	112.02	3,725.33	0.11
			08/15/16	- -	113.01	126.70	0.00	113.01	3,724.34	-0.99
MW-3 [1,5]	3,831.65	3,733.73 to 3,703.73	06/16/09	- -	102.65	130.45	0.00	102.65	3,729.00	NA
			01/13/10	- -	103.29	130.69	0.00	103.29	3,728.36	-0.64
			08/11/10	- -	104.82	130.42	0.00	104.82	3,726.83	-1.53
			09/28/10	- -	104.70	NM	0.00	104.70	3,726.95	0.12
			02/23/11	- -	104.11	130.47	0.00	104.11	3,727.54	0.59
			07/12/11	- -	104.89	130.50	0.00	104.89	3,726.76	-0.78
			01/30/12	- -	105.22	130.45	0.00	105.22	3,726.43	-0.33
			07/23/12	- -	107.59	130.46	0.00	107.59	3,724.06	-2.37
			02/18/13	- -	106.21	130.63	0.00	106.21	3,725.44	1.38
			08/19/13	- -	108.11	130.88	0.00	108.11	3,723.54	-1.90
			02/24/14	- -	108.45	130.75	0.00	108.45	3,723.20	-0.34
			08/18/14	- -	110.33	130.71	0.00	110.33	3,721.32	-1.88
			02/23/15	- -	110.35	130.60	0.00	110.35	3,721.30	-0.02
			08/24/15	- -	111.14	130.57	0.00	111.14	3,720.51	-0.79
			03/07/16	- -	112.20	130.51	0.00	112.20	3,719.45	-1.06
			08/15/16	- -	112.68	130.68	0.00	112.68	3,718.97	-0.48

Table 1. Water Elevation Measurements

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Top of Casing Elevation (feet)	Well Screen Interval (feet)	Date	Depth to Product (feet, btoc)	Depth to Water (feet, btoc)	Total Depth (feet)	Product Thickness (feet)	Corrected Depth to Water (feet)	Corrected Water Level Elev. (feet)	Change from previous measurement (ft)
MW-4 [1,5]	3,839.89	3,741.76 to 3,711.76	06/16/09	- -	106.79	128.02	0.00	106.79	3,733.10	NA
			01/13/10	- -	107.72	127.94	0.00	107.72	3,732.17	-0.93
			08/11/10	- -	108.19	128.03	0.00	108.19	3,731.70	-0.47
			09/28/10	- -	108.47	NM	0.00	108.47	3,731.42	-0.28
			02/23/11	- -	108.31	127.82	0.00	108.31	3,731.58	0.16
			07/12/11	- -	109.27	128.02	0.00	109.27	3,730.62	-0.96
			01/30/12	- -	109.91	128.02	0.00	109.91	3,729.98	-0.64
			07/23/12	- -	111.00	127.82	0.00	111.00	3,728.89	-1.09
			02/18/13	- -	110.70	127.95	0.00	110.70	3,729.19	0.30
			08/19/13	- -	111.60	128.01	0.00	111.60	3,728.29	-0.90
			02/24/14	- -	112.78	127.80	0.00	112.78	3,727.11	-1.18
			08/18/14	- -	113.42	127.63	0.00	113.42	3,726.47	-0.64
			02/23/15	- -	113.89	127.68	0.00	113.89	3,726.00	-0.47
			08/24/15	- -	114.47	127.99	0.00	114.47	3,725.42	-0.58
			03/07/16	- -	114.66	127.78	0.00	114.66	3,725.23	-0.19
			08/15/16	- -	115.38	128.10	0.00	115.38	3,724.51	-0.72
MW-5 [1,5]	3,819.15	3,731.13 to 3,701.13	06/16/09	- -	90.84	NM	0.00	90.84	3,728.31	NA
			01/13/10	- -	92.02	118.30	0.00	92.02	3,727.13	-1.18
			08/11/10	- -	92.67	117.93	0.00	92.67	3,726.48	-0.65
			02/23/11	- -	92.68	118.00	0.00	92.68	3,726.47	-0.01
			07/12/11	- -	93.38	117.97	0.00	93.38	3,725.77	-0.70
			01/31/12	- -	94.75	117.75	0.00	94.75	3,724.40	-1.37
			07/23/12	- -	95.22	117.92	0.00	95.22	3,723.93	-0.47
			02/18/13	- -	95.95	118.85	0.00	95.95	3,723.20	-0.73
			08/19/13	- -	96.65	117.90	0.00	96.65	3,722.50	-0.70
			02/24/14	- -	97.06	117.45	0.00	97.06	3,722.09	-0.41
			08/18/14	- -	97.57	117.22	0.00	97.57	3,721.58	-0.51
			02/23/15	- -	98.01	117.19	0.00	98.01	3,721.14	-0.44
			08/24/15	- -	98.46	117.22	0.00	98.46	3,720.69	-0.45
			03/07/16	- -	98.62	117.12	0.00	98.62	3,720.53	-0.16
			08/15/16	- -	99.40	117.70	0.00	99.40	3,719.75	-0.78
MW-6 [1,5]	3,838.16	3,738.17 to 3,708.17	06/18/09	- -	106.64	129.48	0.00	106.64	3,731.52	NA
			07/24/09	- -	106.92	129.71	0.00	106.92	3,731.24	-0.28
			09/24/09	- -	107.44	129.74	0.00	107.44	3,730.72	-0.52
			10/27/09	- -	107.55	129.73	0.00	107.55	3,730.61	-0.11
			01/13/10	- -	107.64	129.71	0.00	107.64	3,730.52	-0.09
			02/02/10	- -	107.69	NM	0.00	107.69	3,730.47	-0.05
			04/01/10	- -	107.65	NM	0.00	107.65	3,730.51	0.04
			08/11/10	- -	108.00	129.71	0.00	108.00	3,730.16	-0.35
			02/23/11	- -	108.22	129.72	0.00	108.22	3,729.94	-0.22
			07/12/11	- -	109.09	129.74	0.00	109.09	3,729.07	-0.87
			02/02/12	- -	109.78	129.74	0.00	109.78	3,728.38	-0.69
			07/23/12	- -	111.00	129.47	0.00	111.00	3,727.16	-1.22
			02/18/13	- -	110.60	133.32	0.00	110.60	3,727.56	0.40
			08/19/13	- -	111.70	130.84	0.00	111.70	3,726.46	-1.10
			02/24/14	- -	112.57	130.00	0.00	112.57	3,725.59	-0.87
			08/18/14	- -	113.50	129.71	0.00	113.50	3,724.66	-0.93
			02/23/15	- -	114.00	129.90	0.00	114.00	3,724.16	-0.50
			08/24/15	- -	114.63	129.69	0.00	114.63	3,723.53	-0.63
			03/07/16	- -	115.02	129.69	0.00	115.02	3,723.14	-0.39
			08/15/16	- -	115.62	129.69	0.00	115.62	3,722.54	-0.60

Table 1. Water Elevation Measurements

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Top of Casing Elevation (feet)	Well Screen Interval (feet)	Date	Depth to Product (feet, btoc)	Depth to Water (feet, btoc)	Total Depth (feet)	Product Thickness (feet)	Corrected Depth to Water (feet)	Corrected Water Level Elev. (feet)	Change from previous measurement (ft)
MW-7 [1,5]	3,838.42	3,738.19 to 3,708.19	04/30/09	- -	106.37	135.54	0.00	106.37	3,732.05	NA
			06/10/09	- -	106.48	NM	0.00	106.48	3,731.94	-0.11
			06/19/09	- -	106.68	129.34	0.00	106.68	3,731.74	-0.20
			07/02/09	- -	106.75	129.51	0.00	106.75	3,731.67	-0.07
			07/24/09	- -	106.84	129.52	0.00	106.84	3,731.58	-0.09
			09/24/09	- -	107.33	129.29	0.00	107.33	3,731.09	-0.49
			10/27/09	- -	107.46	129.53	0.00	107.46	3,730.96	-0.13
			01/13/10	- -	107.60	129.55	0.00	107.60	3,730.82	-0.14
			02/02/10	- -	107.61	NM	0.00	107.61	3,730.81	-0.01
			04/01/10	- -	107.52	NM	0.00	107.52	3,730.90	0.09
			08/11/10	- -	108.10	129.57	0.00	108.10	3,730.32	-0.58
			02/23/11	- -	108.13	129.52	0.00	108.13	3,730.29	-0.03
			07/12/11	- -	109.01	129.50	0.00	109.01	3,729.41	-0.88
			02/02/12	- -	109.71	129.26	0.00	109.71	3,728.71	-0.70
			07/23/12	- -	109.88	129.30	0.00	109.88	3,728.54	-0.17
			02/18/13	- -	110.52	129.55	0.00	110.52	3,727.90	-0.64
			08/19/13	- -	111.57	129.17	0.00	111.57	3,726.85	-1.05
			02/24/14	- -	112.50	129.90	0.00	112.50	3,725.92	-0.93
			08/18/14	- -	113.40	129.58	0.00	113.40	3,725.02	-0.90
			02/23/15	- -	113.86	129.62	0.00	113.86	3,724.56	-0.46
			08/24/15	- -	114.47	129.64	0.00	114.47	3,723.95	-0.61
			03/07/16	- -	114.84	129.64	0.00	114.84	3,723.58	-0.37
			08/15/16	- -	115.43	129.64	0.00	115.43	3,722.99	-0.59
MW-8 [2,5]	3,839.98	3,737.44 to 3,707.44	06/18/09	- -	109.37	132.30	0.00	109.37	3,730.61	NA
			01/13/10	- -	110.47	132.56	0.00	110.47	3,729.51	-1.10
			08/11/10	- -	111.05	132.34	0.00	111.05	3,728.93	-0.58
			02/23/11	- -	111.07	132.34	0.00	111.07	3,728.91	-0.02
			07/12/11	- -	111.98	132.36	0.00	111.98	3,728.00	-0.91
			02/01/12	- -	112.91	132.32	0.00	112.91	3,727.07	-0.93
			07/23/12	- -	113.94	132.33	0.00	113.94	3,726.04	-1.03
			02/18/13	- -	113.27	132.32	0.00	113.27	3,726.71	0.67
			08/19/13	- -	114.69	132.39	0.00	114.69	3,725.29	-1.42
			02/24/14	- -	115.44	132.60	0.00	115.44	3,724.54	-0.75
			08/19/13	- -	116.56	132.16	0.00	116.56	3,723.42	-1.12
			02/23/15	- -	116.91	132.10	0.00	116.91	3,723.07	-0.35
			08/24/15	- -	117.61	132.20	0.00	117.61	3,722.37	-0.70
			03/07/16	- -	118.05	132.04	0.00	118.05	3,721.93	-0.44
			08/15/16	- -	118.73	132.15	0.00	118.73	3,721.25	-0.68
MW-9 [2,5]	3,835.22	3,736.13 to 3,706.13	06/16/09	- -	104.58	129.18	0.00	104.58	3,730.64	NA
			01/13/10	- -	105.61	129.48	0.00	105.61	3,729.61	-1.03
			08/11/10	- -	106.37	129.21	0.00	106.37	3,728.85	-0.76
			02/23/11	- -	106.28	129.24	0.00	106.28	3,728.94	0.09
			07/12/11	- -	107.17	129.26	0.00	107.17	3,728.05	-0.89
			01/31/12	- -	107.38	129.30	0.00	107.38	3,727.84	-0.21
			07/23/12	- -	109.20	128.90	0.00	109.20	3,726.02	-1.82
			02/18/13	- -	108.47	129.41	0.00	108.47	3,726.75	0.73
			08/19/13	- -	109.91	129.38	0.00	109.91	3,725.31	-1.44
			02/24/14	- -	110.63	129.35	0.00	110.63	3,724.59	-0.72
			08/18/14	- -	111.81	129.01	0.00	111.81	3,723.41	-1.18
			02/23/15	- -	112.20	124.08	0.00	112.20	3,723.02	-0.39
			08/24/15	- -	112.89	129.06	0.00	112.89	3,722.33	-0.69
			03/07/16	- -	113.47	129.07	0.00	113.47	3,721.75	-0.58
			08/15/16	- -	114.02	129.15	0.00	114.02	3,721.20	-0.55

Table 1. Water Elevation Measurements

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Top of Casing Elevation (feet)	Well Screen Interval (feet)	Date	Depth to Product (feet, btoc)	Depth to Water (feet, btoc)	Total Depth (feet)	Product Thickness (feet)	Corrected Depth to Water (feet)	Corrected Water Level Elev. (feet)	Change from previous measurement (ft)
MW-10 [2,5]	3,833.66	3,735.49 to 3,705.49	06/16/09	- -	102.57	129.14	0.00	102.57	3,731.09	NA
			01/13/10	- -	103.51	127.42	0.00	103.51	3,730.15	-0.94
			08/11/10	- -	104.31	128.47	0.00	104.31	3,729.35	-0.80
			02/23/11	- -	104.26	128.54	0.00	104.26	3,729.40	0.05
			07/12/11	- -	105.08	128.46	0.00	105.08	3,728.58	-0.82
			01/31/12	- -	105.73	128.40	0.00	105.73	3,727.93	-0.65
			07/23/12	- -	107.05	128.50	0.00	107.05	3,726.61	-1.32
			02/18/13	- -	106.63	128.59	0.00	106.63	3,727.03	0.42
			08/19/13	- -	107.78	128.56	0.00	107.78	3,725.88	-1.15
			02/24/14	- -	108.53	128.40	0.00	108.53	3,725.13	-0.75
			08/18/14	- -	109.62	128.15	0.00	109.62	3,724.04	-1.09
			02/23/15	- -	110.08	128.35	0.00	110.08	3,723.58	-0.46
			08/24/15	- -	110.73	128.42	0.00	110.73	3,722.93	-0.65
			03/07/16	- -	111.32	128.20	0.00	111.32	3,722.34	-0.59
			08/15/16	- -	111.87	128.20	0.00	111.87	3,721.79	-0.55
MW-11 [3,5]	3,839.56	3,741.13 to 3,721.13	06/20/02	- -	99.93	NM	0.00	99.93	3,739.63	NA
			09/17/02	- -	100.63	NM	0.00	100.63	3,738.93	-0.70
			12/19/02	- -	100.50	NM	0.00	100.50	3,739.06	0.13
			03/28/03	- -	99.74	NM	0.00	99.74	3,739.82	0.76
			06/20/03	- -	100.76	NM	0.00	100.76	3,738.80	-1.02
			09/15/03	- -	101.51	NM	0.00	101.51	3,738.05	-0.75
			04/30/04	- -	102.31	116.21	0.00	102.31	3,737.25	-0.80
			02/21/05	- -	103.80	NM	0.00	103.80	3,735.76	-1.49
			06/28/05	- -	104.33	NM	0.00	104.33	3,735.23	-0.53
			09/30/05	- -	104.60	NM	0.00	104.60	3,734.96	-0.27
			12/29/05	- -	104.81	NM	0.00	104.81	3,734.75	-0.21
			04/10/06	- -	105.12	NM	0.00	105.12	3,734.44	-0.31
			07/06/06	- -	105.61	NM	0.00	105.61	3,733.95	-0.49
			01/26/07	- -	106.63	NM	0.00	106.63	3,732.93	-1.02
			03/27/07	- -	106.80	NM	0.00	106.80	3,732.76	-0.17
			07/13/07	- -	106.94	NM	0.00	106.94	3,732.62	-0.14
			09/12/07	- -	107.22	NM	0.00	107.22	3,732.34	-0.28
			12/31/07	- -	106.74	NM	0.00	106.74	3,732.82	0.48
			03/26/08	- -	106.81	117.51	0.00	106.81	3,732.75	-0.07
			06/13/08	- -	107.40	NM	0.00	107.40	3,732.16	-0.59
			09/24/08	- -	108.76	NM	0.00	108.76	3,730.80	-1.36
			12/29/08	- -	108.57	NM	0.00	108.57	3,730.99	0.19
			03/17/09	- -	107.91	NM	0.00	107.91	3,731.65	0.66
			06/18/09	- -	108.65	117.49	0.00	108.65	3,730.91	-0.74
			01/13/10	- -	109.81	117.77	0.00	109.81	3,729.75	-1.16
			08/11/10	- -	110.16	117.50	0.00	110.16	3,729.40	-0.35
			02/23/11	- -	110.32	117.70	0.00	110.32	3,729.24	-0.16
			07/12/11	- -	110.31	117.41	0.00	110.31	3,729.25	0.01
			02/01/12	- -	112.02	117.37	0.00	112.02	3,727.54	-1.71
			07/23/12	- -	113.10	117.38	0.00	113.10	3,726.46	-1.08
			02/18/13	- -	112.53	117.75	0.00	112.53	3,727.03	0.57
			08/19/13	- -	113.89	117.64	0.00	113.89	3,725.67	-1.36
			02/24/14	- -	114.75	117.90	0.00	114.75	3,724.81	-0.86
			08/18/14	- -	115.71	117.60	0.00	115.71	3,723.85	-0.96
			02/23/15	- -	116.10	117.81	0.00	116.10	3,723.46	-0.39
			08/24/15	- -	116.75	117.86	0.00	116.75	3,722.81	-0.65
			03/07/16	- -	117.07	118.00	0.00	117.07	3,722.49	-0.32
			08/15/16	- -	WELL DRY					

Table 1. Water Elevation Measurements

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Top of Casing Elevation (feet)	Well Screen Interval (feet)	Date	Depth to Product (feet, btoc)	Depth to Water (feet, btoc)	Total Depth (feet)	Product Thickness (feet)	Corrected Depth to Water (feet)	Corrected Water Level Elev. (feet)	Change from previous measurement (ft)
MW-12 [3,5,8]	3,822.73	3,742.29 to 3,722.29	06/20/02	- -	84.20	NM	0.00	84.20	3,738.53	NA
			12/21/02	- -	85.21	NM	0.00	85.21	3,737.52	-1.01
			03/28/03	- -	85.35	NM	0.00	85.35	3,737.38	-0.14
			06/20/03	- -	85.51	NM	0.00	85.51	3,737.22	-0.16
			09/15/03	- -	86.13	NM	0.00	86.13	3,736.60	-0.62
			11/02/03	- -	86.57	NM	0.00	86.57	3,736.16	-0.44
			04/30/04	- -	87.40	100.55	0.00	87.40	3,735.33	-0.83
			02/21/05	- -	88.42	NM	0.00	88.42	3,734.31	-1.02
			06/28/05	- -	88.76	NM	0.00	88.76	3,733.97	-0.34
			09/30/05	- -	89.12	NM	0.00	89.12	3,733.61	-0.36
			12/29/05	- -	89.31	NM	0.00	89.31	3,733.42	-0.19
			04/10/06	- -	89.55	NM	0.00	89.55	3,733.18	-0.24
			07/06/06	- -	90.03	NM	0.00	90.03	3,732.70	-0.48
			01/26/07	- -	90.06	NM	0.00	90.06	3,732.67	-0.03
			03/27/07	- -	90.10	NM	0.00	90.10	3,732.63	-0.04
			07/13/07	- -	91.66	NM	0.00	91.66	3,731.07	-1.56
			09/12/07	- -	92.01	NM	0.00	92.01	3,730.72	-0.35
			12/31/07	- -	92.17	NM	0.00	92.17	3,730.56	-0.16
			03/26/08	- -	92.39	100.57	0.00	92.39	3,730.34	-0.22
			06/13/08	- -	92.59	NM	0.00	92.59	3,730.14	-0.20
			09/24/08	- -	93.21	NM	0.00	93.21	3,729.52	-0.62
			12/29/08	- -	93.59	NM	0.00	93.59	3,729.14	-0.38
			03/17/09	- -	93.75	NM	0.00	93.75	3,728.98	-0.16
			06/16/09	- -	93.83	100.51	0.00	93.83	3,728.90	-0.08
			01/13/10	- -	94.78	100.71	0.00	94.78	3,727.95	-0.95
			08/11/10	- -	95.67	100.56	0.00	95.67	3,727.06	-0.89
			02/23/11	- -	95.85	100.56	0.00	95.85	3,726.88	-0.18
			07/12/11	- -	96.58	100.55	0.00	96.58	3,726.15	-0.73
			02/01/12	- -	97.57	100.57	0.00	97.57	3,725.16	-0.99
			07/23/12	- -	98.10	100.50	0.00	98.10	3,724.63	-0.53
			02/18/13	- -	98.95	100.50	0.00	98.95	3,723.78	-0.85
MW-12R [8]	3,823.29	3,734.95 to 3,714.95	08/19/13	- -	100.25	108.34	0.00	100.25	3,723.04	NA
			02/24/14	- -	100.92	108.50	0.00	100.92	3,722.37	-0.67
			08/18/14	- -	101.33	108.22	0.00	101.33	3,721.96	-0.41
			02/23/15	- -	101.73	107.50	0.00	101.73	3,721.56	-0.40
			08/24/15	- -	102.25	107.72	0.00	102.25	3,721.04	-0.52
			03/07/16	- -	102.52	107.61	0.00	102.52	3,720.77	-0.27
			08/15/16	- -	103.28	107.52	0.00	103.28	3,720.01	-0.76

Table 1. Water Elevation Measurements

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Top of Casing Elevation (feet)	Well Screen Interval (feet)	Date	Depth to Product (feet, btoc)	Depth to Water (feet, btoc)	Total Depth (feet)	Product Thickness (feet)	Corrected Depth to Water (feet)	Corrected Water Level Elev. (feet)	Change from previous measurement (ft)
MW-13 [4,5]	3,837.06	3,738.75 to 3,718.75	04/30/04	- -	101.41	119.82	0.00	101.41	3,735.65	NA
			02/21/05	- -	103.09	NM	0.00	103.09	3,733.97	-1.68
			06/28/05	- -	103.48	NM	0.00	103.48	3,733.58	-0.39
			09/30/05	- -	103.80	NM	0.00	103.80	3,733.26	-0.32
			12/29/05	- -	104.41	NM	0.00	104.41	3,732.65	-0.61
			04/10/06	- -	104.59	NM	0.00	104.59	3,732.47	-0.18
			07/06/06	- -	104.94	NM	0.00	104.94	3,732.12	-0.35
			01/26/07	- -	106.41	NM	0.00	106.41	3,730.65	-1.47
			03/27/07	- -	106.47	NM	0.00	106.47	3,730.59	-0.06
			07/13/07	- -	106.93	NM	0.00	106.93	3,730.13	-0.46
			09/12/07	- -	107.19	NM	0.00	107.19	3,729.87	-0.26
			12/31/07	- -	106.71	NM	0.00	106.71	3,730.35	0.48
			03/26/08	- -	107.02	119.75	0.00	107.02	3,730.04	-0.31
			06/13/08	- -	107.19	NM	0.00	107.19	3,729.87	-0.17
			09/24/08	- -	108.56	NM	0.00	108.56	3,728.50	-1.37
			12/29/08	- -	108.71	NM	0.00	108.71	3,728.35	-0.15
			03/17/09	- -	108.36	NM	0.00	108.36	3,728.70	0.35
			06/16/09	- -	108.58	108.58	0.00	108.58	3,728.48	-0.22
			01/13/10	- -	109.68	119.95	0.00	109.68	3,727.38	-1.10
			08/11/10	- -	109.72	119.68	0.00	109.72	3,727.34	-0.04
			02/23/11	- -	110.14	119.69	0.00	110.14	3,726.92	-0.42
			07/12/11	- -	111.17	119.71	0.00	111.17	3,725.89	-1.03
			02/01/12	- -	111.81	119.66	0.00	111.81	3,725.25	-0.64
			07/23/12	- -	113.11	119.66	0.00	113.11	3,723.95	-1.30
			02/18/13	- -	111.84	119.87	0.00	111.84	3,725.22	1.27
			08/19/13	- -	113.81	119.95	0.00	113.81	3,723.25	-1.97
			02/24/14	- -	114.47	121.50	0.00	114.47	3,722.59	-0.66
			08/18/14	- -	115.89	119.89	0.00	115.89	3,721.17	-1.42
			02/23/15	- -	116.05	119.88	0.00	116.05	3,721.01	-0.16
			08/24/15	- -	116.79	119.83	0.00	116.79	3,720.27	-0.74
			03/07/16	- -	117.30	119.76	0.00	117.30	3,719.76	-0.51
			08/15/16	- -	117.98	119.70	0.00	117.98	3,719.08	-0.68

Table 1. Water Elevation Measurements

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Top of Casing Elevation (feet)	Well Screen Interval (feet)	Date	Depth to Product (feet, btoc)	Depth to Water (feet, btoc)	Total Depth (feet)	Product Thickness (feet)	Corrected Depth to Water (feet)	Corrected Water Level Elev. (feet)	Change from previous measurement (ft)
MW-14 [4,5]	3,823.03	3,737.88 to 3,717.88	04/30/04	- -	87.46	NM	0.00	87.46	3,735.57	NA
			02/21/05	- -	88.48	NM	0.00	88.48	3,734.55	-1.02
			06/28/05	- -	88.80	NM	0.00	88.80	3,734.23	-0.32
			09/30/05	- -	89.14	NM	0.00	89.14	3,733.89	-0.34
			12/29/05	- -	89.34	NM	0.00	89.34	3,733.69	-0.20
			04/10/06	- -	89.63	NM	0.00	89.63	3,733.40	-0.29
			07/06/06	- -	90.08	NM	0.00	90.08	3,732.95	-0.45
			01/26/07	- -	91.02	NM	0.00	91.02	3,732.01	-0.94
			03/27/07	- -	91.18	NM	0.00	91.18	3,731.85	-0.16
			07/13/07	- -	91.68	NM	0.00	91.68	3,731.35	-0.50
			09/12/07	- -	92.02	NM	0.00	92.02	3,731.01	-0.34
			12/31/07	- -	92.25	NM	0.00	92.25	3,730.78	-0.23
			03/26/08	- -	92.43	105.08	0.00	92.43	3,730.60	-0.18
			06/13/08	- -	92.64	NM	0.00	92.64	3,730.39	-0.21
			12/29/08	- -	93.60	NM	0.00	93.60	3,729.43	-0.96
			03/17/09	- -	93.84	NM	0.00	93.84	3,729.19	-0.24
			06/16/09	- -	93.92	105.04	0.00	93.92	3,729.11	-0.08
			01/13/10	- -	94.80	105.30	0.00	94.80	3,728.23	-0.88
			08/11/10	- -	95.67	105.04	0.00	95.67	3,727.36	-0.87
			02/23/11	- -	95.99	105.05	0.00	95.99	3,727.04	-0.32
			07/12/11	- -	96.59	105.06	0.00	96.59	3,726.44	-0.60
			01/31/12	- -	97.54	105.05	0.00	97.54	3,725.49	-0.95
			07/23/12	- -	98.20	105.05	0.00	98.20	3,724.83	-0.66
			02/18/13	- -	99.07	105.38	0.00	99.07	3,723.96	-0.87
			08/19/13	- -	99.82	105.30	0.00	99.82	3,723.21	-0.75
			02/24/14	- -	100.55	105.60	0.00	100.55	3,722.48	-0.73
			08/18/14	- -	100.94	105.35	0.00	100.94	3,722.09	-0.39
			02/23/15	- -	101.42	105.35	0.00	101.42	3,721.61	-0.48
			08/24/15	- -	101.86	105.37	0.00	101.86	3,721.17	-0.44
			03/07/16	- -	102.21	105.27	0.00	102.21	3,720.82	-0.35
			08/15/16	- -	102.84	105.30	0.00	102.84	3,720.19	-0.63
MW-15 [6,7]	3,840.19	3,738.54 to 3,718.54	08/11/10	- -	106.94	121.68	0.00	106.94	3,733.25	NA
			02/23/11	- -	107.01	121.67	0.00	107.01	3,733.18	-0.07
			07/12/11	- -	108.32	121.62	0.00	108.32	3,731.87	-1.31
			01/30/12	- -	108.54	121.62	0.00	108.54	3,731.65	-0.22
			07/23/12	- -	109.77	121.58	0.00	109.77	3,730.42	-1.23
			02/18/13	- -	109.22	121.82	0.00	109.22	3,730.97	0.55
			08/19/13	- -	110.34	121.83	0.00	110.34	3,729.85	-1.12
			02/24/14	- -	111.72	122.05	0.00	111.72	3,728.47	-1.38
			08/18/14	- -	112.16	121.70	0.00	112.16	3,728.03	-0.44
			02/23/15	- -	112.42	121.80	0.00	112.42	3,727.77	-0.26
			08/24/15	- -	113.09	121.78	0.00	113.09	3,727.10	-0.67
			03/07/16	- -	112.85	121.67	0.00	112.85	3,727.34	0.24
			08/15/16	- -	113.92	121.70	0.00	113.92	3,726.27	-1.07

Table 1. Water Elevation Measurements

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Top of Casing Elevation (feet)	Well Screen Interval (feet)	Date	Depth to Product (feet, btoc)	Depth to Water (feet, btoc)	Total Depth (feet)	Product Thickness (feet)	Corrected Depth to Water (feet)	Corrected Water Level Elev. (feet)	Change from previous measurement (ft)
MW-16 [6,7]	3,838.20	3,737.50 to 3,717.50	08/11/10	- -	106.18	119.61	0.00	106.18	3,732.02	NA
			02/23/11	- -	106.34	119.67	0.00	106.34	3,731.86	-0.16
			07/12/11	- -	107.21	119.61	0.00	107.21	3,730.99	-0.87
			01/30/12	- -	107.93	119.47	0.00	107.93	3,730.27	-0.72
			07/23/12	- -	108.98	119.14	0.00	108.98	3,729.22	-1.05
			02/18/13	- -	108.69	119.63	0.00	108.69	3,729.51	0.29
			08/19/13	- -	109.51	119.50	0.00	109.51	3,728.69	-0.82
			02/24/14	- -	110.73	119.65	0.00	110.73	3,727.47	-1.22
			08/18/14	- -	111.35	119.25	0.00	111.35	3,726.85	-0.62
			02/23/15	- -	111.90	119.48	0.00	111.90	3,726.30	-0.55
			08/24/15	- -	112.42	119.22	0.00	112.42	3,725.78	-0.52
			03/07/16	- -	112.64	119.22	0.00	112.64	3,725.56	-0.22
			08/15/16	- -	113.31	119.20	0.00	113.31	3,724.89	-0.67
MW-17 [6,7,8]	3,831.43	3,735.79 to 3,715.79	08/11/10	- -	101.65	115.92	0.00	101.65	3,729.78	NA
			02/23/11	- -	101.71	115.69	0.00	101.71	3,729.72	-0.06
			07/12/11	- -	102.41	115.55	0.00	102.41	3,729.02	-0.70
MW-17R [8]	3,831.14	3,731.19 to 3,711.19	08/19/13	- -	104.79	119.95	0.00	104.79	3,726.35	NA
			02/24/14	- -	105.59	119.00	0.00	105.59	3,725.55	-0.80
			08/18/14	- -	106.58	117.80	0.00	106.58	3,724.56	-0.99
			02/23/15	- -	107.11	117.30	0.00	107.11	3,724.03	-0.53
			08/24/15	- -	107.73	117.53	0.00	107.73	3,723.41	-0.62
			03/07/16	- -	108.35	117.30	0.00	108.35	3,722.79	-0.62
			08/15/16	- -	108.90	117.28	0.00	108.90	3,722.24	-0.55
MW-18 [6,7]	3,825.05	3,725.52 to 3,705.52	08/11/10	- -	108.54	119.36	0.00	108.54	3,716.51	NA
			09/30/10	- -	104.47	NM	0.00	104.47	3,720.58	4.07
			02/23/11	- -	100.02	119.38	0.00	100.02	3,725.03	4.45
			07/12/11	- -	100.73	119.38	0.00	100.73	3,724.32	-0.71
			01/31/12	- -	100.49	119.38	0.00	100.49	3,724.56	0.24
			07/23/12	- -	110.18	119.37	0.00	110.18	3,714.87	-9.69
			02/18/13	- -	102.51	119.59	0.00	102.51	3,722.54	7.67
			08/19/13	- -	109.79	119.68	0.00	109.79	3,715.26	-7.28
			02/24/14	- -	105.20	119.85	0.00	105.20	3,719.85	4.59
			08/18/14	- -	115.51	119.67	0.00	115.51	3,709.54	-10.31
			02/23/15	- -	109.82	119.60	0.00	109.82	3,715.23	5.69
			08/24/15	- -	110.97	119.55	0.00	110.97	3,714.08	-1.15
			03/07/16	- -	117.00	119.61	0.00	117.00	3,708.05	-6.03
			08/15/16	- -	116.06	119.60	0.00	116.06	3,708.99	0.94
MW-19 [6,7]	3,823.97	3,731.48 to 3,711.48	08/11/10	- -	102.35	113.60	0.00	102.35	3,721.62	NA
			09/30/10	- -	98.70	NM	0.00	98.70	3,725.27	3.65
			02/23/11	- -	98.32	113.57	0.00	98.32	3,725.65	0.38
			07/12/11	- -	101.87	113.56	0.00	101.87	3,722.10	-3.55
			01/31/12	- -	100.92	113.54	0.00	100.92	3,723.05	0.95
			07/23/12	- -	100.98	113.56	0.00	100.98	3,722.99	-0.06
			02/18/13	- -	103.45	113.76	0.00	103.45	3,720.52	-2.47
			08/19/13	- -	104.87	113.81	0.00	104.87	3,719.10	-1.42
			02/24/14	- -	105.76	114.00	0.00	105.76	3,718.21	-0.89
			08/18/14	- -	104.60	113.79	0.00	104.60	3,719.37	1.16
			02/23/15	- -	105.22	113.72	0.00	105.22	3,718.75	-0.62
			08/24/15	- -	105.94	113.71	0.00	105.94	3,718.03	-0.72
			03/07/16	- -	106.75	113.64	0.00	106.75	3,717.22	-0.81
			08/15/16	- -	108.23	133.77	0.00	108.23	3,715.74	-1.48

Table 1. Water Elevation Measurements

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Top of Casing Elevation (feet)	Well Screen Interval (feet)	Date	Depth to Product (feet, btoc)	Depth to Water (feet, btoc)	Total Depth (feet)	Product Thickness (feet)	Corrected Depth to Water (feet)	Corrected Water Level Elev. (feet)	Change from previous measurement (ft)
MW-20 [6,7]	3,824.58	3,733.03 to 3,713.03	08/11/10	- -	97.75	111.82	0.00	97.75	3,726.83	NA
			02/23/11	- -	97.42	111.82	0.00	97.42	3,727.16	0.33
			07/12/11	- -	98.50	111.74	0.00	98.50	3,726.08	-1.08
			01/31/12	- -	99.07	111.74	0.00	99.07	3,725.51	-0.57
			07/23/12	- -	99.75	111.75	0.00	99.75	3,724.83	-0.68
			02/18/13	- -	100.50	111.78	0.00	100.50	3,724.08	-0.75
			08/19/13	- -	101.60	111.98	0.00	101.60	3,722.98	-1.10
			02/24/14	- -	102.37	112.15	0.00	102.37	3,722.21	-0.77
			08/18/14	- -	102.81	111.87	0.00	102.81	3,721.77	-0.44
			02/23/15	- -	103.25	111.82	0.00	103.25	3,721.33	-0.44
			08/24/15	- -	103.80	112.89	0.00	103.80	3,720.78	-0.55
			03/07/16	- -	104.28	111.78	0.00	104.28	3,720.30	-0.48
			08/15/16	- -	105.18	111.88	0.00	105.18	3,719.40	-0.90
MW-21 [6,7]	3,820.26	3,731.59 to 3,711.59	08/11/10	- -	94.06	108.31	0.00	94.06	3,726.20	NA
			02/23/11	- -	93.84	108.27	0.00	93.84	3,726.42	0.22
			07/12/11	- -	94.85	108.23	0.00	94.85	3,725.41	-1.01
			01/31/12	- -	95.72	108.18	0.00	95.72	3,724.54	-0.87
			07/23/12	- -	96.22	108.24	0.00	96.22	3,724.04	-0.50
			02/18/13	- -	96.92	108.48	0.00	96.92	3,723.34	-0.70
			08/19/13	- -	98.04	108.52	0.00	98.04	3,722.22	-1.12
			02/24/14	- -	98.65	108.55	0.00	98.65	3,721.61	-0.61
			08/18/14	- -	99.07	108.32	0.00	99.07	3,721.19	-0.42
			02/23/15	- -	99.48	108.19	0.00	99.48	3,720.78	-0.41
			08/24/15	- -	100.05	108.32	0.00	100.05	3,720.21	-0.57
			03/07/16	- -	100.30	108.15	0.00	100.30	3,719.96	-0.25
			08/15/16	- -	101.18	108.15	0.00	101.18	3,719.08	-0.88
MW-22 [6,7]	3,821.82	3,731.2 to 3,711.27	08/11/10	- -	95.62	110.80	0.00	95.62	3,726.20	NA
			02/23/11	- -	95.36	110.78	0.00	95.36	3,726.46	0.26
			07/12/11	- -	96.26	110.74	0.00	96.26	3,725.56	-0.90
			01/31/12	- -	97.56	110.72	0.00	97.56	3,724.26	-1.30
			07/23/12	- -	97.90	110.70	0.00	97.90	3,723.92	-0.34
			02/18/13	- -	98.45	110.92	0.00	98.45	3,723.37	-0.55
			08/19/13	- -	99.54	110.85	0.00	99.54	3,722.28	-1.09
			02/24/14	- -	99.97	111.00	0.00	99.97	3,721.85	-0.43
			08/18/14	- -	100.52	110.26	0.00	100.52	3,721.30	-0.55
			02/23/15	- -	100.85	109.10	0.00	100.85	3,720.97	-0.33
			08/24/15	- -	101.42	109.05	0.00	101.42	3,720.40	-0.57
			03/07/16	- -	101.56	109.19	0.00	101.56	3,720.26	-0.14
			08/15/16	- -	102.45	109.50	0.00	102.45	3,719.37	-0.89
MW-23 [6,7]	3,825.58	3,730.91 to 3,710.91	08/11/10	- -	100.49	115.10	0.00	100.49	3,725.09	NA
			02/23/11	- -	99.80	115.12	0.00	99.80	3,725.78	0.69
			07/12/11	- -	101.29	115.10	0.00	101.29	3,724.29	-1.49
			02/01/12	- -	102.04	115.07	0.00	102.04	3,723.54	-0.75
			07/23/12	- -	102.39	114.98	0.00	102.39	3,723.19	-0.35
			02/18/13	- -	102.69	115.25	0.00	102.69	3,722.89	-0.30
			08/19/13	- -	104.23	115.00	0.00	104.23	3,721.35	-1.54
			02/24/14	- -	104.93	115.35	0.00	104.93	3,720.65	-0.70
			08/18/14	- -	105.36	119.14	0.00	105.36	3,720.22	-0.43
			02/23/15	- -	105.74	114.85	0.00	105.74	3,719.84	-0.38
			08/24/15	- -	106.33	114.84	0.00	106.33	3,719.25	-0.59
			03/07/16	- -	106.72	114.66	0.00	106.72	3,718.86	-0.39
			08/15/16	- -	107.69	114.80	0.00	107.69	3,717.89	-0.97

Table 1. Water Elevation Measurements

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Top of Casing Elevation (feet)	Well Screen Interval (feet)	Date	Depth to Product (feet, btoc)	Depth to Water (feet, btoc)	Total Depth (feet)	Product Thickness (feet)	Corrected Depth to Water (feet)	Corrected Water Level Elev. (feet)	Change from previous measurement (ft)
MW-24 [6,7]	3,830.50	3,731.31 to 3,711.31	08/11/10	- -	104.04	118.14	0.00	104.04	3,726.46	NA
			02/23/11	- -	104.26	118.09	0.00	104.26	3,726.24	-0.22
			07/12/11	- -	105.29	118.04	0.00	105.29	3,725.21	-1.03
			02/01/12	- -	106.65	119.10	0.00	106.65	3,723.85	-1.36
			07/23/12	- -	106.96	118.04	0.00	106.96	3,723.54	-0.31
			02/18/13	- -	106.77	118.35	0.00	106.77	3,723.73	0.19
			08/19/13	- -	108.30	118.21	0.00	108.30	3,722.20	-1.53
			02/24/14	- -	108.66	118.45	0.00	108.66	3,721.84	-0.36
			08/18/14	- -	109.61	118.91	0.00	109.61	3,720.89	-0.95
			02/23/15	- -	109.92	118.12	0.00	109.92	3,720.58	-0.31
			08/24/15	- -	110.47	118.11	0.00	110.47	3,720.03	-0.55
			03/07/16	- -	110.59	118.15	0.00	110.59	3,719.91	-0.12
			08/15/16	- -	111.52	118.05	0.00	111.52	3,718.98	-0.93
MW-25 [6,7]	3,830.77	3,729.00 to 3,709.00	08/11/10	- -	106.46	121.66	0.00	106.46	3,724.31	NA
			02/23/11	- -	105.72	121.60	0.00	105.72	3,725.05	0.74
			07/12/11	- -	107.24	121.49	0.00	107.24	3,723.53	-1.52
			02/01/12	- -	108.53	121.42	0.00	108.53	3,722.24	-1.29
			07/23/12	- -	109.13	121.47	0.00	109.13	3,721.64	-0.60
			02/18/13	- -	107.65	121.45	0.00	107.65	3,723.12	1.48
			08/19/13	- -	110.15	121.49	0.00	110.15	3,720.62	-2.50
			02/24/14	- -	110.62	121.60	0.00	110.62	3,720.15	-0.47
			08/18/14	- -	112.14	121.46	0.00	112.14	3,718.63	-1.52
			02/23/15	- -	112.11	121.71	0.00	112.11	3,718.66	0.03
			08/24/15	- -	112.89	121.23	0.00	112.89	3,717.88	-0.78
			03/07/16	- -	113.76	121.10	0.00	113.76	3,717.01	-0.87
			08/15/16	- -	114.52	121.10	0.00	114.52	3,716.25	-0.76
MW-26 [6,7]	3,833.18	3,729.89 to 3,709.89	08/11/10	- -	106.22	121.33	0.00	106.22	3,726.96	NA
			02/23/11	- -	108.44	121.31	0.00	108.44	3,724.74	-2.22
			07/12/11	- -	109.58	121.26	0.00	109.58	3,723.60	-1.14
			02/01/12	- -	110.38	121.21	0.00	110.38	3,722.80	-0.80
			07/23/12	- -	111.28	121.24	0.00	111.28	3,721.90	-0.90
			02/18/13	- -	109.00	121.43	0.00	109.00	3,724.18	2.28
			08/19/13	- -	111.46	121.43	0.00	111.46	3,721.72	-2.46
			02/24/14	- -	112.28	122.30	0.00	112.28	3,720.90	-0.82
			08/18/14	- -	113.98	121.31	0.00	113.98	3,719.20	-1.70
			02/23/15	- -	114.20	121.20	0.00	114.20	3,718.98	-0.22
			08/24/15	- -	114.86	121.15	0.00	114.86	3,718.32	-0.66
			03/07/16	- -	115.22	121.12	0.00	115.22	3,717.96	-0.36
			08/15/16	- -	115.98	121.18	0.00	115.98	3,717.20	-0.76
MW-27 [6,7]	3,837.27	3,733.03 to 3,713.03	08/11/10	- -	109.00	124.07	0.00	109.00	3,728.27	NA
			02/23/11	- -	109.58	123.96	0.00	109.58	3,727.69	-0.58
			07/12/11	- -	110.59	124.00	0.00	110.59	3,726.68	-1.01
			02/01/12	- -	111.37	123.97	0.00	111.37	3,725.90	-0.78
			07/23/12	- -	112.32	123.78	0.00	112.32	3,724.95	-0.95
			02/18/13	- -	111.19	123.89	0.00	111.19	3,726.08	1.13
			08/19/13	- -	113.06	123.60	0.00	113.06	3,724.21	-1.87
			02/24/14	- -	113.81	122.60	0.00	113.81	3,723.46	-0.75
			08/18/14	- -	114.96	123.68	0.00	114.96	3,722.31	-1.15
			02/23/15	- -	115.32	120.95	0.00	115.32	3,721.95	-0.36
			08/24/15	- -	115.99	122.37	0.00	115.99	3,721.28	-0.67
			03/07/16	- -	116.26	122.87	0.00	116.26	3,721.01	-0.27
			08/15/16	- -	116.94	123.78	0.00	116.94	3,720.33	-0.68

Table 1. Water Elevation Measurements

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Top of Casing Elevation (feet)	Well Screen Interval (feet)	Date	Depth to Product (feet, btoc)	Depth to Water (feet, btoc)	Total Depth (feet)	Product Thickness (feet)	Corrected Depth to Water (feet)	Corrected Water Level Elev. (feet)	Change from previous measurement (ft)
MW-28 [6,7]	3,833.44	3,733.73 to 3,713.73	08/11/10	- -	103.72	118.42	0.00	103.72	3,729.72	NA
			02/23/11	- -	104.03	118.42	0.00	104.03	3,729.41	-0.31
			07/12/11	- -	105.07	118.35	0.00	105.07	3,728.37	-1.04
			01/30/12	- -	105.84	118.38	0.00	105.84	3,727.60	-0.77
			07/23/12	- -	106.65	118.31	0.00	106.65	3,726.79	-0.81
			02/18/13	- -	106.17	118.47	0.00	106.17	3,727.27	0.48
			08/19/13	- -	107.53	118.50	0.00	107.53	3,725.91	-1.36
			02/24/14	- -	108.39	118.70	0.00	108.39	3,725.05	-0.86
			08/18/14	- -	109.29	118.30	0.00	109.29	3,724.15	-0.90
			02/23/15	- -	109.60	118.47	0.00	109.60	3,723.84	-0.31
			08/24/15	- -	110.16	118.44	0.00	110.16	3,723.28	-0.56
			03/07/16	- -	110.25	118.40	0.00	110.25	3,723.19	-0.09
			08/15/16	- -	111.03	118.31	0.00	111.03	3,722.41	-0.78
MW-29 [6,7]	3,835.55	3,734.52 to 3,714.52	08/11/10	- -	105.80	120.42	0.00	105.80	3,729.75	NA
			02/23/11	- -	105.97	120.35	0.00	105.97	3,729.58	-0.17
			07/12/11	- -	107.08	120.33	0.00	107.08	3,728.47	-1.11
			01/30/12	- -	107.69	120.33	0.00	107.69	3,727.86	-0.61
			07/23/12	- -	108.74	120.27	0.00	108.74	3,726.81	-1.05
			02/18/13	- -	108.12	120.47	0.00	108.12	3,727.43	0.62
			08/19/13	- -	109.49	120.68	0.00	109.49	3,726.06	-1.37
			02/24/14	- -	110.43	120.70	0.00	110.43	3,725.12	-0.94
			08/18/14	- -	111.35	120.30	0.00	111.35	3,724.20	-0.92
			02/23/15	- -	111.65	120.30	0.00	111.65	3,723.90	-0.30
			08/24/15	- -	112.29	120.35	0.00	112.29	3,723.26	-0.64
			03/07/16	- -	112.47	120.48	0.00	112.47	3,723.08	-0.18
			08/15/16	- -	113.21	120.30	0.00	113.21	3,722.34	-0.74
MW-30 [8]	3,839.25	3,732.28 to 3,712.28	08/19/13	- -	110.94	126.97	0.00	110.94	3,728.31	NA
			02/24/14	- -	112.14	126.60	0.00	112.14	3,727.11	-1.20
			08/18/14	- -	112.79	126.36	0.00	112.79	3,726.46	-0.65
			02/23/15	- -	113.18	126.68	0.00	113.18	3,726.07	-0.39
			08/24/15	- -	113.75	125.03	0.00	113.75	3,725.50	-0.57
			03/07/16	- -	113.90	124.75	0.00	113.90	3,725.35	-0.15
			08/15/16	- -	114.65	124.40	0.00	114.65	3,724.60	-0.75

Table 1. Water Elevation Measurements

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Top of Casing Elevation (feet)	Well Screen Interval (feet)	Date	Depth to Product (feet, btoc)	Depth to Water (feet, btoc)	Total Depth (feet)	Product Thickness (feet)	Corrected Depth to Water (feet)	Corrected Water Level Elev. (feet)	Change from previous measurement (ft)
RW-1	3,838.48	3,738.19 to 3,708.19	04/30/09	- -	106.45	136.09	0.00	106.45	3,732.03	NA
			06/10/09	- -	106.59	NM	0.00	106.59	3,731.89	-0.14
			06/19/09	- -	106.61	129.62	0.00	106.61	3,731.87	-0.02
			07/02/09	- -	106.82	129.25	0.00	106.82	3,731.66	-0.21
			07/24/09	- -	106.92	129.31	0.00	106.92	3,731.56	-0.10
			09/24/09	- -	107.42	129.73	0.00	107.42	3,731.06	-0.50
			10/27/09	- -	107.53	129.25	0.00	107.53	3,730.95	-0.11
			01/13/10	- -	107.67	129.29	0.00	107.67	3,730.81	-0.14
			02/02/10	- -	107.69	NM	0.00	107.69	3,730.79	-0.02
			04/01/10	- -	107.60	NM	0.00	107.60	3,730.88	0.09
			08/11/10	- -	108.18	129.29	0.00	108.18	3,730.30	-0.58
			02/23/11	- -	108.22	129.31	0.00	108.22	3,730.26	-0.04
			07/12/11	- -	109.09	129.27	0.00	109.09	3,729.39	-0.87
			02/02/12	- -	109.81	129.34	0.00	109.81	3,728.67	-0.72
			07/23/12	- -	110.98	129.07	0.00	110.98	3,727.50	-1.17
			02/18/13	- -	110.61	135.79	0.00	110.61	3,727.87	0.37
			08/19/13	- -	111.67	129.64	0.00	111.67	3,726.81	-1.06
			02/24/14	- -	112.59	129.60	0.00	112.59	3,725.89	-0.92
			08/18/14	- -	113.50	129.28	0.00	113.50	3,724.98	-0.91
			02/23/15	- -	113.95	129.26	0.00	113.95	3,724.53	-0.45
			08/24/15	- -	114.56	129.25	0.00	114.56	3,723.92	-0.61
			03/07/16	- -	114.92	129.25	0.00	114.92	3,723.56	-0.36
			08/15/16	- -	115.52	129.25	0.00	115.52	3,722.96	-0.60

Notes:

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

btoc = below top of casing
-- = Not Detected
NM = Not Measured
NA = Not Applicable

Table 2. Organic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	WQCC Volatiles (Method 8260, mg/L)					WQCC Semi-Volatiles (Method 8270, mg/L)					TPH (Method 8015, mg/L)	
		Benzene	Ethylbenzene	Toluene	Total Xylenes	Total Naphthalene	Total Naphthalenes	Naphthalene	1-methyl naphthalene	2-methyl naphthalene	Total Phenols	TPH GRO (Low Fraction)	TPH DRO (High Fraction)
NM WQCC Groundwater Human Health Standards:		**0.010**	**0.75**	**0.75**	**0.62**	**0.03**	**0.03**	N/A	N/A	N/A	**0.005**	N/A	N/A
MW-1	06/19/09	<0.0050	0.012	<0.0050	0.031	<0.0050	- -	- -	- -	- -	- -	- -	- -
	01/19/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	<0.00020	<0.00020	<0.00020	- -	- -
	08/18/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	03/01/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/20/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	02/02/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/27/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/27/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/21/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/24/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/21/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/25/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/27/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	03/09/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	- -	- -	- -	- -	- -	- -	- -
	08/17/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	- -	- -	- -	- -	- -	- -	- -
MW-2	06/22/09	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	01/19/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	08/16/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	03/03/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/14/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	01/30/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/24/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/19/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	0.00022	- -	- -
	08/20/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/25/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/21/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/24/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/28/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	03/07/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	08/18/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -

Table 2. Organic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	WQCC Volatiles (Method 8260, mg/L)					WQCC Semi-Volatiles (Method 8270, mg/L)					TPH (Method 8015, mg/L)	
		Benzene	Ethylbenzene	Toluene	Total Xylenes	Total Naphthalene	Total Naphthalenes	Naphthalene	1-methyl naphthalene	2-methyl naphthalene	Total Phenols	TPH GRO (Low Fraction)	TPH DRO (High Fraction)
NM WQCC Groundwater Human Health Standards:		**0.010**	**0.75**	**0.75**	**0.62**	**0.03**	**0.03**	N/A	N/A	N/A	**0.005**	N/A	N/A
MW-3	06/16/09	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	01/14/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
(duplicate)	01/14/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	08/19/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	02/24/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/15/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	01/30/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/25/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/27/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/22/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/26/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/21/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/26/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
(duplicate)	02/26/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/26/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	03/08/16	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	08/18/16	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
MW-4	06/16/09	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	01/13/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	08/19/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/28/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/15/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	0.00044	0.00044	- -	<0.00020	<0.00020	- -	- -
	01/30/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/24/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/21/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/20/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/25/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/20/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/24/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/28/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.0003723	<0.000332	<0.000311	<0.000334	- -	- -
	08/15/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -

Table 2. Organic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

		WQCC Volatiles (Method 8260, mg/L)					WQCC Semi-Volatiles (Method 8270, mg/L)					TPH (Method 8015, mg/L)	
Monitor Well	**Sample Date**	**Benzene**	**Ethylbenzene**	**Toluene**	**Total Xylenes**	**Total Naphthalene**	**Total Naphthalenes**	**Naphthalene**	**1-methyl naphthalene**	**2-methyl naphthalene**	**Total Phenols**	**TPH GRO (Low Fraction)**	**TPH DRO (High Fraction)**
NM WQCC Groundwater Human Health Standards:		**0.010**	**0.75**	**0.75**	**0.62**	**0.03**	**0.03**	N/A	N/A	N/A	**0.005**	N/A	N/A
MW-5	06/16/09	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	01/18/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	08/20/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/28/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/19/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	01/31/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
(duplicate)	01/31/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/25/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/21/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/20/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/25/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/19/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/24/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/24/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	0.000382 J	- -	- -
	08/17/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	<0.100	0.366
MW-6	06/18/09	<0.0050	<0.0050	<0.0050	<0.015	0.0075	- -	- -	- -	- -	- -	- -	- -
(duplicate)	06/18/09	<0.0050	<0.0050	<0.0050	<0.015	0.0074	- -	- -	- -	- -	- -	- -	- -
	02/02/10	<0.0050	0.013	<0.0050	<0.015	0.0099	- -	- -	- -	- -	- -	- -	- -
	08/19/10	<0.0050	0.015	<0.0050	<0.015	<0.0050	- -	0.0017	- -	0.0017	<0.0010	- -	- -
	03/01/11	<0.0050	0.018	<0.0050	<0.015	0.013	0.0094	0.0062	<0.00020	0.0032	0.0255	- -	- -
	07/20/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	0.0008	0.0008	- -	<0.00020	<0.00020	- -	- -
	02/02/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/24/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/27/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
(duplicate)	02/27/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/21/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/27/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	0.00116	0.00052	0.00064	<0.00020	<0.00020	- -	- -
	08/21/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	0.00292	0.00092	0.0020	<0.00010	<0.00020	- -	- -
	02/25/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/27/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	03/10/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	- -	- -	- -	- -	- -	- -	- -
	08/17/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -

Table 2. Organic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	WQCC Volatiles (Method 8260, mg/L)					WQCC Semi-Volatiles (Method 8270, mg/L)					TPH (Method 8015, mg/L)	
		Benzene	Ethylbenzene	Toluene	Total Xylenes	Total Naphthalene	Total Naphthalenes	Naphthalene	1-methyl naphthalene	2-methyl naphthalene	Total Phenols	TPH GRO (Low Fraction)	TPH DRO (High Fraction)
NM WQCC Groundwater Human Health Standards:		**0.010**	**0.75**	**0.75**	**0.62**	**0.03**	**0.03**	N/A	N/A	N/A	**0.005**	N/A	N/A
MW-7	06/19/09	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	02/02/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	08/18/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	03/01/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/20/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	02/02/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/27/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/27/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/21/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/27/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/21/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/25/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/27/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	0.000507 J	- -	- -
MW-8	06/18/09	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	01/18/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	08/18/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	02/25/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/19/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	02/01/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/27/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/26/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/21/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/27/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/21/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/26/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/27/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	0.000990 J	- -	- -
	03/08/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	- -	- -	- -	- -	- -	- -	- -
	08/18/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	- -	- -	- -	- -	- -	- -	- -

Table 2. Organic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	WQCC Volatiles (Method 8260, mg/L)					WQCC Semi-Volatiles (Method 8270, mg/L)					TPH (Method 8015, mg/L)	
		Benzene	Ethylbenzene	Toluene	Total Xylenes	Total Naphthalene	Total Naphthalenes	Naphthalene	1-methyl naphthalene	2-methyl naphthalene	Total Phenols	TPH GRO (Low Fraction)	TPH DRO (High Fraction)
NM WQCC Groundwater Human Health Standards:		**0.010**	**0.75**	**0.75**	**0.62**	**0.03**	**0.03**	N/A	N/A	N/A	**0.005**	N/A	N/A
MW-9	06/16/09	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	01/14/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	08/19/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	03/01/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/15/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	01/31/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/25/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/27/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/22/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/26/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/21/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/25/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/26/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	08/17/16	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
MW-10	06/16/09	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	01/13/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	08/19/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	<0.00020	<0.00020	- -	- -
	03/03/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	0.00028	0.00028	<0.00020	<0.00020	<0.00020	- -	- -
	07/15/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	01/31/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/25/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/27/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/22/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	0.00032	- -	- -
	02/26/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/21/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/26/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/26/15	<0.000331	<0.000384	<0.00078	<0.00106	<0.0010	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	08/17/16	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

Table 2. Organic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	WQCC Volatiles (Method 8260, mg/L)					WQCC Semi-Volatiles (Method 8270, mg/L)					TPH (Method 8015, mg/L)	
		Benzene	Ethylbenzene	Toluene	Total Xylenes	Total Naphthalene	Total Naphthalenes	Naphthalene	1-methyl naphthalene	2-methyl naphthalene	Total Phenols	TPH GRO (Low Fraction)	TPH DRO (High Fraction)
NM WQCC Groundwater Human Health Standards:		**0.010**	**0.75**	**0.75**	**0.62**	**0.03**	**0.03**	N/A	N/A	N/A	**0.005**	N/A	N/A
MW-11	06/18/09	0.10	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	01/18/10	0.20 E	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	08/18/10	0.078	0.021	<0.0050	<0.015	<0.0050	0.00036	0.00036	- -	- -	0.00122	- -	- -
	02/25/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/19/11	1.2	<0.0050	<0.0050	<0.015	<0.0050	0.00036	0.00036	- -	<0.00020	0.00089	- -	- -
	02/01/12	7.8	0.051	<0.0050	0.200	0.096	0.0435	0.039	- -	0.0045	0.0035	- -	- -
	07/27/12	0.049	<0.0050	<0.0050	<0.015	<0.0050	0.00022	0.00022	<0.00020	<0.00020	0.00023	- -	- -
	02/27/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
(duplicate)	02/27/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/21/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
(duplicate)	08/21/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/28/14	0.9600	0.250	<0.0050	0.200	0.0064	- -	- -	- -	- -	- -	- -	- -
	08/20/14	0.1100	0.011	<0.0050	0.030	<0.0050	- -	- -	- -	- -	- -	- -	- -
	02/27/15	0.0026	0.00099 J	<0.00078	0.0036	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	0.0010 J	- -	- -
	08/28/15	0.00856	0.00194	0.00283 J	0.0158	<0.00100	- -	- -	- -	- -	- -	- -	- -
(duplicate)	08/28/15	0.00922	0.00216	0.00305 J	0.0180	<0.00100	- -	- -	- -	- -	- -	- -	- -
	03/09/16	0.000627 J	0.000778 J	<0.000780	<0.00106	<0.00100	- -	- -	- -	- -	- -	- -	- -
(duplicate)	03/09/16	0.000772 J	0.000908 J	<0.000780	<0.00106	<0.00100	- -	- -	- -	- -	- -	- -	- -
	08/15/16	DRY WELL - PLUGGED AND ABANDONED DECEMBER 2016											
MW-12	06/16/09	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	01/18/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	08/20/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/25/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/19/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	--	DAMAGED WELL - PLUGGED AND ABANDONED JUNE 2013											
MW-12R	08/21/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/27/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/20/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/24/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/25/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	0.000362 J	- -	- -
	03/09/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	08/18/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000439	<0.000439	<0.000392	<0.000367	<0.000394	- -	- -

Table 2. Organic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	WQCC Volatiles (Method 8260, mg/L)					WQCC Semi-Volatiles (Method 8270, mg/L)					TPH (Method 8015, mg/L)	
		Benzene	Ethylbenzene	Toluene	Total Xylenes	Total Naphthalene	Total Naphthalenes	Naphthalene	1-methyl naphthalene	2-methyl naphthalene	Total Phenols	TPH GRO (Low Fraction)	TPH DRO (High Fraction)
NM WQCC Groundwater Human Health Standards:		**0.010**	**0.75**	**0.75**	**0.62**	**0.03**	**0.03**	N/A	N/A	N/A	**0.005**	N/A	N/A
MW-13	06/16/09	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	01/18/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	08/18/10	0.016	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	02/25/11	0.0057	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	0.00091	- -	- -
	07/19/11	0.0063	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	02/01/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/26/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/26/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/21/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/27/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/19/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/27/15	0.00034 J	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/26/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	0.000379 J	- -	- -
	03/08/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	08/17/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
MW-14	06/16/09	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	01/18/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	08/20/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/25/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/18/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	01/31/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/25/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/22/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.000205	<0.00020	<0.000205	<0.000205	<0.000205	- -	- -
	08/22/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	02/28/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	08/20/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	02/27/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/27/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	0.000530 J	- -	- -
	08/19/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000413	<0.000413	<0.000368	<0.000345	0.000642 J	- -	- -

Table 2. Organic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	WQCC Volatiles (Method 8260, mg/L)					WQCC Semi-Volatiles (Method 8270, mg/L)					TPH (Method 8015, mg/L)	
		Benzene	Ethylbenzene	Toluene	Total Xylenes	Total Naphthalene	Total Naphthalenes	Naphthalene	1-methyl naphthalene	2-methyl naphthalene	Total Phenols	TPH GRO (Low Fraction)	TPH DRO (High Fraction)
NM WQCC Groundwater Human Health Standards:		**0.010**	**0.75**	**0.75**	**0.62**	**0.03**	**0.03**	N/A	N/A	N/A	**0.005**	N/A	N/A
MW-15	08/20/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/24/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/14/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	01/30/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/24/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/19/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/20/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
(duplicate)	08/20/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/24/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
(duplicate)	02/24/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/21/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
(duplicate)	08/21/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/24/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/27/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	0.000997 J	- -	- -
(duplicate)	08/27/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	0.000595 J	- -	- -
	08/15/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
(duplicate)	08/15/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	0.000534 J	- -	- -
MW-16	08/20/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/24/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/15/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	0.00030	0.00030	- -	<0.00020	<0.00020	- -	- -
(duplicate)	07/15/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	01/30/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/24/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/20/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/20/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/25/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/19/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/24/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	0.00037	0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/27/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	0.000397 J	- -	- -
	08/15/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -

Table 2. Organic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	WQCC Volatiles (Method 8260, mg/L)					WQCC Semi-Volatiles (Method 8270, mg/L)					TPH (Method 8015, mg/L)	
		Benzene	Ethylbenzene	Toluene	Total Xylenes	Total Naphthalene	Total Naphthalenes	Naphthalene	1-methyl naphthalene	2-methyl naphthalene	Total Phenols	TPH GRO (Low Fraction)	TPH DRO (High Fraction)
NM WQCC Groundwater Human Health Standards:		**0.010**	**0.75**	**0.75**	**0.62**	**0.03**	**0.03**	N/A	N/A	N/A	**0.005**	N/A	N/A
MW-17	08/20/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/24/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/18/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	--	DAMAGED WELL - PLUGGED AND ABANDONED JUNE 2013											
MW-17R	08/22/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/27/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/22/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/26/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/27/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	0.000465 J	- -	- -
	03/08/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	08/17/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
MW-18	08/23/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	02/24/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/18/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	01/31/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	0.00021	0.00021	- -	<0.00020	<0.00020	- -	- -
	07/25/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/22/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/22/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/26/14	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	0.00056	- -	- -
	08/20/14	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/26/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/25/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	0.000507 J	- -	- -
	08/17/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000439	<0.000439	<0.000392	<0.000367	0.000507 J	- -	- -

Table 2. Organic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	WQCC Volatiles (Method 8260, mg/L)					WQCC Semi-Volatiles (Method 8270, mg/L)					TPH (Method 8015, mg/L)	
		Benzene	Ethylbenzene	Toluene	Total Xylenes	Total Naphthalene	Total Naphthalenes	Naphthalene	1-methyl naphthalene	2-methyl naphthalene	Total Phenols	TPH GRO (Low Fraction)	TPH DRO (High Fraction)
NM WQCC Groundwater Human Health Standards:		**0.010**	**0.75**	**0.75**	**0.62**	**0.03**	**0.03**	N/A	N/A	N/A	**0.005**	N/A	N/A
MW-19	08/23/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	02/24/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/18/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	01/31/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/25/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/26/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/22/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
(duplicate)	08/22/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/26/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
(duplicate)	02/26/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	0.00034	- -	- -
	08/19/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
(duplicate)	08/19/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/26/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
(duplicate)	02/26/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/26/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	0.000610 J	- -	- -
	03/08/16	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -		
	08/17/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.00186	<0.00186	<0.00166	<0.00156	0.00818 J	- -	- -
MW-20	08/23/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	02/25/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/18/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	01/31/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/25/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/22/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/20/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/26/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/19/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/24/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/15/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	0.000508 J	- -	- -
	08/16/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -

Table 2. Organic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	WQCC Volatiles (Method 8260, mg/L)					WQCC Semi-Volatiles (Method 8270, mg/L)					TPH (Method 8015, mg/L)	
		Benzene	Ethylbenzene	Toluene	Total Xylenes	Total Naphthalene	Total Naphthalenes	Naphthalene	1-methyl naphthalene	2-methyl naphthalene	Total Phenols	TPH GRO (Low Fraction)	TPH DRO (High Fraction)
NM WQCC Groundwater Human Health Standards:		**0.010**	**0.75**	**0.75**	**0.62**	**0.03**	**0.03**	N/A	N/A	N/A	**0.005**	N/A	N/A
MW-21	08/23/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	02/28/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
(duplicate)	02/28/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/19/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	01/31/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/26/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/22/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	0.00031	<0.00020	<0.00020	0.00031	<0.00020	- -	- -
	08/20/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/25/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/19/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/24/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/25/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	0.000497 J	- -	- -
	08/16/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	<0.100	0.624
MW-22	08/23/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	02/28/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/19/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	01/31/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/26/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/21/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/21/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/25/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/20/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/24/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/25/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	08/16/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	<0.100	0.819

Table 2. Organic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	WQCC Volatiles (Method 8260, mg/L)					WQCC Semi-Volatiles (Method 8270, mg/L)					TPH (Method 8015, mg/L)	
		Benzene	Ethylbenzene	Toluene	Total Xylenes	Total Naphthalene	Total Naphthalenes	Naphthalene	1-methyl naphthalene	2-methyl naphthalene	Total Phenols	TPH GRO (Low Fraction)	TPH DRO (High Fraction)
NM WQCC Groundwater Human Health Standards:		**0.010**	**0.75**	**0.75**	**0.62**	**0.03**	**0.03**	N/A	N/A	N/A	**0.005**	N/A	N/A
MW-23	08/23/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	02/28/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/19/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	02/01/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/26/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/26/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/21/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/25/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/21/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/25/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/25/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	08/16/16	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
MW-24	08/24/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	02/28/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/14/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	02/01/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/30/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
(duplicate)	07/30/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/26/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/21/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/27/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/21/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/25/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/25/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	0.000405 J	- -	- -
	08/16/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -

Table 2. Organic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	WQCC Volatiles (Method 8260, mg/L)					WQCC Semi-Volatiles (Method 8270, mg/L)					TPH (Method 8015, mg/L)	
		Benzene	Ethylbenzene	Toluene	Total Xylenes	Total Naphthalene	Total Naphthalenes	Naphthalene	1-methyl naphthalene	2-methyl naphthalene	Total Phenols	TPH GRO (Low Fraction)	TPH DRO (High Fraction)
NM WQCC Groundwater Human Health Standards:		**0.010**	**0.75**	**0.75**	**0.62**	**0.03**	**0.03**	N/A	N/A	N/A	**0.005**	N/A	N/A
MW-25	08/23/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	02/28/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/18/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	02/01/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/26/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/26/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/22/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
(duplicate)	08/22/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/26/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
(duplicate)	02/26/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/19/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
(duplicate)	08/19/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
(duplicate)	02/25/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	02/25/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/25/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	0.000728 J	- -	- -
(duplicate)	08/25/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	0.000581 J	- -	- -
	03/09/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	08/16/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
(duplicate)	08/16/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
MW-26	08/24/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	02/28/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/14/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	02/01/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/26/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/26/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/22/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	0.00061	- -	- -
	02/26/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/21/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/25/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/25/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	08/16/16	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

Table 2. Organic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	WQCC Volatiles (Method 8260, mg/L)					WQCC Semi-Volatiles (Method 8270, mg/L)					TPH (Method 8015, mg/L)	
		Benzene	Ethylbenzene	Toluene	Total Xylenes	Total Naphthalene	Total Naphthalenes	Naphthalene	1-methyl naphthalene	2-methyl naphthalene	Total Phenols	TPH GRO (Low Fraction)	TPH DRO (High Fraction)
NM WQCC Groundwater Human Health Standards:		**0.010**	**0.75**	**0.75**	**0.62**	**0.03**	**0.03**	N/A	N/A	N/A	**0.005**	N/A	N/A
MW-27	08/18/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	02/25/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	0.00099	- -	- -
	07/20/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	0.00034	- -	- -
	02/01/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/26/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/26/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/20/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/27/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/21/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/27/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/26/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	03/08/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	- -	- -	- -	- -	- -	- -	- -
	08/18/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
MW-28	08/28/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	02/23/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/14/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	01/30/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/24/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/19/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	0.00086	- -	- -
	08/20/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	0.00022	- -	- -
	02/24/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/19/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/23/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	0.00033 J	- -	- -
	08/27/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	0.000774 J	- -	- -
	08/15/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000391	<0.000391	<0.000349	<0.000326	0.000459 J	- -	- -

Table 2. Organic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	WQCC Volatiles (Method 8260, mg/L)					WQCC Semi-Volatiles (Method 8270, mg/L)					TPH (Method 8015, mg/L)	
		Benzene	Ethylbenzene	Toluene	Total Xylenes	Total Naphthalene	Total Naphthalenes	Naphthalene	1-methyl naphthalene	2-methyl naphthalene	Total Phenols	TPH GRO (Low Fraction)	TPH DRO (High Fraction)
NM WQCC Groundwater Human Health Standards:		**0.010**	**0.75**	**0.75**	**0.62**	**0.03**	**0.03**	N/A	N/A	N/A	**0.005**	N/A	N/A
MW-29	08/24/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
(duplicate)	08/24/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	02/28/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/14/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	01/30/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	0.00050	0.00050	- -	<0.00020	<0.00020	- -	- -
	07/24/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/26/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/20/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/27/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
(duplicate)	02/27/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/20/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/25/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	0.00039 J	- -	- -
	08/27/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	03/08/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	- -	- -	- -	- -	- -	- -	- -
	08/17/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
MW-30	06/21/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/20/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/27/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/22/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/25/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/28/15	<0.000331	<0.000384	<0.000780	0.00142 J	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	03/08/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
(duplicate)	03/08/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	08/16/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
(duplicate)	08/16/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -

Table 2. Organic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	WQCC Volatiles (Method 8260, mg/L)					WQCC Semi-Volatiles (Method 8270, mg/L)					TPH (Method 8015, mg/L)	
		Benzene	Ethylbenzene	Toluene	Total Xylenes	Total Naphthalene	Total Naphthalenes	Naphthalene	1-methyl naphthalene	2-methyl naphthalene	Total Phenols	TPH GRO (Low Fraction)	TPH DRO (High Fraction)
NM WQCC Groundwater Human Health Standards:		**0.010**	**0.75**	**0.75**	**0.62**	**0.03**	**0.03**	N/A	N/A	N/A	**0.005**	N/A	N/A
RW-1	06/19/09	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	02/02/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	08/19/10	<0.0050	<0.0050	<0.0050	0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	03/01/11	<0.0050	<0.0050	<0.0050	0.0054	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/20/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	02/02/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/27/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/27/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/21/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/27/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/21/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	02/25/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	08/27/15	<0.000331	<0.000384	<0.00078	<0.00106	<0.0010	<0.000372	<0.000372	<0.000332	<0.000311	0.000398 J	- -	- -
North Well (WW-North)	06/18/09	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	01/14/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	08/24/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	03/03/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/20/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	02/02/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/30/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/19/13	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/11/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	12/17/14	<0.0010	<0.0010	<0.0010	<0.0015	<0.0020	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	- -	- -
	03/09/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	05/19/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00033	<0.00031	<0.00033	- -	- -
	08/28/15	<0.000331	<0.000384	<0.00078	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	12/17/15	<0.000331	<0.000384	<0.00078	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	03/10/16	<0.000331	<0.000384	<0.00078	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	05/25/16	<0.000331	<0.000384	<0.00078	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	08/18/16	0.000425 J	<0.000384	<0.00078	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	<0.0314	<0.0247
	12/08/16	<0.000331	<0.000384	<0.00078	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	<0.0314	0.0621 J

Table 2. Organic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	WQCC Volatiles (Method 8260, mg/L)					WQCC Semi-Volatiles (Method 8270, mg/L)					TPH (Method 8015, mg/L)	
		Benzene	Ethylbenzene	Toluene	Total Xylenes	Total Naphthalene	Total Naphthalenes	Naphthalene	1-methyl naphthalene	2-methyl naphthalene	Total Phenols	TPH GRO (Low Fraction)	TPH DRO (High Fraction)
NM WQCC Groundwater Human Health Standards:		**0.010**	**0.75**	**0.75**	**0.62**	**0.03**	**0.03**	N/A	N/A	N/A	**0.005**	N/A	N/A
South Well	06/22/09	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
(WW-South)	01/14/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	08/24/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	03/03/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/20/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	02/02/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/30/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/19/13	0.0052	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	02/28/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/22/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
(duplicate)	08/22/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	12/17/14	0.0023	<0.0010	<0.0010	<0.0015	<0.0020	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	- -	- -
(duplicate)	12/17/14	0.0023	<0.0010	<0.0010	<0.0015	<0.0020	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	- -	- -
	03/09/15	0.0014	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
(duplicate)	03/09/15	0.0016	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	05/19/15	0.0010 J	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00033	<0.00031	<0.00033	- -	- -
(duplicate)	05/19/15	0.00091 J	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00033	<0.00031	<0.00033	- -	- -
	08/28/15	0.00113	<0.000384	<0.00078	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
(duplicate)	08/28/15	0.000921 J	<0.000384	<0.00078	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	12/17/15	<0.000331	<0.000384	<0.00078	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
(duplicate)	12/17/15	0.00119	<0.000384	<0.00078	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	03/10/16	<0.000331	<0.000384	<0.00078	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	05/25/16	<0.000331	<0.000384	<0.00078	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
(duplicate)	05/25/16	<0.000331	<0.000384	<0.00078	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	08/18/16	0.000451 J	<0.000384	<0.00078	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	0.0343 J	0.0303 J
(duplicate)	08/18/16	0.000509 J	<0.000384	<0.00078	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	<0.0314	0.0482 J
	12/08/16	<0.000331	<0.000384	<0.00078	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	<0.0314	0.0961 J
(duplicate)	12/08/16	<0.000331	<0.000384	<0.00078	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	<0.0314	0.118

Table 2. Organic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	WQCC Volatiles (Method 8260, mg/L)					WQCC Semi-Volatiles (Method 8270, mg/L)					TPH (Method 8015, mg/L)	
		Benzene	Ethylbenzene	Toluene	Total Xylenes	Total Naphthalene	Total Naphthalenes	Naphthalene	1-methyl naphthalene	2-methyl naphthalene	Total Phenols	TPH GRO (Low Fraction)	TPH DRO (High Fraction)
NM WQCC Groundwater Human Health Standards:		**0.010**	**0.75**	**0.75**	**0.62**	**0.03**	**0.03**	N/A	N/A	N/A	**0.005**	N/A	N/A
East Well (WW-East)	06/18/09	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	01/14/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	08/25/10	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	- -	- -	- -	- -	- -	- -	- -
	03/03/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	07/20/11	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	02/02/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	- -	<0.00020	<0.00020	- -	- -
	07/30/12	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/27/12	<0.0050	<0.0050	<0.0050	<0.015	--	<0.00020	<0.00020	<0.00020	--	<0.00020	- -	- -
	09/26/12	<0.0050	<0.0050	<0.0050	<0.015	--	<0.00020	<0.00020	<0.00020	--	<0.00020	- -	- -
	10/22/12	<0.0050	<0.0050	<0.0050	<0.015	--	<0.00020	<0.00020	<0.00020	--	<0.00020	- -	- -
	12/27/12	<0.0050	<0.0050	<0.0050	<0.015	--	<0.00020	<0.00020	<0.00020	--	<0.00020	- -	- -
	02/28/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	- -	- -
	08/22/14	<0.0050	<0.0050	<0.0050	<0.015	<0.0050	<0.00010	<0.00010	<0.00010	<0.00010	<0.00020	- -	- -
	12/17/14	<0.0010	<0.0010	<0.0010	<0.0015	<0.0020	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	- -	- -
	03/09/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00031	<0.00031	<0.00033	- -	- -
	05/19/15	<0.00033	<0.00038	<0.00078	<0.0011	<0.0010	<0.00037	<0.00037	<0.00033	<0.00031	<0.00033	- -	- -
	08/28/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	12/17/15	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	03/10/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	05/25/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	- -	- -
	08/18/16	<0.000331	<0.000384	<0.000780	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	<0.0314	0.0357 J
	12/08/16	<0.000331	<0.000384	<0.00078	<0.00106	<0.00100	<0.000372	<0.000372	<0.000332	<0.000311	<0.000334	<0.0314	0.0673 J

Notes:

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

mg/L = milligrams per liter

< = Not reported above laboratory reporting limit

-- = Not Analyzed

N/A = Not Applicable, no WQCC Human Health Standard established for constituent

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

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

December 2014 anlyses completed by Hall Environmental Analysis Laboratory in Albuquerque, New Mexico

February 2015 to December 2016 analyses completed by ESC Lab Sciences in Mount Juliet, Tennessee

Table 3. Inorganic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	Chloride (mg/L)	Fluoride (mg/L)	Nitrate-Nitrite (as N, mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Manganese (mg/L)	Total Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Uranium (mg/L)	Zinc (mg/L)
NM WQCC Groundwater Human Health Standards:		**250**	**1.6**	**10**	**600**	**1,000**	**5.0**	**0.1**	**1.0**	**0.75**	**0.01**	**0.05**	**0.05**	**1.0**	**1.0**	**0.05**	**0.20**	**0.002**	**1.0**	**0.2**	**0.05**	**0.05**	**0.03**	**10.0**
MW-1	06/19/09	131	0.827	3.75	123	694	<0.0100	0.00914	0.1470	0.175	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.974	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	- -	0.01240
	01/19/10	266	0.249	5.84	145	1,240	0.0202	0.00634	0.1640	0.236	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	2.72	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.00615	0.00989
	08/18/10	126	0.623	2.59	111	694	<0.0100	0.00841	0.1170	0.182	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	1.62	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00538
	03/01/11	100	0.502	1.84	83.4	580	<0.0100	0.00821	0.0984	0.189	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	1.62	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00689
	07/20/11	34.7	0.623	1.14	73.9	492	<0.0100	0.00808	0.0903	0.168	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.485	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00832
	02/02/12	29.9	0.773	<1.00	65.4	392	<0.0100	0.00782	0.0843	0.164	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.780	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00766
	07/27/12	27.3	0.944	<2.00	59.5	358	0.0249	0.00870	0.0917	0.193	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	1.05	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00759
	02/27/13	30.0	0.872	<2.00	67.2	400	<0.0100	0.00857	0.0974	0.184	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.662	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01070
	08/21/13	33.2	1.03	<1.00	70.5	406	0.0158	0.00589	0.1020	0.187	<0.00200	0.01600	<0.00500	<0.00500	<0.200	<0.00500	1.32	<0.000200	<0.00500	0.01640	<0.00500	<0.00500	<0.00500	0.00641
	02/27/14	30.0	0.758	0.710	63.2	418	<0.0100	0.00750	0.1110	0.169	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.690	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00874
	08/21/14	26.6	1.10	1.23	68.0	395	0.0135	0.01020	0.1380	0.109	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.0172	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.02420
	02/25/15	26.0	1.10	1.50	66.0	390	<0.0350	0.01200	0.1300	0.180 J	<0.00070	<0.00140	<0.00230	<0.00530	<0.014	0.00048 J	<0.0012	<0.000049	0.00250	<0.00490	<0.00740	<0.00280	0.00220 J	0.00670 J
	08/27/15	27.3	0.961	1.70	72.2	441	<0.0350	0.01200	0.1220	0.170	<0.00016	<0.00054	<0.00026	<0.00052	<0.0141	<0.000240	0.00191 J	<0.000049	0.00236 J	<0.00035	0.00268	<0.00031	0.00187 J	<0.00256
	03/09/16	28.9	1.09	1.76	68.1	- -	0.00841 JB	0.00292	0.121	0.155	<0.000160	0.0276	<0.000260	0.00141 JB	<0.0150	<0.000240	0.00102 JB	<0.0000490	0.00170 JB	0.000910 JB	0.00150 J	<0.000310	0.00246 J	0.00436 JB
	08/17/16	38.4	1.04	1.93	69.3	436	0.00284 JB	0.0117	0.138	0.189	<0.00100	0.00112 JB	<0.000260	0.000802 JB	0.0529 JB	<0.000240	0.00295 JB	<0.0000490	0.0026 J	<0.00350	0.00278	<0.000310	0.00261 J	0.00377 J
MW-2	06/22/09	252	0.765	2.69	66.8	988	0.0657	0.03860	0.0803	0.190	<0.00200	<0.00500	<0.00500	0.00621	<0.200	<0.00500	0.00583	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	- -	0.1100
	01/19/10	246	0.672	3.39	55.1	966	<0.0100	<0.00500	0.005	0.191	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00538	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0166
	08/16/10	276	0.824	3.23	55.9	1,180	0.1367	<0.00500	0.193	0.155	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0204
	03/03/11	221	0.763	3.49	57.6	1,010	<0.0100	<0.00500	0.176	0.171	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0117
	07/14/11	190	0.647	2.98	58.4	966	<0.0100	<0.00500	0.160	0.192	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0230
	01/30/12	214	0.784	3.43	75.1	1,230	<0.0100	<0.00500	0.130	0.164	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0255
	07/24/12	201	0.898	3.24	76.3	908	<0.0100	<0.00500	0.140	0.233	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0191
	02/19/13	213	0.810	3.90	86.6	834	0.0102	<0.00500	0.141	0.197	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0436
	08/20/13	178	0.920	5.33	88.9	682	0.0346	<0.00500	0.118	0.216	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00721
	02/25/14	139	0.693	5.25	79.4	616	0.0133	<0.00500	0.125	0.203	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0130
	08/21/14	122	0.812	6.17	82.3	588	0.0143	<0.00500	0.112	0.147	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0214
	02/24/15	130	0.920	7.90	94.0	710	<0.035	0.00370	0.090	0.210	<0.00070	<0.00140	<0.00230	<0.00530	<0.014	<0.00024	<0.00120	<0.000049	0.0034 J	<0.00490	<0.00740	<0.00280	0.00260 J	<0.0059
	08/28/15	343	1.41	8.33	152	1,000	<0.0350	0.00355	0.111	0.213	<0.00016	0.000625 J	<0.00026	0.000548 J	<0.0141	<0.00024	0.000533 J	<0.000049	0.00254 J	0.00115 J	0.00147 J	<0.000310	0.00340 J	0.00382 J
	03/07/16	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	08/18/16	123	0.864	6.84	71.8	640	0.00451 JB	0.00304	0.105	0.235	<0.000160	0.000981 JB	<0.000260	0.000952 JB	<0.0150	<0.000240	0.000769 JB	0.0000534 JB	0.00282 J	0.00129 JB	0.00166 J	<0.000310	0.00297 J	0.00316 JB
MW-3	06/16/09	29.1	3.38	2.19	64.6	504	0.3080	0.00815	0.1150	0.160	<0.00200	0.00709	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	0.01510	<0.00500	<0.00500	<0.00500	- -	<0.0100
	01/14/10	49.9	3.18	2.11	76.5	540	0.1440	0.00703	0.1190	0.148	<0.00200	0.00977	<0.00500	0.12100	<0.200	<0.00500	0.00597	<0.000200	0.02000	0.00842	<0.00500	<0.00500	0.000625	0.01950
(duplicate)	01/14/10	49.8	3.18	2.11	75.0	552	0.1420	0.00798	0.1250	0.167	<0.00200	0.01050	<0.00500	0.14800	<0.200	<0.00500	0.00699	<0.000200	0.02160	0.00960	<0.00500	<0.00500	0.000721	0.02300
	08/19/10	72.7	2.99	1.52	77.7	518	0.0767	0.00935	0.1270	0.151	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	0.00790	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
	02/24/11	88.2	2.58	3.02	80.5	566	<0.0100	0.00892	0.1240	0.178	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.05240
	07/15/11	67.3	2.37	2.59	74.7	568	<0.0100	0.01250	0.1130	0.202	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	0.00510	<0.00500	<0.00500	<0.00500	<0.00500	0.01560
	01/30/12	65.6	2.94	2.37	86.3	472	<0.0100	0.01170	0.0831	0.168	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	0.00621	<0.00500	<0.00500	<0.00500	<0.00500	0.00886
	07/25/12	35.0	2.70	<2.00	81.3	436	<0.0100	0.01520	0.0773	0.209	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00673
	02/27/13	54.2	2.47	2.30	89.5	478	<0.0100	0.01560	0.1010	0.186	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	0.00546	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
	08/22/13	46.1	2.4	2.06	81.9	456	0.0185	0.01690	0.0782	0.178	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
	02/26/14	36.9	1.84	2.08	79.1	430	<0.0100	0.01790	0.0655	0.164	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	0.00560	<0.00500	<0.00500	<0.00500	0.00527
	08/21/14	30.0	1.84	1.53	78.0	420	0.0128	0.01830	0.0545	0.104	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
	02/26/15	31.0	1.50	1.90	74.0	420	<0.0350	0.01900	0.0610	0.160	<0.00070	<0.00140	<0.00230	<0.00530	<0.014	<0.00024	<0.00120	<0.000049	0.00094	<0.00490	<0.00740	<0.00280	0.000570	<0.00590
(duplicate)	02/26/15	32.0	1.60	2.00	74.0	420	<0.0350	0.02000	0.0620	0.160 J	<0.00070	<0.00140	<0.00230	<0.00530	<0.014	<0.00024	<0.00120	<0.000049	0.00110 J	<0.00490	0.00850 J	<0.00280	0.000560 J	0.00880 J
	08/26/15	27.3	1.55	1.88	77.6	520	<0.0350	0.01950	0.0529	0.166 J	<0.00016	0.000912 J	<0.00026	0.00101 J	<0.0141	<0.00024	0.000572 J	<0.000049	<0.00160	0.000483 J	0.00269	<0.00031	0.000567 J	0.00296 J
	03/08/16	23.9	1.32	1.84	65.4	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	08/18/16	24.4	1.16	1.81	66.3	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

Table 3. Inorganic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	Chloride (mg/L)	Fluoride (mg/L)	Nitrate-Nitrite (as N, mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Manganese (mg/L)	Total Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Uranium (mg/L)	Zinc (mg/L)
NM WQCC Groundwater Human Health Standards:		**250**	**1.6**	**10**	**600**	**1,000**	**5.0**	**0.1**	**1.0**	**0.75**	**0.01**	**0.05**	**0.05**	**1.0**	**1.0**	**0.05**	**0.20**	**0.002**	**1.0**	**0.2**	**0.05**	**0.05**	**0.03**	**10.0**
MW-4	06/16/09	28.9	0.841	1.84	61.5	422	0.1800	<0.00500	0.1740	0.160	<0.00200	0.00534	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	- -	0.01200
	01/13/10	29.3	1.10	1.67	66.7	416	0.0345	<0.00500	0.0932	0.177	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.00102	<0.00500
	08/19/10	26.1	1.10	1.10	65.8	324	0.0607	<0.00500	0.0862	0.136	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
	02/28/11	27.1	1.02	1.91	64.4	378	0.0131	<0.00500	0.0951	0.163	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00533
	07/15/11	25.8	1.12	1.57	63.6	422	0.1440	<0.00500	0.1410	0.172	<0.00200	0.00619	<0.00500	<0.00500	<0.200	<0.00500	0.01140	<0.000200	<0.00500	0.01030	<0.00500	<0.00500	<0.00500	0.02110
	01/30/12	30.0	1.08	1.71	73.4	388	0.0119	<0.00500	0.0796	0.150	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01470
	07/24/12	28.9	1.18	<2.00	69.4	414	<0.0100	<0.00500	0.0883	0.199	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01020
	02/21/13	26.6	1.05	<2.00	75.5	360	<0.0100	0.00525	0.0841	0.157	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01160
	08/20/13	26.4	1.20	1.72	71.6	382	< 0.0100	0.00500	0.0902	0.156	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00506
	02/25/14	26.9	0.877	2.02	75.5	390	<0.0100	<0.00500	0.0897	0.148	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00801
	08/20/14	24.1	1.15	1.64	70.2	372	0.6030	0.00501	0.2130	0.111	<0.00200	<0.00500	<0.00500	<0.00500	0.241	<0.00500	0.00595	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.02210
	02/24/15	24.0	1.10	2.10	66.00	390	<0.0350	0.00460	0.0900	0.150 J	<0.00070	<0.00140	<0.00230	<0.00530	<0.014	0.00025 J	<0.00120	0.00011 J	0.00340 J	<0.00490	<0.00740	<0.00280	0.00160 J	<0.00590
	08/28/15	28.8	1.26	2.32	63.8	479	<0.0350	0.00526	0.0930	0.157	<0.00016	<0.00054	<0.00026	<0.00052	<0.0141	<0.00024	0.00114 J	<0.000049	0.00319 J	0.000482 J	0.00228	<0.00031	0.00168 J	0.00269 J
	08/15/16	25.1	1.02	2.24	60.3	411	0.00568 JB	0.00564	0.0894	0.155	<0.000160	0.00117 JB	<0.000260	0.000614 JB	0.064 JB	<0.000240	0.000588 JB	<0.0000490	0.00358 J	0.000488 JB	0.00272	<0.000310	0.0017 J	0.00298 J
MW-5	06/16/09	186	1.39	3.31	131	952	0.7960	0.02330	0.0639	0.1160	<0.00200	<0.00500	<0.00500	<0.00500	0.399	<0.00500	0.00670	<0.000200	0.01030	<0.00500	<0.00500	<0.00500	- -	<0.01000
	01/18/10	26.4	0.781	4.91	80.6	508	<0.0100	<0.00500	0.0966	0.1350	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
	08/20/10	18.5	1.13	3.43	77.7	440	0.0814	<0.00500	0.0967	0.0986	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
	02/28/11	29.8	1.03	2.91	70.5	570	0.1230	<0.00500	0.1000	0.0854	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.01420	<0.000200	<0.00500	0.01120	<0.00500	<0.00500	<0.00500	0.03680
	07/19/11	20.9	0.858	2.72	59.0	524	<0.0100	<0.00500	0.0968	0.0871	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.03090
	01/31/12	26.9	1.04	2.49	61.2	504	<0.0100	<0.00500	0.0972	0.0557	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00948
(duplicate)	01/31/12	27.1	1.05	2.54	62.0	436	<0.0100	<0.00500	0.0947	0.0728	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01190
	07/25/12	15.9	1.10	2.22	50.1	434	0.0205	<0.00500	0.0931	0.1340	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.05620
	02/21/13	10.9	1.04	2.01	40.8	412	0.0487	<0.00500	0.1040	0.0997	<0.00200	<0.00500	<0.00500	0.04340	<0.200	<0.00500	0.01580	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.00582	0.02890
	08/20/13	13.9	1.16	2.05	44.2	448	< 0.0100	<0.00500	0.1050	0.1000	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.00507	0.02080
	02/25/14	11.8	0.877	2.52	48.4	436	< 0.0100	<0.00500	0.1160	0.0893	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01140
	08/19/14	8.71	1.16	1.68	44.6	478	0.1480	<0.00500	0.1230	<0.0200	<0.00200	0.00744	<0.00500	<0.00500	<0.200	<0.00500	0.00532	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.00535	0.00626
	02/24/15	21.0	1.40	2.20	43.0	520	0.038 J	0.00290	0.1200	0.0910 J	<0.00070	<0.00140	<0.00230	<0.00530	<0.014	<0.00024	<0.00120	<0.000049	0.00450 J	<0.00490	<0.00740	<0.00280	0.00400 J	0.00890 J
	08/25/15	19.9	1.52	1.97	39.9	586	<0.0350	0.00410	0.1210	0.0899 J	<0.00016	0.00111 J	<0.00026	0.00102 J	<0.0141	<0.00024	<0.00025	<0.000049	0.00476 J	0.000814 J	<0.00038	<0.00031	0.00410 J	0.00539 J
	08/17/16	18.4	1.62	2.15	38.1	449	0.0155 JB	0.00425	0.119	0.108	<0.000160	0.00217 B	<0.000260	0.00122 JB	0.0974 JB	<0.000240	0.000764 JB	<0.0000490	0.00876	0.00054 JB	0.000502 J	<0.000310	0.00553 J	0.0059 J
MW-6	06/18/09	188	0.113	0.678	101	844	<0.0100	0.0201	0.186	0.175	<0.00200	<0.00500	<0.00500	<0.00500	0.418	<0.00500	2.86	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	- -	0.00996
(duplicate)	06/18/09	168	<0.100	0.682	90.4	812	<0.0100	0.0221	0.200	0.192	<0.00200	<0.00500	<0.00500	<0.00500	0.219	<0.00500	2.76	<0.000200	<0.00500	0.00653	<0.00500	<0.00500	- -	0.01410
	02/02/10	334	<0.100	0.822	90.2	1,400	<0.0200	0.0250	0.499	0.234	<0.00200	<0.00500	<0.00500	<0.00500	2.08	<0.00500	4.51	<0.000200	<0.00500	0.00634	<0.00500	<0.00500	0.01130	<0.00500
	08/19/10	285	<0.100	<1.00	111	1,350	0.0152	0.0456	0.376	0.244	<0.00200	<0.00500	<0.00500	<0.00500	1.86	<0.00500	6.61	<0.000200	<0.00500	0.00766	<0.00500	<0.00500	0.00785	<0.00500
	03/01/11	282	<0.100	0.750	80.7	1,340	<0.0100	0.0390	0.404	0.271	<0.00200	<0.00500	<0.00500	<0.00500	0.711	<0.00500	5.58	<0.000200	<0.00500	0.00896	<0.00500	<0.00500	0.00659	<0.00500
	07/20/11	174	<0.500	<0.500	114	970	<0.0100	0.0336	0.220	0.223	<0.00200	0.00972	<0.00500	<0.00500	1.57	<0.00500	4.51	<0.000200	<0.00500	0.00576	<0.00500	<0.00500	<0.00500	0.01760
	02/02/12	58.4	0.313	<1.00	88.0	398	<0.0100	<0.00500	0.0827	0.190	<0.00200	<0.00500	<0.00500	<0.00500	0.488	<0.00500	1.25	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.00599	0.00858
	07/24/12	77.7	0.217	<2.00	80.1	690	<0.0100	0.0128	0.143	0.265	<0.00200	<0.00500	<0.00500	<0.00500	1.28	<0.00500	2.53	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.01020	0.01940
	02/27/13	65.4	0.368	<2.00	77.1	542	<0.0100	0.0126	0.154	0.214	<0.00200	<0.00500	<0.00500	<0.00500	1.31	<0.00500	1.97	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.00789	0.01230
(duplicate)	02/27/13	65.7	0.370	<2.00	77.6	556	<0.0100	0.0124	0.158	0.216	<0.00200	<0.00500	<0.00500	<0.00500	1.33	<0.00500	2.02	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.00833	0.01060
	08/21/13	43.3	0.441	<0.200	76.6	502	0.0244	<0.00500	0.129	0.198	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	1.68	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.00606	<0.00500
	02/27/14	124	0.309	<0.500	51.0	814	<0.0100	0.0458	0.263	0.220	<0.00200	<0.00500	<0.00500	<0.00500	3.42	<0.00500	2.71	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.00882	0.00622
	08/21/14	132	0.230	<1.00	34.4	832	0.0330	0.0185	0.363	0.167	<0.00200	<0.00500	<0.00500	<0.00500	0.268	<0.00500	3.06	<0.000200	<0.00500	0.00651	<0.00500	<0.00500	0.00744	0.01510
	02/25/15	42.0	0.580	0.170	67.0	500	0.0920 J	0.0061	0.190	0.190 J	<0.00070	<0.0014	<0.00230	<0.00530	0.015 J	0.00072 J	1.00	<0.000049	0.00260 J	<0.00490	<0.00740	<0.00280	0.00660 J	0.02000
	08/27/15	32.4	0.505	0.835	66.5	473	<0.0350	0.00539	0.152	0.181	<0.00016	<0.000540	<0.00026	0.00054 J	<0.0141	<0.00024	0.411	<0.000049	0.00192 J	0.00134 J	0.00242	<0.00031	0.00463 J	0.00347 J
	03/10/16	34.5	0.621	0.688	71.8	- -	0.00858 JB	0.00529	0.149	0.174	<0.000160	<0.000540	<0.000260	0.000554 JB	<0.0150	<0.000240	0.138 B	<0.0000490	0.00202 JB	0.000974 JB	0.00298	<0.000310	0.00573 J	0.00327 JB
	08/17/16	27.0	0.642	1.06	68.5	1,000	0.00297 JB	0.00654	0.131	0.196	<0.000160	0.000782 JB	<0.000260	0.00132 JB	<0.0150	<0.000240	0.0144	<0.0000490	0.00215 J	0.00121 JB	0.00316	<0.000310	0.00726 J	0.00362 JB

Table 3. Inorganic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	Chloride (mg/L)	Fluoride (mg/L)	Nitrate-Nitrite (as N, mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Manganese (mg/L)	Total Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Uranium (mg/L)	Zinc (mg/L)
NM WQCC Groundwater Human Health Standards:		**250**	**1.6**	**10**	**600**	**1,000**	**5.0**	**0.1**	**1.0**	**0.75**	**0.01**	**0.05**	**0.05**	**1.0**	**1.0**	**0.05**	**0.20**	**0.002**	**1.0**	**0.2**	**0.05**	**0.05**	**0.03**	**10.0**
MW-7	06/19/09	30.6	1.12	1.66	67.2	384	<0.0100	0.00923	0.169	0.161	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.127	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	- -	0.01370
	02/02/10	28.0	0.854	1.72	62.2	350	<0.0200	0.00869	0.199	0.169	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.125	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
	08/18/10	27.2	0.570	1.12	60.2	370	0.0223	0.00532	0.252	0.161	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.343	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
	03/01/11	26.5	0.599	1.91	58.2	376	<0.0100	0.00525	0.237	0.161	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.441	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00593
	07/20/11	23.3	0.626	1.35	56.8	396	<0.0100	0.00669	0.246	0.164	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.617	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
	02/02/12	25.5	0.633	1.66	61.5	356	<0.0100	<0.00500	0.229	0.166	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.550	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00746
	07/27/12	23.6	0.796	2.01	55.2	342	0.0727	<0.00500	0.234	0.196	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.642	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01140
	02/27/13	25.8	0.709	<2.00	67.3	286	<0.0100	<0.00500	0.227	0.178	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.300	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00844
	08/21/13	26.9	0.748	1.62	60.8	290	< 0.0100	<0.00500	0.220	0.178	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.365	<0.000200	<0.00500	<0.00500	0.00600	<0.00500	<0.00500	<0.00500
	02/27/14	31.0	0.501	1.50	62.1	408	0.0159	<0.00500	0.208	0.168	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.781	<0.000200	<0.00500	<0.00500	0.00540	<0.00500	<0.00500	0.00818
	08/21/14	30.8	0.642	1.72	62.2	380	< 0.0100	<0.00500	0.207	0.110	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.470	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00566
	02/25/15	35.0	0.710	2.00	60.0	420	<0.0350	0.00550	0.240	0.180 J	<0.00070	<0.00140	<0.00230	<0.00530	<0.014	0.00041 J	0.011	<0.000049	0.00110 J	<0.00490	<0.00740	<0.00280	0.00330 J	0.00830 J
	08/27/15	38.4	0.866	2.28	66.9	471	<0.0350	0.00650	0.215	0.180	<0.00016	<0.00054	<0.00026	<0.00052	<0.0141	<0.000240	0.0184	<0.000049	0.00175 J	<0.00035	0.00334	<0.00031	0.00236 J	<0.00256
MW-8	06/18/09	219	0.730	3.46	73.3	798	<0.0100	0.00501	0.181	0.228	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00919	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	- -	0.04580
	01/18/10	151	0.493	3.80	67.6	742	<0.0100	0.00726	0.157	0.215	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00545
	08/18/10	279	0.560	7.08	65.3	1,260	0.0377	0.00676	0.204	0.170	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.00501	0.00760
	02/25/11	144	0.820	<0.500	87.5	694	<0.0100	<0.00500	0.106	0.175	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.28100	<0.000200	<0.00500	0.00620	<0.00500	<0.00500	<0.00500	0.03160
	07/19/11	313	0.522	4.49	72.4	1,460	<0.0100	<0.00500	0.229	0.278	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.00928	0.02130
	02/01/12	376	0.498	8.21	102	1,530	<0.0100	<0.00500	0.221	0.219	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00636	<0.000200	<0.00500	0.01190	<0.00500	<0.00500	0.00745	0.03390
	07/27/12	224	0.490	8.55	122	1,080	<0.0100	<0.00500	0.160	0.294	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	0.00523	<0.00500	<0.00500	0.00714	0.00888
	02/26/13	246	0.371	11.1	118	1,080	<0.0100	0.00627	0.170	0.380	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00592	<0.000200	<0.00500	0.00999	<0.00500	<0.00500	0.00690	0.01880
	08/21/13	101	0.513	9.49	129	788	< 0.0100	<0.00500	0.119	0.266	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.02080	<0.000200	<0.00500	0.01350	<0.00500	<0.00500	<0.00500	0.01070
	02/27/14	368	0.417	1.43	88.1	1,440	0.7470	<0.00500	0.233	0.284	<0.00200	0.04170	<0.00500	<0.00500	0.541	<0.00500	0.02400	<0.000200	<0.00500	0.03390	<0.00500	<0.00500	0.00916	0.01020
	08/21/14	360	0.268	4.42	76.6	1,310	0.3140	<0.00500	0.212	0.230	<0.00200	0.04040	<0.00500	<0.00500	0.274	<0.00500	0.01280	<0.000200	<0.00500	0.02580	<0.00500	<0.00500	0.00639	0.01810
	02/26/15	220	0.490	7.00	86.0	960	0.1100	0.00550	0.200	0.230	<0.00070	<0.00140	<0.00230	<0.00530	<0.014	<0.00024	<0.00120	<0.000049	0.000830 J	<0.00490	<0.00740	<0.00280	0.00730 J	0.00590 J
	08/27/15	258	0.368 J	8.80	88.5	1,260	<0.0350	0.00537	0.232	0.245	<0.00016	0.000562 J	0.000346 J	0.000544 J	<0.0141	<0.00024	0.00141 J	<0.000049	0.000854 J	0.00204	0.00224	<0.00031	0.00891 J	0.00316 J
	03/08/16	291	0.357	7.84	78.2	1,290	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	08/18/16	94.1	0.537	3.67	71.4	593	0.0111 JB	0.00686	0.121	0.187	<0.000160	0.000982 JB	<0.000260	0.00175 JB	0.0152 J	0.000247 J	0.00123 JB	0.0000537 JB	0.00137 J	0.00243 B	0.00254	<0.000310	0.00245 J	0.00318 JB
MW-9	06/16/09	23.0	1.69	0.748	73.2	380	0.0468	0.0373	0.0911	0.122	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	- -	<0.0100
	01/14/10	23.9	1.78	1.72	74.4	450	0.0164	0.0351	0.0676	0.139	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.000656	<0.00500
	08/19/10	21.8	1.64	1.32	75.2	412	0.1150	0.0358	0.0649	0.121	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00961	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
	03/01/11	24.1	1.63	2.01	74.6	414	0.0112	0.0382	0.0586	0.131	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00662
	07/15/11	24.9	1.65	1.78	70.2	434	0.0371	0.0374	0.0647	0.166	<0.00200	0.00741	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	0.00511	<0.00500	<0.00500	<0.00500	0.00932
	01/31/12	31.5	2.22	1.43	80.5	484	<0.0100	0.0341	0.0653	0.108	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00529
	07/25/12	30.4	1.99	<2.00	77.8	420	0.0306	0.0292	0.0721	0.182	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00708	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00716
	02/27/13	31.3	1.11	2.82	79.1	440	<0.0100	0.0171	0.0766	0.154	<0.00200	<0.00500	<0.00500	<0.00500	0.702	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01670
	08/22/13	35.7	1.80	3.01	74.0	466	0.0467	0.0246	0.0736	0.153	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
	02/26/14	54.0	1.48	3.17	71.5	452	0.0161	0.0224	0.0737	0.152	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00588	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
	08/21/14	197	0.655	2.35	111	932	2.47	<0.00500	0.1740	0.124	<0.00200	0.205	<0.00500	0.00644	2.22	<0.00500	0.09030	<0.000200	0.00662	0.11100	<0.00500	<0.00500	<0.00500	0.03340
	02/25/15	49.0	0.690	3.50	69.0	440	<0.0350	0.0087	0.1000	0.180 J	<0.00070	<0.0014	<0.00230	<0.00530	<0.014	<0.00024	<0.00120	<0.000049	0.00140 J	<0.00490	<0.00740	<0.00280	0.00310 J	<0.00590
	08/26/15	46.6	0.527	4.17	67.5	495	<0.0350	0.00744	0.1080	0.163 J	<0.00016	<0.000540	<0.00026	0.000626 J	<0.0141	<0.00024	<0.00025	<0.000049	<0.00160	0.000566 J	<0.00297	<0.00031	0.00285 J	0.00258 J
	08/17/16	81.8	0.544	3.11	73.8	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
MW-10	06/16/09	32.2	0.878	1.83	76.5	378	<0.0200	<0.00500	0.1130	0.138	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	- -	0.01270
	01/13/10	33.4	1.05	1.84	77.9	436	<0.0100	<0.00500	0.0815	0.162	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.000911	0.01330
	08/19/10	31.7	1.07	1.91	79.8	508	0.0556	<0.00500	0.0798	0.129	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00569
	03/03/11	32.8	0.945	2.06	79.1	422	<0.0100	<0.00500	0.0772	0.159	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01330
	07/15/11	30.7	1.06	1.68	75.7	470	0.0318	<0.00500	0.0855	0.177	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
	01/31/12	42.9	1.00	1.85	87.4	444	<0.0100	<0.00500	0.0865	0.109	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.02520
	07/25/12	42.7	1.10	<2.00	82.6	382	<0.0100	0.00516	0.0882	0.186	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00861
	02/27/13	48.0	0.960	<2.00	83.5	416	<0.0100	0.00546	0.0972	0.164	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00633
	08/22/13	95.0	0.994	2.12	72.2	516	< 0.0100	<0.00500	0.1040	0.168	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00671
	02/26/14	112	0.674	2.43	70.9	568	< 0.0100	<0.00500	0.1060	0.147	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00979
	08/21/14	156	0.856	2.08	68.5	750	< 0.0100	<0.00500	0.1340	0.0998	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00939	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01140
	02/26/15	120	0.71	2.10	68.0	540	<0.0350	0.00430	0.1200	0.170 J	<0.00070	0.00160 J	<0.00230	<0.0053	<0.014	0.00030 J	<0.00120	<0.000049	0.00260 J	<0.00490	<0.0074	<0.00280	0.00190 J	0.00600 J
	08/26/15	115	1.19	1.92	102	551	<0.0350	0.00466	0.0982	0.154	<0.00016	0.000709 J	<0.00026	0.000803 J	<0.0141	<0.00024	<0.00025	<0.000049	0.00258 J	<0.00035	0.00283	<0.00031	0.00158 J	<0.00256
	08/17/16	57.5	0.954	1.61	75	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -

Table 3. Inorganic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	Chloride (mg/L)	Fluoride (mg/L)	Nitrate-Nitrite (as N, mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Manganese (mg/L)	Total Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Uranium (mg/L)	Zinc (mg/L)
NM WQCC Groundwater Human Health Standards:		**250**	**1.6**	**10**	**600**	**1,000**	**5.0**	**0.1**	**1.0**	**0.75**	**0.01**	**0.05**	**0.05**	**1.0**	**1.0**	**0.05**	**0.20**	**0.002**	**1.0**	**0.2**	**0.05**	**0.05**	**0.03**	**10.0**
MW-11	06/18/09	204	0.579	1.23	43.1	994	<0.0100	<0.00500	0.194	0.199	<0.00200	<0.00500	<0.00500	<0.00500	0.571	<0.00500	0.3870	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	- -	0.02120
	01/18/10	164	0.527	1.37	71.4	842	<0.0100	<0.00500	0.147	0.238	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.0559	<0.000200	<0.00500	0.01260	<0.00500	<0.00500	0.00635	<0.00500
	08/18/10	146	0.616	2.38	50.6	802	0.0125	<0.00500	0.471	0.255	<0.00200	<0.00500	<0.00500	<0.00500	0.347	<0.00500	0.5710	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.00718	<0.00500
	02/25/11	415	0.549	<0.500	82.3	1,510	<0.0100	<0.00500	0.241	0.244	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.0101	<0.000200	<0.00500	0.00856	<0.00500	<0.00500	0.00878	0.09820
	07/19/11	134	0.575	0.778	57.0	894	<0.0100	<0.00500	0.150	0.232	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.0301	<0.000200	<0.00500	0.00846	<0.00500	<0.00500	0.00616	0.02650
	02/01/12	175	0.749	<0.500	4.96	966	<0.0100	0.0176	1.40	0.288	<0.00200	<0.00500	<0.00500	<0.00500	1.77	<0.00500	1.05	<0.000200	<0.00500	0.01690	<0.00500	<0.00500	0.01380	0.01890
	07/27/12	133	0.708	<2.00	59.7	784	<0.0100	0.0128	0.827	0.374	<0.00200	<0.00500	<0.00500	<0.00500	2.02	<0.00500	2.54	<0.000200	<0.00500	0.03510	<0.00500	<0.00500	0.03300	<0.00500
	02/27/13	140	0.576	3.11	32.6	908	<0.0100	0.00802	0.561	0.349	<0.00200	<0.00500	0.00604	<0.00500	<0.200	<0.00500	5.24	<0.000200	0.00631	0.08610	<0.00500	<0.00500	0.01270	0.02260
(duplicate)	02/27/13	143	0.585	3.23	32.0	908	<0.0100	0.00787	0.574	0.349	<0.00200	<0.00500	0.00574	<0.00500	<0.200	<0.00500	5.47	<0.000200	0.00619	0.08110	<0.00500	<0.00500	0.01250	0.01990
	08/21/13	182	0.668	4.04	75.3	854	< 0.0100	<0.00500	0.195	0.283	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	2.62	<0.000200	<0.00500	0.00869	<0.00500	<0.00500	0.00723	0.00547
(duplicate)	08/21/13	172	0.673	4.19	76.2	868	< 0.0100	<0.00500	0.198	0.29	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	2.92	<0.000200	<0.00500	0.00906	<0.00500	<0.00500	0.00714	0.00592
	02/28/14	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]
	08/20/14	--[1]	--[1]	<1.0	--[1]	--[1]	0.0129	<0.00500	0.820	0.361	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	1.10	<0.000200	<0.00500	0.02170	<0.00500	<0.00500	0.02690	0.01040
	02/27/15	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]
	08/28/15	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]
	03/09/16	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]
(duplicate)	03/09/16	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]
	08/15/16	DRY WELL - PLUGGED AND ABANDONED DECEMBER 2016																						
MW-12	06/16/09	23.0	1.16	1.98	49.6	354	<0.0200	0.00516	0.0775	0.200	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	- -	<0.0100
	01/18/10	26.1	1.05	2.31	49.8	398	<0.0100	<0.00500	0.0755	0.235	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.02190	<0.000200	<0.00500	0.01820	<0.00500	<0.00500	<0.00500	<0.00500
	08/20/10	25.8	1.22	2.00	50.3	340	0.1150	0.00550	0.0756	0.176	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
	02/25/11	28.5	1.14	<0.500	50.8	402	<0.0100	0.00504	0.0760	0.198	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01850
	07/19/11	26.8	0.856	2.91	51.2	410	<0.0100	<0.00500	0.0828	0.215	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00976	<0.000200	0.00575	0.00684	<0.00500	<0.00500	<0.00500	<0.00500
	--	DAMAGED WELL - PLUGGED AND ABANDONED JUNE 2013																						
MW-12R	08/21/13	31.2	1.40	8.14	71.1	404	< 0.0100	<0.00500	0.0937	0.194	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.01290	<0.000200	0.00647	0.01030	<0.00500	<0.00500	<0.00500	0.00956
	02/27/14	28.3	0.886	7.38	63.4	432	< 0.0100	<0.00500	0.0767	0.193	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	0.00992	<0.00500	<0.00500	<0.00500	<0.00500
	08/20/14	24.5	1.05	6.98	67.2	410	1.31	<0.00500	0.1450	0.223	<0.00200	0.0516	<0.00500	<0.00500	0.867	<0.00500	0.04830	<0.000200	0.00554	0.03500	<0.00500	<0.00500	<0.00500	0.00962
	02/24/15	29	1.1	7.0	63	500	0.0370 J	0.00380	0.0950	0.200	<0.00070	<0.0014	<0.0023	<0.0053	<0.014	<0.00024	<0.0012	<0.000049	0.0042 J	<0.00490	<0.00740	<0.00280	0.00190 J	0.00810 J
	08/25/15	19.8	1.02	7.36	71.1	527	<0.0350	0.00413	0.1020	0.233	<0.00016	<0.000540	<0.000260	<0.000520	<0.0141	<0.00024	0.00203 J	<0.000049	0.00294 J	0.00191 J	0.000707 J	<0.00031	0.00270 J	0.00291 J
	03/09/16	21.6	0.985	6.35	68.2	503	0.00398 J	0.00340	0.0972	0.214	<0.000160	0.000653 J	<0.000260	0.00331 J	<0.0150	<0.000240	0.00314 JB	<0.0000490	0.00348 J	0.00349 B	0.00121 J	<0.000310	0.00291 J	<0.00256
	08/18/16	25.1	0.81	6.14	75.9	394	0.00468 JB	0.00294	0.111	0.274	<0.000160	0.00128 JB	<0.00200	0.00176 JB	<0.0150	0.000332 J	0.0025 J	0.0000689 JB	0.00267 J	0.00238 B	0.00151 J	<0.000310	0.004 J	<0.00256
MW-13	06/16/09	425	0.220	2.65	138	1,790	<0.0200	<0.00500	0.0692	0.253	<0.00200	<0.00500	0.0285	<0.00500	<0.200	<0.00500	0.0176	<0.000200	<0.00500	0.0126	<0.00500	<0.00500	- -	0.02690
	01/18/10	604	0.170	1.08	79.8	2,210	<0.0100	<0.00500	0.1110	0.231	<0.00200	0.00728	0.00624	<0.00500	<0.200	<0.00500	0.0591	<0.000200	<0.00500	0.0110	<0.00500	<0.00500	0.0119	0.00769
	08/18/10	390	0.278	<1.00	144	1,720	0.0196	<0.00500	0.1060	0.221	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.256	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.0128	0.00618
	02/25/11	340	0.281	<0.500	235	1,540	<0.0100	<0.00500	0.0692	0.242	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.225	<0.000200	<0.00500	0.0144	<0.00500	<0.00500	0.0170	0.07440
	07/19/11	351	0.327	<0.500	244	1,960	<0.0100	<0.00500	0.0800	0.249	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.302	<0.000200	<0.00500	0.0121	<0.00500	<0.00500	0.0188	0.00785
	02/01/12	418	0.322	<0.500	122	1,590	<0.0100	<0.00500	0.0752	0.228	<0.00200	<0.00500	0.00663	<0.00500	<0.200	<0.00500	0.341	<0.000200	<0.00500	0.0136	<0.00500	<0.00500	0.0128	0.05530
	07/26/12	462	0.422	<2.00	123	2,150	<0.0100	<0.00500	0.1120	0.284	<0.00200	<0.00500	0.00644	<0.00500	<0.200	<0.00500	0.459	<0.000200	<0.00500	0.0108	<0.00500	<0.00500	0.0158	0.03610
	02/26/13	430	0.366	<2.00	135	1,610	0.0139	<0.00500	0.1290	0.270	<0.00200	<0.00500	0.00657	<0.00500	<0.200	<0.00500	0.571	<0.000200	0.00568	0.0820	<0.00500	<0.00500	0.0123	0.03590
	08/21/13	548	0.389	< 1.00	108	2,000	< 0.0100	0.00590	0.1590	0.265	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.705	<0.000200	<0.00500	0.0209	<0.00500	<0.00500	0.0153	0.00931
	02/27/14	588	0.282	<0.500	106	2,380	0.0110	<0.00500	0.1910	0.258	<0.00200	0.01400	0.00541	<0.00500	0.321	<0.00500	1.01	<0.000200	<0.00500	0.0300	<0.00500	<0.00500	0.0173	0.02910
	08/19/14	485	<1.00	< 1.00	87.2	1,900	0.0737	<0.00500	0.2070	0.287	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.940	<0.000200	<0.00500	0.0065	<0.00500	<0.00500	0.0151	0.01150
	02/27/15	550	0.38	0.056 J	59	1,600	<0.0350	0.00340	0.2300	0.240	<0.00070	<0.00140	0.00470 J	<0.00530	<0.014	<0.00024	0.820	<0.000049	0.00100 J	<0.00490	<0.00740	<0.00280	0.0140	0.01900 J
	08/26/15	396	0.505	0.956	107	1,890	<0.0350	0.00301	0.1970	0.231	<0.00016	<0.00054	0.00163 J	0.00208 J	<0.0141	<0.00024	0.383	--[1]	0.00143 J	0.00276	0.000710 J	<0.00031	0.0112	0.00592 J
	03/08/16	217	0.552	2.53	75.7	972	0.00530 JB	0.00365	0.0976	0.196	<0.000160	<0.000540	<0.000260	0.00100 JB	0.0238 JB	0.000241 JB	0.000620 J	<0.0000490	0.00288 J	0.000721 JB	0.00144 J	<0.000310	0.00303 J	0.00418 JB
	08/17/16	336	0.396	1.81	97.5	1,340	0.00748 JB	0.00398	0.1490	0.223	<0.000160	0.0013 JB	0.00218	0.00287 JB	0.022 JB	<0.000240	0.241	<0.0000490	0.00111 J	0.00409 B	0.000998 J	<0.000310	0.0119	0.0159 J

Table 3. Inorganic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	Chloride (mg/L)	Fluoride (mg/L)	Nitrate-Nitrite (as N, mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Manganese (mg/L)	Total Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Uranium (mg/L)	Zinc (mg/L)
NM WQCC Groundwater Human Health Standards:		**250**	**1.6**	**10**	**600**	**1,000**	**5.0**	**0.1**	**1.0**	**0.75**	**0.01**	**0.05**	**0.05**	**1.0**	**1.0**	**0.05**	**0.20**	**0.002**	**1.0**	**0.2**	**0.05**	**0.05**	**0.03**	**10.0**
MW-14	06/16/09	93.0	0.851	5.16	60.9	540	<0.0200	<0.00500	0.0770	0.132	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.01990	<0.000200	0.02150	<0.00501	<0.00500	<0.00500	- -	0.0255
	01/18/10	103	0.810	6.03	59.0	598	<0.0100	<0.00500	<0.00500	<0.020	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
	08/20/10	74.1	0.986	2.76	61.3	340	0.1030	<0.00500	0.0774	0.131	<0.00200	0.0119	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	0.00964	0.0480	<0.00500	<0.00500	0.00527	<0.00500
	02/25/11	58.2	0.918	2.32	58.7	440	0.0101	<0.00500	0.0778	0.151	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.02340	<0.000200	0.00903	0.0138	<0.00500	<0.00500	0.00541	0.0532
	07/18/11	48.4	1.05	1.36	53.0	482	0.1760	0.00615	0.110	0.156	<0.00200	12.5	0.122	0.21800	54.9	<0.00500	1.45	<0.000200	0.08600	6.81	<0.00500	<0.00500	0.00544	0.0446
	01/31/12	59.7	0.984	1.58	58.3	444	<0.0100	<0.00500	0.0802	0.129	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.02760	<0.000200	0.00608	0.0186	<0.00500	<0.00500	<0.00500	0.0287
	07/25/12	69.3	1.03	<2.00	54.8	446	0.0116	<0.00500	0.0905	0.216	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.03210	<0.000200	<0.00500	0.0240	<0.00500	<0.00500	<0.00500	0.0448
	02/22/13	71.9	0.795	<2.00	52.9	428	<0.0100	<0.00500	0.0900	0.174	<0.00200	<0.00500	<0.00500	0.07050	<0.200	<0.00500	0.03490	<0.000200	0.01210	0.0106	<0.00500	<0.00500	0.00591	0.1480
	02/28/14	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]	--[1]
	08/20/14	--[1]	--[1]	1.10	--[1]	534	0.5730	<0.00500	0.125	0.203	<0.00200	0.02470	<0.00500	<0.00500	0.314	<0.00500	0.00919	<0.000200	0.00533	0.0178	<0.00500	<0.00500	0.00502	0.0134
	02/27/15	--[1]	--[1]	--[1]	--[1]	--[1]	<0.0350	0.0023	0.100	0.200 J	<0.00070	0.00260 J	<0.00230	<0.00530	<0.014	<0.00024	<0.00120	--	0.00400 J	<0.00490	<0.00740	<0.0028	0.00470 J	0.0070 J
	08/27/15	104	0.940	1.96	44.6	611	<0.0350	0.00271	0.0998	0.188	<0.00016	0.00261	0.000326 J	0.00122 J	<0.0141	<0.00024	<0.000250	--[1]	0.00429 J	0.00190 J	0.00123 J	<0.00031	0.00485 J	0.00334 J
	08/19/16	118	0.796	4.13	39.3	674	0.00385 JB	0.00244	0.124	0.216	<0.000160	0.00335 B	0.000476 J	0.0023 JB	<0.0150	<0.000240	0.00431 J	<0.0000490	0.00412 J	0.00253 B	0.00165 J	<0.000310	0.00554 J	0.00497 JB
MW-15	08/20/10	221	0.921	3.22	77.6	776	0.0790	<0.00500	0.145	0.175	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01980
	02/24/11	190	0.885	4.28	67.0	738	<0.0100	<0.00500	0.127	0.165	<0.00200	0.0102	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.03850
	07/14/11	236	0.701	4.18	60.9	940	<0.0100	<0.00500	0.173	0.201	<0.00200	0.0132	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	0.00657	<0.00500	<0.00500	<0.00500	0.01220
	01/30/12	304	0.840	4.09	78.6	1,330	<0.0100	<0.00500	0.180	0.178	<0.00200	0.00644	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00967
	07/24/12	291	0.965	8.22	80.3	1,060	<0.0100	<0.00500	0.178	0.227	<0.00200	0.0110	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00636
	02/19/13	254	0.819	5.12	76.0	882	0.0682	<0.00500	0.178	0.191	<0.00200	0.129	<0.00500	<0.00500	0.610	<0.00500	0.01980	<0.000200	<0.00500	0.07040	<0.00500	<0.00500	<0.00500	0.01600
	08/20/13	379	0.910	6.82	71.3	1,280	< 0.0100	<0.00500	0.232	0.194	<0.00200	0.00594	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00854
(duplicate)	08/20/13	381	0.931	6.83	72.7	1,230	< 0.0100	<0.00500	0.232	0.188	<0.00200	0.00582	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00619
	02/24/14	256	0.715	7.86	83.0	858	< 0.0100	<0.00500	0.178	0.175	<0.00200	0.00910	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
(duplicate)	02/24/14	263	0.832	8.07	82.5	810	< 0.0100	<0.00500	0.178	0.174	<0.00200	0.00961	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
	08/21/14	148	1.02	8.52	97.5	690	0.0102	<0.00500	0.146	0.117	<0.00200	0.00513	<0.00500	<0.00500	<0.200	<0.00500	0.00509	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01490
(duplicate)	08/21/14	150	1.01	8.53	95.6	706	0.0136	<0.00500	0.153	0.119	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.02130
	02/24/15	150	0.90	8.4	94	650	0.0520 J	0.00400	0.150	0.170 J	<0.00070	0.0034 J	<0.0023	<0.0053	<0.014	<0.00024	<0.00120	<0.000049	0.00240 J	<0.00490	<0.00740	<0.00280	0.0021 J	0.01200 J
	08/27/15	181	1.13	8.48	123	728	<0.0350	0.00424	0.146	0.167	<0.00016	0.00285	<0.00026	0.00109 J	<0.0141	0.000373 J	0.000492 J	<0.000049	0.00249 J	0.000825 J	0.00232	<0.00031	0.00220 J	<0.00256
(duplicate)	08/27/15	234	1.46	8.47	158	729	<0.0350	0.00443	0.146	0.174	<0.00016	0.00272	<0.00026	<0.000520	0.0144 J	<0.000240	0.000276 J	<0.000049	0.00254 J	0.000688 J	0.00253	<0.00031	0.00200 J	<0.00256
	03/07/16	160	0.88	6.53	85.9	727	0.00537 JB	0.00420	0.140	0.156	<0.000160	0.00281	<0.000260	0.000956 JB	<0.0150	0.000309 JB	0.000837 JB	<0.0000490	0.00240 J	0.00173 B	0.00234	<0.000310	0.00248 J	0.00275 JB
	08/15/16	169	0.685	5.19	93.2	721	0.00418 JB	0.00353	0.140	0.176	<0.000160	0.00128 JB	0.000281 J	0.00193 JB	<0.100	<0.000240	0.00394 J	<0.0000490	0.00326 J	0.00597 B	0.00245	<0.000310	0.00275 J	0.00409 J
(duplicate)	08/15/16	165	0.738	5.09	93.3	723	0.00531 JB	0.00353	0.145	0.183	<0.000160	0.0013 JB	0.000293 J	0.000569 JB	0.0441 JB	<0.000240	0.00413 J	<0.0000490	0.0034 J	0.00598 B	0.00259	<0.000310	0.00281 J	0.00403 J
MW-16	08/20/10	25.3	0.930	1.13	73.7	406	0.0746	<0.00500	0.1090	0.156	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00554	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01450
	02/24/11	28.1	0.928	2.36	73.7	412	<0.0100	<0.00500	0.1070	0.162	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00671	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.02480
	07/15/11	25.5	1.04	1.82	72.0	484	0.188	<0.00500	0.1290	0.181	<0.00200	0.11500	<0.00500	<0.00500	0.613	<0.00500	0.01640	<0.000200	<0.00500	0.05910	<0.00500	<0.00500	<0.00500	0.01760
(duplicate)	07/15/11	21.0	0.733	1.98	54.1	476	0.0374	<0.00500	0.1180	0.185	<0.00200	0.02510	<0.00500	<0.00500	0.241	<0.00500	0.00820	<0.000200	<0.00500	0.02340	<0.00500	<0.00500	<0.00500	0.01660
	01/30/12	27.9	0.994	1.79	77.6	398	<0.0100	<0.00500	0.0964	0.166	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00899
	07/24/12	26.6	1.14	<2.00	72.6	404	0.0102	<0.00500	0.0966	0.202	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.01620	<0.000200	<0.00500	0.01120	<0.00500	<0.00500	<0.00500	0.01670
	02/20/13	24.0	0.966	<2.00	68.1	316	<0.0100	0.00547	0.0968	0.172	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00693
	08/20/13	24.7	1.02	1.75	64.0	392	0.026	<0.00500	0.1050	0.192	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.02190	<0.000200	<0.00500	0.01770	<0.00500	<0.00500	<0.00500	<0.00500
	02/25/14	23.9	0.766	1.83	62.3	362	<0.0100	<0.00500	0.0938	0.172	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.02250	<0.000200	0.00516	0.02950	<0.00500	<0.00500	<0.00500	0.00786
	08/19/14	21.7	0.975	1.41	64.9	362	0.335	<0.00500	0.1040	0.209	<0.00200	0.00751	<0.00500	<0.00500	<0.200	<0.00500	0.00544	<0.000200	<0.00500	0.00667	<0.00500	<0.00500	<0.00500	0.00897
	02/24/15	20	1.0	1.9	61	360	0.042 J	0.00510	0.0980	0.170 J	<0.00070	<0.00140	<0.00230	<0.0053	<0.014	<0.00024	0.00420 J	<0.000049	0.00350 J	<0.00490	<0.00740	<0.00280	0.00160 J	0.01400 J
	08/27/15	21.3	1.07	2.34	66.0	408	<0.0350	0.00528	0.0936	0.176	<0.00016	<0.00054	<0.00026	0.000638 J	<0.0141	<0.00024	0.000312 J	<0.000049	0.00293 J	<0.00035	0.00228	<0.00031	0.00156 J	0.00343 J
	08/15/16	22.3	0.859	1.69	63.5	418	0.00512 JB	0.00434	0.0973	0.181	<0.000160	0.00122 JB	<0.000260	0.000659 JB	0.0571 JB	<0.000240	0.00916	<0.0000490	0.00631	0.0117	0.00246	<0.000310	0.00206 J	0.00454 J

Table 3. Inorganic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	Chloride (mg/L)	Fluoride (mg/L)	Nitrate-Nitrite (as N, mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Manganese (mg/L)	Total Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Uranium (mg/L)	Zinc (mg/L)
NM WQCC Groundwater Human Health Standards:		**250**	**1.6**	**10**	**600**	**1,000**	**5.0**	**0.1**	**1.0**	**0.75**	**0.01**	**0.05**	**0.05**	**1.0**	**1.0**	**0.05**	**0.20**	**0.002**	**1.0**	**0.2**	**0.05**	**0.05**	**0.03**	**10.0**
MW-17	08/20/10	426	0.517	4.27	72.6	1,650	0.146	<0.00500	0.180	0.157	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0142
	02/24/11	412	0.435	5.33	80.0	1,634	<0.0100	<0.00500	0.152	0.162	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0478
	07/18/11	336	0.753	4.07	82.7	1,850	<0.0100	<0.00500	0.141	0.165	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.0126
	- -	DAMAGED WELL - PLUGGED AND ABANDONED JUNE 2013																						
MW-17R	08/22/13	246	0.602	3.44	81.7	1,190	0.0302	<0.00500	0.154	0.188	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.0819	<0.000200	0.00531	0.0189	<0.00500	<0.00500	<0.00500	<0.00500
	02/27/14	184	0.425	0.629	92.5	904	0.2540	<0.00500	0.121	0.193	<0.00200	0.0121	<0.00500	<0.00500	<0.200	<0.00500	0.0342	<0.000200	<0.00500	0.0273	<0.00500	<0.00500	<0.00500	<0.00500
	08/22/14	170	0.602	2.70	94.8	860	0.0459	<0.00500	0.153	0.120	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.0989	<0.000200	<0.00500	0.0378	<0.00500	<0.00500	<0.00500	0.02430
	02/26/15	150	0.65	2.6	75	670	0.0460 J	0.00280	0.120	--	<0.00070	0.0022 J	<0.00230	<0.0053	<0.014	0.00030 J	<0.0012	<0.000049	0.00130 J	<0.0049	<0.00740	<0.00280	0.00300 J	0.02300 J
	08/27/15	110	0.859	2.86	87.4	658	<0.0350	0.00320	0.0972	0.171	<0.00016	0.000967 J	<0.00026	0.000632 J	0.0218 J	<0.000240	0.00123 J	<0.000049	0.00163 J	0.000779 J	0.00203	<0.00031	0.00267 J	<0.00256
	03/08/16	65.3	0.722	2.55	76.0	465	0.0150 JB	0.00259	0.0739	0.161	<0.000160	<0.000540	0.000315 J	0.000717 JB	<0.0150	<0.000240	0.0544	<0.0000490	0.000749 J	0.00103 JB	0.00185 J	<0.000310	0.00666 J	0.00412 JB
	08/17/16	219	0.578	4.37	79.8	526	0.00299 JB	0.00251	0.143	0.199	<0.000160	0.0011 JB	<0.000260	0.00145 JB	<0.0150	<0.000240	0.00281 J	<0.0000490	0.0014 J	0.00147 JB	0.00143 J	<0.000310	0.00285 J	<0.00256
MW-18	08/23/10	176	0.456	0.733	287	1,080	0.0787	<0.00500	0.0575	0.334	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.31400	<0.000200	0.00561	0.0298	0.00548	<0.00500	0.0123	0.07720
	02/24/11	286	0.514	4.14	298	1,240	0.0157	<0.00500	0.0766	0.330	<0.00200	0.0186	<0.00500	<0.00500	<0.200	<0.00500	0.00536	<0.000200	<0.00500	0.0144	0.00501	<0.00500	0.00883	0.04390
	07/18/11	218	0.800	5.74	234	1,290	0.0244	<0.00500	0.05636	0.396	<0.00200	0.0111	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	0.0129	<0.00500	<0.00500	0.00666	0.06610
	01/31/12	106	0.722	3.89	94.3	584	0.0113	<0.00500	0.0645	0.133	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01910
	07/25/12	103	0.753	2.01	63.4	562	0.0110	<0.00500	0.0780	0.230	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00684
	02/22/13	181	0.564	4.02	116	782	0.0742	<0.00500	0.1050	0.249	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.01290	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.0138	0.01870
	08/22/13	197	0.531	5.59	130	1,100	< 0.0100	<0.00500	0.1100	0.243	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	0.00509	<0.00500	<0.00500	<0.00500	<0.00500
	02/26/14	145	0.514	4.36	89.1	680	0.0213	<0.00500	0.0766	0.244	<0.00200	<0.00500	<0.00500	0.0215	<0.200	<0.00500	0.01770	<0.000200	<0.00500	0.00681	<0.00500	<0.00500	0.00701	0.04650
	08/20/14	143	0.590	1.97	123	678	1.31	<0.00500	0.1450	0.242	<0.00200	0.00506	<0.00500	<0.00500	0.637	<0.00500	0.03780	<0.000200	<0.00500	0.00634	<0.00500	<0.00500	<0.00500	0.03630
	02/26/15	130	0.68	3.5	97	670	0.069 J	0.0026	0.1000	0.260	<0.00070	<0.0014	<0.00230	0.0061 J	0.022 J	0.00026 J	<0.00120	<0.000049	0.00200 J	<0.00490	<0.00740	<0.00280	0.00390 J	0.01700 J
	08/25/15	136	0.703	2.73	65.8	844	<0.0350	0.00288	0.1160	0.188 J	<0.00016	0.00118 J	<0.00026	0.000646 J	<0.0141	<0.00024	0.00120 J	<0.000049	0.00612	0.00151 J	0.00178 J	<0.00031	0.00434 J	0.00669 J
	08/17/16	162	0.557	3.71	53.4	799	<0.00200	0.00194 J	0.108	0.223	<0.000160	0.00195 JB	<0.000260	0.00214 JB	0.0201 J	<0.000240	0.00261 J	0.0000593 JB	0.00217 J	0.00139 JB	0.00173 J	<0.000310	0.00423 J	0.00992 JB
MW-19	08/23/10	469	0.536	2.94	178	1,650	0.1010	0.04760	0.2290	<0.020	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00666	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.02270
	02/24/11	235	0.713	2.87	90.7	828	<0.0100	<0.00500	0.0764	0.180	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.03180
	07/18/11	688	0.734	3.66	142	2,880	<0.0100	<0.00500	0.0920	0.266	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00781	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.05530
	01/31/12	610	0.568	4.12	121	1,770	<0.0100	<0.00500	0.0688	0.350	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00553	<0.000200	<0.00500	0.00525	<0.00500	<0.00500	<0.00500	0.03450
	07/25/12	1,130	0.450	5.11	117	3,570	0.0114	<0.00500	0.1060	0.535	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00593	<0.000200	<0.00500	0.00664	<0.00500	<0.00500	<0.00500	0.07140
	02/26/13	540	0.519	4.21	115	1,650	<0.0100	<0.00500	0.0870	0.300	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	0.00566	<0.00500	<0.00500	<0.00500	0.06290
	08/22/13	487	0.645	3.43	92.6	1,430	<0.0100	<0.00500	0.0857	0.241	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00512
(duplicate)	08/22/13	475	0.672	3.38	95.7	1,670	0.0182	<0.00500	0.0864	0.237	<0.00200	0.0143	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	0.00900	<0.00500	<0.00500	<0.00500	<0.00500
	02/26/14	264	0.576	2.34	72.3	850	0.0120	<0.00500	0.0793	0.227	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.01570	<0.000200	<0.00500	0.01220	<0.00500	<0.00500	<0.00500	0.03330
(duplicate)	02/26/14	288	0.555	2.51	76.0	950	0.0435	<0.00500	0.0753	0.204	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.01650	<0.000200	<0.00500	0.01230	<0.00500	<0.00500	<0.00500	0.03500
	08/19/14	233	0.592	2.48	84.5	774	0.0461	<0.00500	0.2690	0.279	<0.00200	0.0352	<0.00500	<0.00500	0.263	<0.00500	0.02040	<0.000200	<0.00500	0.02610	<0.00500	<0.00500	<0.00500	0.00854
(duplicate)	08/19/14	241	0.627	2.59	84.7	820	0.0208	<0.00500	0.0846	0.236	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.01060	<0.000200	<0.00500	0.00943	<0.00500	<0.00500	<0.00500	0.00640
	02/26/15	140	0.87	2.3	82	630	<0.0350	0.00460	0.0700	0.220	<0.00070	<0.0014	<0.0023	<0.0053	<0.014	<0.00024	<0.00120	<0.000049	0.00320 J	<0.00490	<0.00740	<0.00280	0.00250 J	0.01400 J
(duplicate)	02/26/15	130	0.86	2.4	85	660	0.089 J	0.00460	0.0690	0.210	<0.00070	<0.0014	<0.0023	<0.0053	<0.014	<0.00024	<0.00120	<0.000049	0.00320 J	<0.00490	<0.00740	<0.00280	0.00250 J	0.01300 J
	08/26/15	236	0.789	2.86	70.9	888	<0.0350	0.00422	0.0875	0.185 J	<0.00016	0.00105 J	<0.000260	0.000732 J	<0.0141	<0.00024	<0.00025	<0.000049	0.01070	0.00168 J	0.00138 J	<0.00031	0.00179 J	0.00486 J
	03/08/16	297	0.749	2.81	63.2	1,170	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
	08/17/16	470	0.749	2.93	90.3	1,660	0.00479 JB	0.00383	0.0919	0.191	<0.000160	0.00129 JB	<0.000260	0.000646 JB	0.0268 JB	<0.000240	0.00104 JB	<0.0000490	0.00287 J	0.000547 JB	0.00148 J	<0.000310	0.00312 J	0.00397 J
MW-20	08/23/10	169	0.570	1.74	65.1	868	0.0891	<0.00500	0.122	0.143	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00970
	02/25/11	187	0.603	2.58	66.3	840	<0.0100	<0.00500	0.120	0.150	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.06430
	07/18/11	148	0.765	2.06	51.3	1,020	<0.0100	<0.00500	0.134	0.159	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.02780
	01/31/12	174	0.641	2.51	61.4	726	<0.0100	<0.00500	0.114	0.149	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01710
	07/25/12	189	0.742	2.24	56.0	848	<0.0100	<0.00500	0.107	0.217	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01870
	02/22/13	155	0.570	2.26	55.8	600	0.0294	<0.00500	0.102	0.164	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01650
	08/20/13	180	0.755	2.40	60.4	736	0.0104	<0.00500	0.102	0.172	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00966	<0.000200	<0.00500	0.0112	<0.00500	<0.00500	<0.00500	0.02420
	02/26/14	159	0.664	2.70	53.4	696	<0.0100	<0.00500	0.112	0.173	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.01070	<0.000200	<0.00500	0.0080	<0.00500	<0.00500	<0.00500	0.00954
	08/19/14	138	0.574	2.09	58.5	672	0.2900	<0.00500	0.108	0.194	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01160
	02/24/15	120	0.65	2.6	56	690	0.0380 J	0.00310	0.110	0.170 J	<0.00070	0.00200 J	<0.00230	<0.00530	<0.014	<0.00024	<0.00120	<0.000049	0.0024 J	<0.00490	<0.00740	<0.00280	0.00260 J	0.02300 J
	08/25/15	130	0.822	2.61	65.7	750	<0.0350	0.00396	0.108	0.180 J	<0.00016	0.000955 J	<0.000260	0.00109 J	<0.0141	<0.00024	<0.00025	<0.000049	0.00167 J	0.000669 J	0.00141 J	<0.00031	0.00254 J	0.00578 J
	08/16/16	137	0.663	2.5	59.9	652	0.0047 JB	0.00389	0.108	0.177	<0.000160	0.00177 JB	<0.000260	0.00552	0.0167 JB	0.000352 JB	0.000461 JB	<0.0000490	0.00236 J	0.000656 JB	0.00145 J	<0.000310	0.00275 J	0.00757 J

Table 3. Inorganic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	Chloride (mg/L)	Fluoride (mg/L)	Nitrate-Nitrite (as N, mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Manganese (mg/L)	Total Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Uranium (mg/L)	Zinc (mg/L)
NM WQCC Groundwater Human Health Standards:		**250**	**1.6**	**10**	**600**	**1,000**	**5.0**	**0.1**	**1.0**	**0.75**	**0.01**	**0.05**	**0.05**	**1.0**	**1.0**	**0.05**	**0.20**	**0.002**	**1.0**	**0.2**	**0.05**	**0.05**	**0.03**	**10.0**
MW-21	08/23/10	115	0.250	2.12	52.7	966	0.1950	<0.00500	0.232	0.208	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.0567	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.00898	0.0307
	02/28/11	182	0.257	3.02	56.7	1,050	<0.0100	<0.00500	0.258	0.257	<0.00200	0.00620	<0.00500	<0.00500	<0.200	<0.00500	0.1020	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.0101	0.0184
(duplicate)	02/28/11	183	0.249	2.99	56.3	1,000	<0.0100	<0.00500	0.256	0.252	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.1010	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.00975	0.0213
	07/19/11	191	0.163	2.62	57.0	1,250	<0.0100	<0.00500	0.242	0.225	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.0346	<0.000200	<0.00500	0.00836	<0.00500	<0.00500	0.00873	0.0286
	01/31/12	200	0.229	2.84	64.7	1,040	<0.0100	<0.00500	0.245	0.216	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.0375	<0.000200	<0.00500	0.00746	<0.00500	<0.00500	0.00704	0.0170
	07/26/12	186	0.306	2.64	60.4	1,130	<0.0100	<0.00500	0.244	0.261	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.0380	<0.000200	<0.00500	0.00827	<0.00500	<0.00500	0.00862	0.0163
	02/22/13	160	0.246	2.86	78.3	968	0.0818	<0.00500	0.224	0.286	<0.00200	0.03640	<0.00500	<0.00500	0.403	<0.00500	0.0467	<0.000200	<0.00500	0.04090	<0.00500	<0.00500	0.00962	0.0319
	08/20/13	156	0.268	3.96	82.5	972	< 0.0100	<0.00500	0.179	0.308	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.0668	<0.000200	<0.00500	0.02190	<0.00500	<0.00500	0.00936	0.0195
	02/25/14	134	0.213	3.78	75.9	918	< 0.0100	<0.00500	0.187	0.335	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.0709	<0.000200	<0.00500	0.01710	<0.00500	<0.00500	0.00939	0.0531
	08/19/14	156	0.250	3.35	72.7	938	0.0299	<0.00500	0.180	0.350	<0.00200	<0.00500	<0.00500	<0.00500	0.344	<0.00500	0.0439	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.00844	0.0208
	02/24/15	160	0.32	3.70	70.0	1,100	<0.0350	0.00170 J	0.210	0.360	<0.00070	<0.00140	<0.00230	<0.00530	<0.014	0.00032 J	0.0280	<0.000049	0.00074 J	<0.00490	<0.00740	<0.00280	0.0089 J	0.02500 J
	08/25/15	197	0.341	3.06	77.0	1,430	<0.0350	0.00221	0.224	0.369	<0.00016	0.000810 J	<0.000260	0.000702 J	<0.0141	0.000854 J	0.0110	<0.000049	<0.00160	0.00180 J	0.000525 J	<0.00031	0.00837 J	0.00615 J
	08/16/16	131	0.253	4.05	71.7	- -	0.0021 JB	0.00147 J	0.171	0.46	<0.000160	0.00115 JB	<0.000260	0.000881 JB	<0.0150	<0.000240	0.00793	- -	0.000639 J	0.00167 JB	0.000702 J	<0.000310	0.0092 J	0.00432 J
MW-22	08/23/10	115	0.552	1.76	62.3	726	0.1210	<0.00500	0.165	0.174	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.03060	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.00604	0.09160
	02/28/11	117	0.587	2.36	68.6	678	<0.0100	<0.00500	0.146	0.173	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.01080	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.00616	0.04870
	07/19/11	107	0.568	2.06	64.1	740	<0.0100	<0.00500	0.150	0.178	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00721	<0.000200	<0.00500	0.00546	<0.00500	<0.00500	0.00638	0.02030
	01/31/12	141	0.570	2.26	74.3	766	<0.0100	<0.00500	0.151	0.141	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.01030	<0.000200	<0.00500	0.00762	<0.00500	<0.00500	0.00501	0.01830
	07/26/12	149	0.628	2.09	68.3	830	<0.0100	<0.00500	0.143	0.196	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00949	<0.000200	<0.00500	0.00839	<0.00500	<0.00500	0.00564	0.00680
	02/21/13	178	0.500	2.30	80.4	798	0.0231	<0.00500	0.145	0.180	<0.00200	0.0305	<0.00500	<0.00500	0.269	<0.00500	0.03860	<0.000200	<0.00500	0.05200	<0.00500	<0.00500	0.00590	0.02080
	08/21/13	176	0.606	2.94	83.0	890	< 0.0100	<0.00500	0.137	0.210	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.02330	<0.000200	<0.00500	0.02090	<0.00500	<0.00500	0.00658	0.00566
	02/25/14	172	0.416	3.53	85.2	842	< 0.0100	<0.00500	0.143	0.204	<0.00200	0.0133	<0.00500	<0.00500	<0.200	<0.00500	0.02380	<0.000200	<0.00500	0.02660	<0.00500	<0.00500	0.00632	0.01500
	08/20/14	120	1.00	2.36	127	738	40.3	0.00642	0.141	0.239	<0.00200	0.1840	<0.00500	0.00983	4.32	0.00743	0.07150	<0.000200	0.00881	0.09990	<0.00500	<0.00500	0.0336	0.03700
	02/24/15	110	0.57	3.30	81.0	820	0.0370 J	0.00250	0.180	0.210	<0.00070	<0.00140	<0.0023	<0.0053	<0.014	0.00077 J	0.00260 J	<0.000049	0.00140 J	<0.00490	<0.00740	<0.00280	0.01200	0.01900 J
	08/25/15	118	0.618	4.85	81.1	928	0.0452 J	0.00279	0.167	0.208	<0.00016	0.00139 J	0.000337 J	0.000760 J	<0.0141	<0.00024	0.00253 J	<0.000049	<0.00160	0.00240	<0.00038	<0.00031	0.00934 J	0.00438 J
	08/16/16	128	0.577	5.86	57.6	827	0.00281 JB	0.00241	0.15	0.19	<0.000160	0.00199 JB	<0.000260	0.000854 JB	<0.0150	<0.000240	0.00134 JB	<0.0000490	0.00142	0.00143 JB	0.000387 J	<0.000310	0.00865 J	0.0038 J
MW-23	08/23/10	645	0.782	2.92	121	2,260	0.2370	<0.00500	0.245	0.157	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00669	<0.000200	<0.00500	0.00859	<0.00500	<0.00500	<0.00500	0.05700
	02/28/11	511	0.676	3.47	81.9	1,540	<0.0100	<0.00500	0.164	0.151	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00831	<0.000200	<0.00500	0.00930	<0.00500	<0.00500	<0.00500	0.04630
	07/19/11	712	0.670	3.79	108	3,090	<0.0100	<0.00500	0.272	0.181	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00647	<0.000200	<0.00500	0.00912	<0.00500	<0.00500	<0.00500	0.02130
	02/01/12	887	0.697	4.07	85.4	2,720	0.0108	<0.00500	0.268	0.159	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00658	<0.000200	<0.00500	0.00714	<0.00500	<0.00500	<0.00500	0.02070
	07/26/12	774	0.750	3.45	100	3,060	<0.0100	<0.00500	0.252	0.198	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01010
	02/26/13	662	0.690	3.46	93.9	2,040	<0.0100	<0.00500	0.170	0.196	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00944	<0.000200	<0.00500	0.01550	<0.00500	<0.00500	<0.00500	0.01790
	08/21/13	530	0.808	3.29	115	1,910	< 0.0100	<0.00500	0.141	0.207	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.03150	<0.000200	<0.00500	0.02860	<0.00500	<0.00500	0.00533	0.00919
	02/25/14	574	0.605	3.41	89.0	1,860	< 0.0100	<0.00500	0.162	0.198	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.04860	<0.000200	<0.00500	0.04100	<0.00500	<0.00500	<0.00500	0.02240
	08/21/14	443	0.792	2.89	98.1	1,680	0.0606	<0.00500	0.147	0.138	<0.00200	0.0129	<0.00500	<0.00500	<0.200	<0.00500	0.15700	<0.000200	0.00522	0.07190	<0.00500	<0.00500	<0.00500	0.01040
	02/25/15	57.0	0.630	3.10	92.0	1,000	0.0420 J	0.00240	0.110	0.210	<0.00070	<0.0014	<0.0023	<0.0053	<0.014	0.00031 J	<0.00120	<0.000049	0.00170 J	<0.00490	<0.00740	<0.00280	0.00520 J	0.04600 J
	08/25/15	431	0.874	4.39	91.9	2,190	<0.0350	0.00255	0.152	0.195 J	<0.00016	0.00188 J	<0.000260	0.00198 J	<0.0141	0.000316 J	0.00167 J	<0.000049	<0.00160	0.00187 J	0.00147 J	<0.00031	0.00508 J	0.00494 J
	08/16/16	411	0.792	3.02	88.5	1,400	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -	- -
MW-24	08/24/10	34.6	2.31	2.40	53.9	422	0.187	<0.00500	0.0867	0.140	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00922
	02/28/11	39.6	2.16	2.94	55.3	414	<0.0100	<0.00500	0.0878	0.154	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	0.00634	<0.00500	<0.00500	<0.00500	0.02450
	07/14/11	43.1	1.55	2.38	48.1	504	<0.0100	<0.00500	0.0932	0.173	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	0.00543	<0.00500	<0.00500	<0.00500	0.02490
	02/01/12	50.6	2.42	2.32	62.3	418	<0.0100	<0.00500	0.0946	0.127	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00760	<0.000200	<0.00500	0.00725	<0.00500	<0.00500	<0.00500	0.01010
	07/30/12	51.8	2.42	2.39	55.1	420	<0.0100	<0.00500	0.0889	0.179	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00508	<0.000200	<0.00500	0.00758	<0.00500	<0.00500	<0.00500	0.01270
(duplicate)	07/30/12	55.5	2.34	2.34	58.8	446	<0.0100	<0.00500	0.0851	0.160	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	0.00731	<0.00500	<0.00500	<0.00500	0.01550
	02/26/13	46.6	2.39	2.05	68.6	442	<0.0100	<0.00500	0.0913	0.187	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.01060	<0.000200	<0.00500	0.01650	<0.00500	<0.00500	<0.00500	0.01510
	08/21/13	56.5	2.77	2.04	55.6	426	< 0.0100	<0.00500	0.0856	0.183	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.01460	<0.000200	<0.00500	0.01570	<0.00500	<0.00500	<0.00500	0.00684
	02/27/14	37.3	2.28	2.11	51.3	396	0.0247	<0.00500	0.0803	0.197	<0.00200	0.0128	<0.00500	<0.00500	<0.200	<0.00500	0.01390	<0.000200	<0.00500	0.02130	<0.00500	<0.00500	<0.00500	0.02070
	08/21/14	29.2	2.76	2.39	44.0	368	0.2700	<0.00500	0.0901	0.117	<0.00200	0.2580	<0.00500	0.00634	1.28	<0.00500	0.03830	<0.000200	0.00911	0.13500	<0.00500	<0.00500	<0.00500	0.01140
	02/25/15	24.0	2.70	2.80	42.0	360	0.0400 J	0.00550	0.0780	0.190 J	<0.00070	<0.0014	<0.00230	<0.00530	<0.014	<0.00024	<0.00120	<0.000049	0.00250 J	<0.00490	<0.00740	<0.00280	0.00260 J	0.01300 J
	08/25/15	25.5	2.75	2.95	43.2	494	<0.0350	0.00600	0.0765	0.177 J	<0.00016	<0.000540	<0.00026	0.000742 J	<0.0141	<0.00024	0.000287 J	<0.000049	0.00185 J	0.00058 J	0.00102 J	<0.00031	0.00239 J	0.00575 J
	08/16/16	26.0	2.78	2.83	42.9	407	0.00364 JB	0.00606	0.0725	0.168	<0.000160	0.00155 JB	<0.000260	0.00302 JB	0.0247 JB	<0.000240	0.000485 JB	<0.0000490	0.0029 J	0.000402 JB	0.0014 J	<0.000310	0.00237 J	0.00752 J

Table 3. Inorganic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	Chloride (mg/L)	Fluoride (mg/L)	Nitrate-Nitrite (as N, mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Manganese (mg/L)	Total Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Uranium (mg/L)	Zinc (mg/L)
NM WQCC Groundwater Human Health Standards:		**250**	**1.6**	**10**	**600**	**1,000**	**5.0**	**0.1**	**1.0**	**0.75**	**0.01**	**0.05**	**0.05**	**1.0**	**1.0**	**0.05**	**0.20**	**0.002**	**1.0**	**0.2**	**0.05**	**0.05**	**0.03**	**10.0**
MW-25	08/23/10	178	0.871	2.42	182	946	0.2440	<0.00500	0.246	0.174	<0.00200	0.0476	<0.00500	<0.00500	<0.200	<0.00500	0.01090	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01940
	02/28/11	256	0.729	2.83	93.9	998	<0.0100	<0.00500	0.205	0.198	<0.00200	0.0537	<0.00500	<0.00500	<0.200	<0.00500	0.00715	<0.000200	<0.00500	0.00516	<0.00500	<0.00500	0.00535	0.04240
	07/18/11	77.8	1.12	3.64	96.2	634	0.0444	<0.00500	0.186	0.173	<0.00200	0.00732	<0.00500	<0.00500	<0.200	<0.00500	0.00608	<0.000200	<0.00500	0.00832	<0.00500	<0.00500	<0.00500	0.00556
	02/01/12	175	0.813	4.56	84.4	820	<0.0100	<0.00500	0.228	0.175	<0.00200	0.00744	<0.00500	<0.00500	<0.200	<0.00500	0.00804	<0.000200	<0.00500	0.00708	<0.00500	<0.00500	0.00602	0.00582
	07/26/12	133	0.892	37.1	144	1,110	<0.0100	<0.00500	0.178	0.220	<0.00200	0.00961	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01020
	02/26/13	109	0.710	19.4	113	788	<0.0100	<0.00500	0.149	0.241	<0.00200	0.00822	<0.00500	<0.00500	<0.200	<0.00500	0.01040	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.00807	0.01480
	08/22/13	314	0.696	3.36	74.7	1,350	< 0.0100	<0.00500	0.224	0.262	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.01220	<0.000200	<0.00500	0.02100	<0.00500	<0.00500	0.00862	<0.00500
(duplicate)	08/22/13	310	0.684	3.42	74.3	1,350	< 0.0100	<0.00500	0.226	0.263	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.01270	<0.000200	<0.00500	0.02100	<0.00500	<0.00500	0.00860	0.00607
	02/26/14	293	0.476	2.98	69.3	1,100	< 0.0100	<0.00500	0.220	0.231	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00881	<0.000200	<0.00500	0.00775	<0.00500	<0.00500	0.00724	0.02100
(duplicate)	02/26/14	289	0.546	2.98	68.6	1,090	< 0.0100	<0.00500	0.213	0.218	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00882	<0.000200	<0.00500	0.00701	<0.00500	<0.00500	0.00645	0.02050
	08/19/14	302	<0.500	3.06	79.5	1,230	0.2850	<0.00500	0.198	0.265	<0.00200	0.154	<0.00500	<0.00500	0.814	<0.00500	0.04560	<0.000200	0.00573	0.10000	<0.00500	<0.00500	0.00749	0.01060
(duplicate)	08/19/14	319	<0.500	2.76	83.5	1,200	0.2910	<0.00500	0.201	0.263	<0.00200	0.185	<0.00500	0.00504	0.968	<0.00500	0.05110	<0.000200	0.00638	0.11300	<0.00500	<0.00500	0.00764	0.01200
	02/25/15	38	0.73	3.1	69	870	0.1300	0.00230	0.200	0.230	<0.00070	0.0016 J	<0.0023	<0.0053	<0.014	0.00050 J	<0.00120	<0.000049	0.00290 J	0.00560 J	<0.00740	<0.00280	0.00780 J	0.00860 J
(duplicate)	02/25/15	180	0.71	3.1	69	840	<0.0350	0.00230	0.200	0.220	<0.00070	0.0017 J	<0.0023	<0.0053	<0.014	0.00026 J	<0.00120	<0.000049	0.00110 J	0.00540 J	<0.00740	<0.00280	0.00800 J	0.01400 J
	08/25/15	211	0.693	2.96	72.6	1,110	<0.0350	0.00287	0.227	0.216	<0.00016	0.00160 J	0.00119 J	<0.000520	<0.0141	<0.00024	0.00279 J	<0.000049	<0.00160	0.00514	0.00109 J	<0.00031	0.00732 J	0.00472 J
(duplicate)	08/25/15	207	0.631	2.90	71.1	1,140	<0.0350	0.00296	0.231	0.214	<0.00016	0.00170 J	0.00113 J	0.00103 J	<0.0141	<0.00024	0.00287 J	<0.000049	<0.00160	0.00528	0.00102 J	<0.00031	0.00748 J	0.00497 J
	03/09/16	345	0.618	2.65	68.5	1,140	0.00206 JB	0.00229	0.301	0.214	<0.000160	0.000609 J	0.00141 J	0.000781 JB	0.0403 J	<0.000240	0.0386	<0.0000490	0.00171 JB	0.00572 B	0.000540 J	<0.000310	0.00852 J	0.00590 JB
	08/16/16	292	0.637	1.44	73.9	976	0.0085 JB	0.00248	0.285	0.228	<0.000160	0.00166 JB	0.00171 J	0.00107 JB	0.0293 JB	<0.000240	0.0314	<0.0000490	0.00139 J	0.00617	0.000689 J	<0.000310	0.00928 J	0.00584 J
(duplicate)	08/16/16	287	0.638	1.5	73.5	1,010	0.00458 JB	0.00262	0.284	0.223	<0.000160	0.00155 JB	0.00179 J	0.00079 JB	0.0474 JB	<0.000240	0.0326	<0.0000490	0.00131 J	0.0057	0.000791 J	<0.000310	0.00939 J	0.00627 J
MW-26	08/24/10	217	0.484	2.88	98.5	958	0.115	<0.00500	0.1310	0.169	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.01560	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.02540
	02/28/11	202	0.517	3.86	125	940	<0.0100	<0.00500	0.1100	0.187	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00890	<0.000200	<0.00500	0.00734	<0.00500	<0.00500	0.00602	0.03280
	07/14/11	184	<0.500	3.95	128	1,030	<0.0100	<0.00500	0.0994	0.192	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00679	<0.000200	<0.00500	0.00792	<0.00500	<0.00500	0.00546	0.00949
	02/01/12	196	0.568	3.68	131	952	<0.0100	<0.00500	0.0854	0.163	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.01220	<0.000200	<0.00500	0.01330	<0.00500	<0.00500	<0.00500	0.01170
	07/26/12	179	0.647	3.11	121	940	0.0121	<0.00500	0.0966	0.214	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00694	<0.000200	<0.00500	0.00568	<0.00500	<0.00500	0.00559	0.02330
	02/26/13	144	0.640	4.78	138	760	0.0134	<0.00500	0.1030	0.189	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.06350	<0.000200	<0.00500	0.05580	<0.00500	<0.00500	<0.00500	0.00877
	08/22/13	222	0.611	5.55	133	1,170	0.0319	<0.00500	0.0910	0.209	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.01740	<0.000200	<0.00500	0.00539	<0.00500	<0.00500	0.00577	<0.00500
	02/26/14	187	0.470	3.11	146	944	0.0236	<0.00500	0.0739	0.198	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00979	<0.000200	<0.00500	0.01280	<0.00500	<0.00500	0.00583	0.00770
	08/21/14	67.8	0.511	3.18	78.9	644	0.132	0.00816	0.1380	0.167	<0.00200	0.0152	<0.00500	<0.00500	<0.200	<0.00500	0.00938	<0.000200	<0.00500	0.00900	<0.00500	<0.00500	0.00548	0.01500
	02/25/15	190	0.71	2.3	110	790	0.051 J	0.00240	0.0990	0.18 J	<0.00070	<0.0014	<0.0023	<0.0053	0.058 J	<0.00024	0.00220 J	<0.000049	0.00110 J	<0.00490	<0.00740	<0.00280	0.00410 J	0.01500 J
	08/25/15	220	0.670	2.93	143	1,160	<0.0350	0.00263	0.0990	0.181 J	<0.00016	0.000822 J	0.000366 J	0.000593 J	<0.0141	<0.00024	0.00175 J	<0.000049	<0.00160	0.00104 J	<0.000380	<0.00031	0.00440 J	0.00418 J
	08/16/16	223	0.645	2.28	122	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-27	08/18/10	115	0.644	5.10	118	752	0.218	<0.00500	0.1000	0.152	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.05340	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.00544	0.04530
	02/25/11	144	0.595	<0.500	78.5	746	<0.0100	<0.00500	0.0985	0.139	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.03360	<0.000200	<0.00500	0.00769	<0.00500	<0.00500	0.00625	0.02940
	07/20/11	150	0.510	1.69	73.2	812	0.0378	<0.00500	0.1120	0.165	<0.00200	0.0353	<0.00500	<0.00500	0.393	<0.00500	0.01790	<0.000200	<0.00500	0.04150	<0.00500	<0.00500	0.00571	0.01210
	02/01/12	164	0.691	2.43	99.8	676	<0.0100	<0.00500	0.0902	0.126	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00556	<0.008000	<0.00500	0.00533	<0.00500	<0.00500	<0.00500	0.01170
	07/26/12	164	0.680	2.95	65.3	754	0.0155	<0.00500	0.1180	0.172	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00587	<0.000200	<0.00500	0.00737	<0.00500	<0.00500	<0.00500	0.01040
	02/26/13	199	0.647	2.77	70.7	756	<0.0100	<0.00500	0.1200	0.184	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.05860	<0.000200	0.00513	0.05930	<0.00500	<0.00500	<0.00500	<0.00500
	08/20/13	315	0.562	7.12	75.5	1,180	0.0440	<0.00500	0.1620	0.222	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.02390	<0.000200	<0.00500	0.01890	<0.00500	<0.00500	0.00899	0.00624
	02/27/14	298	0.415	8.00	89.3	1,150	<0.0100	<0.00500	0.1390	0.232	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.01340	<0.000200	<0.00500	0.02860	<0.00500	<0.00500	0.00680	0.01820
	08/21/14	256	0.540	4.99	85.1	1,100	0.210	<0.00500	0.1260	0.160	<0.00200	0.0447	<0.00500	<0.00500	0.278	<0.00500	0.06360	<0.000200	<0.00500	0.05920	<0.00500	<0.00500	0.00648	<0.00590
	02/27/15	170	1.0	3.8	96	790	<0.035	0.00330	0.0840	0.30	<0.00070	0.0038 J	<0.0023	<0.0053	<0.014	<0.00024	<0.00120	<0.000049	0.00290 J	<0.00490	0.00800 J	<0.00280	0.00980 J	<0.00590
	08/26/15	139	2.27	2.94	95.2	690	<0.0350	0.00353	0.0571	0.264	<0.00016	0.00256	<0.000260	0.000627 J	<0.0141	<0.00024	0.00206 J	<0.000049	0.01390	0.00405	0.00318	<0.00031	0.00550 J	<0.00256
	08/18/16	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
MW-28	08/24/10	71.2	1.66	1.70	60.3	440	0.1290	<0.00500	0.0846	0.153	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
	02/23/11	106	1.57	<0.500	67.4	540	<0.0100	<0.00500	0.0923	0.147	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01900
	07/14/11	106	1.28	2.40	67.8	732	<0.0100	<0.00500	0.1030	0.172	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00658	<0.000200	<0.00500	0.00696	<0.00500	<0.00500	<0.00500	0.01130
	01/30/12	80.6	1.68	2.53	81.1	572	<0.0100	<0.00500	0.0746	0.152	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00812
	07/24/12	74.9	1.79	2.33	81.6	500	<0.0100	<0.00500	0.0830	0.204	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.04660
	02/19/13	65.5	1.61	2.57	88.4	468	<0.0100	<0.00500	0.0883	0.174	<0.00200	<0.00500	<0.00500	0.20300	<0.200	<0.00500	0.02750	<0.000200	0.01000	<0.00500	<0.00500	<0.00500	<0.00500	0.01680
	08/20/13	70.4	1.77	2.42	77.4	480	< 0.0100	<0.00500	0.0790	0.168	<0.00200	<0.00500	<0.00500	0.01010	<0.200	<0.00500	0.00874	<0.000200	<0.00500	0.00561	<0.00500	<0.00500	<0.00500	0.00674
	02/24/14	71.7	1.30	2.60	74.2	480	< 0.0100	<0.00500	0.0836	0.180	<0.00200	<0.00500	<0.00500	0.00514	<0.200	<0.00500	0.00509	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.03350
	08/19/14	70.0	1.65	2.31	78.2	512	0.9470	<0.00500	0.1060	0.205	<0.00200	0.02380	<0.00500	0.03960	0.760	<0.00500	0.01280	<0.000200	<0.00500	0.01290	<0.00500	<0.00500	<0.00500	0.01700
	02/23/15	70.0	1.60	2.80	72.00	500	<0.035	0.00400	0.0900	0.170 J	<0.00070	<0.00140	<0.00230	0.00550 J	<0.014	<0.00024	<0.0012	<0.000049	0.00180 J	<0.00490	<0.00740	<0.00280	0.00250 J	0.01700 J
	08/27/15	142	3.07	3.08	143	549	<0.0350	0.00433	0.0849	0.171	<0.00016	<0.00054	<0.00026	0.00598	0.0385 J	<0.00024	0.000680 J	<0.000049	0.00186 J	<0.00035	0.00220	<0.00031	0.00238 J	0.00393 J
	03/07/16	73.1	1.62	3.31	70.8	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
	08/15/16	73.2	1.37	3.08	70.6	612	0.00413 JB	0.00448	0.0819	0.167	<0.000160	0.00104 JB	<0.000260	0.0086	0.0226 JB	<0.000240	0.000376 JB	<0.0000490	0.00221 J	0.000525 JB	0.00268	<0.000310	0.00266 J	0.0054 J

Table 3. Inorganic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	Chloride (mg/L)	Fluoride (mg/L)	Nitrate-Nitrite (as N, mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Manganese (mg/L)	Total Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Uranium (mg/L)	Zinc (mg/L)
NM WQCC Groundwater Human Health Standards:		**250**	**1.6**	**10**	**600**	**1,000**	**5.0**	**0.1**	**1.0**	**0.75**	**0.01**	**0.05**	**0.05**	**1.0**	**1.0**	**0.05**	**0.20**	**0.002**	**1.0**	**0.2**	**0.05**	**0.05**	**0.03**	**10.0**
MW-29	08/24/10	456	0.753	2.18	167	726	0.0261	<0.00500	0.0644	0.189	<0.00200	0.0317	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.03750
(duplicate)	08/24/10	132	0.741	2.15	100	742	<0.0100	<0.00500	0.0652	0.186	<0.00200	0.0321	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.03010
	02/28/11	119	0.819	3.05	101	670	<0.0100	<0.00500	0.0630	0.195	<0.00200	0.0694	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.02670
	07/14/11	135	0.707	2.61	71.6	798	<0.0100	<0.00500	0.0652	0.189	<0.00200	0.162	<0.00500	<0.00500	<0.200	<0.00500	0.00532	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.02400
	01/30/12	152	0.769	3.22	96.3	898	<0.0100	<0.00500	0.0580	0.181	<0.00200	0.106	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01620
	07/24/12	250	0.828	4.08	90.1	1,120	<0.0100	<0.00500	0.0978	0.249	<0.00200	0.261	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01320
	02/26/13	159	0.788	2.90	82.4	722	<0.0100	<0.00500	0.0857	0.182	<0.00200	0.069	<0.00500	<0.00500	<0.200	<0.00500	0.04710	<0.000200	<0.00500	0.03340	<0.00500	<0.00500	<0.00500	<0.00500
	08/20/13	152	0.934	2.95	96.2	654	< 0.0100	<0.00500	0.0738	0.187	<0.00200	0.117	<0.00500	<0.00500	<0.200	<0.00500	0.01590	<0.000200	<0.00500	0.00667	<0.00500	<0.00500	<0.00500	0.01150
	02/27/14	141	0.811	3.22	74.4	660	< 0.0100	<0.00500	0.0725	0.171	<0.00200	0.250	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00739
(duplicate)	02/27/14	141	0.819	3.37	74.3	690	< 0.0100	<0.00500	0.0764	0.183	<0.00200	0.261	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00902
	08/20/14	177	0.809	3.44	72.9	826	0.1880	<0.00500	0.1060	0.134	<0.00200	0.331	<0.00500	<0.00500	0.697	<0.00500	0.07540	<0.000200	0.00594	0.07770	<0.00500	<0.00500	<0.00500	0.01300
	02/25/15	250	0.950	5.60	90.0	1,000	<0.0350	0.00200	0.1300	0.260	<0.00070	0.240	<0.00230	<0.00530	<0.014	<0.00024	<0.00120	<0.000049	0.00120 J	<0.00490	<0.00740	<0.00280	0.00620 J	0.01300 J
	08/27/15	247	0.573	6.77	81.8	1,220	<0.0350	0.00246	0.0884	0.238	<0.00016	0.130	<0.00026	0.000784 J	<0.0141	<0.00024	0.00153 J	<0.000049	0.00111 J	0.000629 J	0.00169 J	<0.00031	0.00641 J	0.00333 J
	03/08/16	- -	- -	- -	- -	- -	0.00829 JB	0.00465	0.0757	0.165	<0.000160	0.00111 J	<0.000260	0.000558 JB	<0.0150	<0.000240	0.000652 JB	<0.0000490	0.00482 J	0.000690 JB	0.00190 J	<0.000310	0.00213 J	<0.00256
	08/17/16	171	0.693	4.61	81.5	349	<0.00200	0.00253	0.0851	0.204	<0.000160	0.00897	<0.000260	0.000863 JB	<0.0150	<0.000240	0.00135 JB	<0.0000490	0.00204 J	0.00119 JB	0.0014 J	<0.000310	0.0038 J	0.0033 JB
MW-30	06/21/13	51.2	1.87	3.51	96.7	426	0.0436	0.00588	0.0424	0.164	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	0.00913	<0.00500	0.00554	<0.00500	<0.00500	<0.00500
	08/20/13	63.7	1.59	2.85	87.0	438	< 0.0100	<0.00500	0.0761	0.159	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.05890	<0.000200	<0.00500	0.02630	<0.00500	<0.00500	<0.00500	<0.00500
	02/27/14	64.0	1.07	2.96	90.0	476	0.0201	<0.00500	0.0672	0.180	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.06440	<0.000200	0.00588	0.05160	<0.00500	<0.00500	<0.00500	<0.00500
	08/22/14	61.1	1.45	2.75	84.5	444	0.1320	<0.00500	0.0736	<0.0200	<0.00200	0.0137	<0.00500	<0.00500	<0.200	<0.00500	0.14800	<0.000200	0.00597	0.04850	<0.00500	<0.00500	<0.00500	<0.00590
	02/25/15	75.0	1.40	3.10	81.0	460	0.0770 J	0.00430	0.0730	0.16 J	<0.00070	<0.0014	<0.0023	<0.0053	<0.014	<0.00024	0.00660 J	<0.000049	0.00270 J	<0.00490	<0.00740	<0.00280	0.0018 J	<0.00590
	08/28/15	83.6	1.61	3.97	86.2	525	<0.0350	0.00478	0.0757	0.163	<0.00016	<0.000540	<0.000260	0.000922 J	<0.0141	<0.00024	0.00315 J	<0.000049	0.00248 J	0.00109 J	0.00177 J	<0.00031	0.00203 J	<0.00256
	03/08/16	70.6	1.30	3.53	83.0	450	0.00402 JB	0.00375	0.0711	0.152	<0.000160	0.00320	<0.000260	0.000933 JB	<0.0150	<0.000240	0.000911 JB	<0.0000490	0.00219 J	0.000955 JB	0.00253	<0.000310	0.00187 J	<0.00256
(duplicate)	03/08/16	70.4	1.30	3.54	83.0	464	0.00986 JB	0.00457	0.071	0.154	<0.000160	0.00148 J	<0.000260	0.00123 JB	<0.0150	0.000299 JB	0.000664 JB	<0.0000490	0.00479 J	0.000797 JB	0.00175 J	0.000842 J	0.00197 J	0.00268 JB
	08/16/16	71.6	1.29	3.24	87.5	534	0.00299 JB	0.00476	0.0734	0.175	<0.000160	0.0011 JB	<0.000260	<0.000520	<0.0150	<0.000240	0.00222 JB	<0.0000490	0.00263 J	0.00047 JB	0.00198 J	<0.000310	0.00223 J	<0.00256
(duplicate)	08/16/16	75.5	1.29	3.22	87.7	491	0.0189 JB	0.00479	0.0733	0.175	<0.000160	0.0011 JB	<0.000260	0.00371 JB	<0.0150	<0.000240	0.00228 JB	<0.0000490	0.00252 J	0.000495 JB	0.0021	<0.000310	0.00224 J	<0.00256
RW-1	06/19/09	34.8	1.21	- -	70.8	398	<0.0100	0.01000	0.160	0.161	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.03800	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	- -	<0.00500
	02/02/10	34.2	0.913	1.52	66.0	388	<0.0200	0.00857	0.190	0.166	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.04670	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
	08/19/10	27.8	0.991	1.42	72.3	380	0.0202	0.01040	0.162	0.154	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00854
	03/01/11	28.9	1.03	1.74	74.3	380	<0.0100	0.01210	0.148	0.153	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00933	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
	07/20/11	26.4	0.883	1.36	72.5	484	<0.0100	0.01080	0.158	0.156	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00526
	02/02/12	29.6	1.11	1.44	79.9	384	<0.0100	0.01060	0.139	0.165	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00771	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00764
	07/27/12	27.3	1.18	<2.00	68.9	344	0.0532	0.01030	0.163	0.177	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.01820	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00801
	02/27/13	28.0	1.09	<2.00	80.2	378	<0.0100	0.01030	0.132	0.159	<0.00200	<0.00500	<0.00500	<0.00500	0.655	<0.00500	0.00656	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
	08/21/13	32.3	1.28	1.50	86.9	392	< 0.0100	0.01010	0.153	0.175	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.02700	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
	02/27/14	29.4	1.07	1.46	76.9	402	< 0.0100	0.00608	0.155	0.167	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.18600	<0.000200	<0.00500	0.01560	<0.00500	<0.00500	<0.00500	0.00581
	08/21/14	25.6	1.21	1.29	76.0	368	0.0156	0.00919	0.145	0.102	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00804	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00680
	02/25/15	26.0	1.20	1.60	74.0	370	<0.0350	0.01100	0.150	0.190 J	<0.00070	<0.0014	<0.0023	<0.0053	<0.014	0.00042 J	<0.00120	<0.000049	0.00250 J	<0.00490	<0.00740	<0.00280	0.00180 J	0.00680 J
	08/27/15	28.0	1.04	1.74	76.8	407	<0.0350	0.00976	0.149	0.173	<0.00016	<0.000540	<0.000260	<0.000520	<0.0141	<0.00024	0.000376 J	<0.000049	0.00240 J	<0.000350	0.00289	<0.00031	0.00173 J	<0.00256

Table 3. Inorganic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	Chloride (mg/L)	Fluoride (mg/L)	Nitrate-Nitrite (as N, mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Manganese (mg/L)	Total Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Uranium (mg/L)	Zinc (mg/L)
NM WQCC Groundwater Human Health Standards:		**250**	**1.6**	**10**	**600**	**1,000**	**5.0**	**0.1**	**1.0**	**0.75**	**0.01**	**0.05**	**0.05**	**1.0**	**1.0**	**0.05**	**0.20**	**0.002**	**1.0**	**0.2**	**0.05**	**0.05**	**0.03**	**10.0**
North Well	06/18/09	140	0.933	2.72	80.6	664	<0.0100	0.00536	0.0997	0.151	<0.00200	0.0104	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	- -	<0.00500
	01/14/10	143	0.793	2.90	74.2	638	<0.0100	<0.00500	0.1070	0.172	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.00134	0.00920
	08/24/10	127	0.932	1.81	80.4	594	<0.0100	0.00552	0.1000	0.147	<0.00200	<0.00500	<0.00500	0.00856	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	0.0161	<0.00500	<0.00500	<0.00500	<0.00500
	03/03/11	137	0.932	2.76	75.2	804	<0.0100	0.00503	0.0968	0.159	<0.00200	0.0199	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.06950
	07/20/11	124	0.803	2.07	76.5	628	<0.0100	<0.00500	0.1060	0.142	<0.00200	0.0140	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
	02/02/12	149	0.977	2.54	82.1	656	0.0126	<0.00500	0.0944	0.132	<0.00200	0.0145	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01780
	07/30/12	121	0.986	2.63	72.7	528	<0.0100	0.00523	0.1060	0.159	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00873
	02/19/13	105	1.020	2.54	83.3	496	<0.0100	0.00693	0.0998	0.162	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	0.00537	<0.00500	<0.00500	<0.00500	0.01190
	08/22/14	57.3	0.462	2.73	37.6	532	0.0170	0.00530	0.1060	<0.0200	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00315
	12/17/14	110	0.910	3.00	69.0	--	<0.0100	0.00579	0.0985	0.121	<0.00100	0.00101	<0.00100	0.00108	0.0180	<0.00100	<0.00100	<0.000200	0.00346	<0.00100	0.00359	<0.00100	0.00179	0.01500
	03/09/15	11.0	0.098	2.70	7.30	520	<0.0350	0.00550	0.1100	0.150	<0.00070	<0.0014	<0.0023	0.012 J	<0.014	0.00062 J	<0.00120	<0.000049	0.00320 J	<0.00490	0.00970 J	<0.00280	0.00160 J	0.01700 J
	05/19/15	110	0.880	3.20	73.0	550	<0.0350	0.00600	0.1100	0.14 J	<0.00070	0.0018 J	<0.0023	0.015 J	<0.014	0.00074 J	<0.00120	<0.000049	0.00420 J	<0.00490	0.00330	<0.00280	0.00180 J	0.01700 J
	08/28/15	193	1.55	4.34	127	593	<0.0350	0.00551	0.1030	0.155	<0.00016	0.000676 J	<0.00026	0.00121 J	<0.0141	<0.00024	0.000878 J	<0.000049	0.00306 J	<0.00035	0.00332	<0.00031	0.00156 J	<0.00256
	12/17/15	121	0.982	3.46	76.7	588	<0.0350	0.00572	0.1040	0.155 J	<0.00016	0.00103 J	<0.00026	0.00216 J	0.0158 J	<0.00024	0.000476 J	<0.000049	<0.00160	0.000388 J	0.00342	<0.00031	0.00160 J	0.00427 J
	03/10/16	136	0.939	3.34	74.1	575	0.00383 J	0.00557	0.108	0.138	<0.00016	0.00106 J	<0.00026	0.00183 JB	0.0200 J	<0.00024	0.000748 J	<0.0000490	0.00307 JB	0.000364 JB	0.00342	<0.00031	0.00161 J	0.00420 JB
	05/25/16	128	0.941	3.03	75.1	634	<0.00200	0.00451	0.104	0.166	<0.00016	<0.000540	<0.00026	0.0141	<0.0150	<0.00024	0.00281 J	<0.0000490	0.00272 J	0.000909 J	0.00365	<0.00031	0.000159 J	0.0101 J
	08/18/16	129	0.872	5.76	70.9	626	0.00295 JB	0.00548	0.111	0.157	<0.00016	0.00139 JB	<0.00026	0.00146 JB	<0.0150	<0.00024	0.00101 JB	0.0000503 JB	0.00293 J	0.00103 JB	0.00367	<0.00031	0.00176 J	0.00285 JB
	12/08/16	156	0.942	3.23	74.3	676	0.00412 JB	0.00544	0.122	0.127	<0.00016	0.00108 J	<0.00026	0.00236 J	<0.0150	<0.00024	0.000506 JB	<0.0000490	0.00281 J	<0.00035	0.00333	<0.00031	0.00177 J	0.00374 J
South Well	06/22/09	497	0.665	3.02	106	1,450	<0.0100	<0.00500	0.154	0.189	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	- -	<0.00500
	01/14/10	498	0.686	3.27	113	1,520	0.0176	<0.00500	0.138	0.229	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.02240	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.00236	0.02070
	08/24/10	477	0.651	2.18	101	1,760	<0.0100	<0.00500	0.172	0.186	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00576	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.03290
	03/03/11	549	0.647	3.24	122	1,840	<0.0100	<0.00500	0.147	0.261	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.02260	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500
	07/20/11	420	0.687	2.48	103	1,600	<0.0100	<0.00500	0.157	0.195	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00777
	02/12/12	368	0.756	3.02	89.0	1,210	<0.0100	<0.00500	0.117	0.165	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.04010
	07/30/12	135	1.01	2.53	73.3	582	<0.0100	<0.00500	0.103	0.160	<0.00200	0.0111	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01720
	02/19/13	359	0.743	2.88	99.2	1,170	--	0.00576	0.149	0.197	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01550
	02/28/14	352	0.575	0.66	99.2	1,210	<0.0100	<0.00500	0.131	0.195	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00571	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01590
	08/22/14	435	0.720	3.00	100	1,480	<0.0100	<0.00500	0.136	0.144	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.00670	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.02140
(duplicate)	08/22/14	437	0.724	3.00	107	1,480	0.0689	<0.00500	0.145	<0.020	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	0.01030	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01630
	12/17/14	390	0.63	3.20	91	--	<0.0100	0.00431	0.125	0.159	<0.00100	0.00178	<0.00100	0.00128	0.0277	<0.00100	0.00422	<0.000200	0.00242	<0.00100	0.00387	<0.00100	0.00227	0.01510
(duplicate)	12/17/14	390	0.63	3.20	90	--	<0.0100	0.00422	0.126	0.162	<0.00100	0.00179	<0.00100	0.00136	0.0226	<0.00100	0.00409	<0.000200	0.00203	<0.00100	0.00359	<0.00100	0.00217	0.04900
	03/09/15	340	0.82	2.70	99	1,100	<0.035	0.00400	0.140	0.200	<0.00070	0.0015 J	<0.00230	0.032	<0.014	0.00310	0.00460 J	<0.000049	0.00200 J	<0.00490	0.01200 J	<0.00280	0.00210 J	0.04900 J
(duplicate)	03/09/15	340	0.82	650	98	1,100	0.0370 J	0.00420	0.140	0.200	<0.00070	<0.0014	<0.00230	0.019 J	<0.014	0.00260	0.00300 J	<0.000049	0.00210 J	<0.00490	0.01500 J	<0.00280	0.00210 J	0.02500 J
	05/19/15	330	0.76	3.20	92	1,100	<0.0350	0.00230	0.140	0.18 J	<0.00070	<0.0014	<0.00230	<0.0053	<0.014	<0.00024	0.00880 J	<0.000049	0.00220 J	<0.00490	<0.0028	<0.00280	0.00210 J	<0.00590
(duplicate)	05/19/15	340	0.76	3.10	95	1,000	<0.035	0.00240	0.140	0.18 J	<0.00070	<0.0014	<0.00230	<0.0053	<0.014	<0.00024	0.00810 J	<0.000049	0.00230 J	<0.00490	0.00320	<0.00280	0.00210 J	<0.00590
	08/28/15	426	0.810	3.48	107	1,440	<0.0350	0.00436	0.137	0.194	<0.00070	0.00156 J	<0.00230	<0.00530	0.0168 J	0.000477 J	0.00776 J	<0.000049	0.00204 J	<0.00490	0.00360	<0.00280	0.00214 J	0.00662 J
(duplicate)	08/28/15	382	0.734	3.50	95.9	1,320	<0.0350	0.00430	0.133	0.197	<0.00016	0.00127 J	<0.00026	0.00376 J	<0.0141	<0.00024	0.00654	0.0000599 J	0.00199 J	<0.000350	<0.00328	<0.00031	0.00205 J	0.00638 J
	12/17/15	400	0.751	3.35	115	1,400	<0.0350	0.00426	0.138	0.235	<0.00016	0.00205	<0.00026	0.00257 J	<0.0141	<0.00024	0.00564	<0.000049	<0.00160	0.000645 J	0.00334	<0.00031	0.00238 J	0.00388 J
(duplicate)	12/17/15	402	0.752	3.47	114	1,360	<0.0350	0.00425	0.136	0.193 J	<0.00016	0.00160	<0.00026	0.00250 J	<0.0141	<0.00024	0.00546	<0.000049	<0.00160	0.000442 J	0.00343	<0.00031	0.00238 J	0.00430 J
	03/10/16	354	0.760	3.53	103	1,100	0.00624 J	0.00425	0.118	0.211	<0.00016	0.00135 J	<0.00026	0.00864	<0.0150	0.000256 J	0.00332 JB	<0.000049	0.00204 B	0.000524 JB	0.00354	<0.00031	0.00230 J	0.0119 JB
	05/25/16	361	0.743	3.11	101	1,620	<0.00200	0.00433	0.124	0.214	<0.00016	0.00139 J	<0.00026	0.00384 J	<0.0150	<0.00024	0.00551	<0.000049	0.00196 J	<0.000350	0.00374	<0.00031	0.00249 J	0.00351 J
(duplicate)	05/25/16	377	0.741	3.11	102	1,440	<0.00200	0.00459	0.125	0.224	<0.00016	0.00196 J	<0.00026	0.00445 J	<0.0150	<0.00024	0.00535	<0.000049	0.00194 J	<0.000350	0.00343	<0.00031	0.00247 J	0.00394 J
	08/18/16	381	0.692	3.18	98.2	1,420	<0.1	0.00419	0.134	0.224	<0.00016	0.00138 J	<0.00026	0.00444 JB	<0.0150	<0.00024	0.0025 J	0.0000764 JB	0.00188 J	0.00106 JB	0.00326	<0.00031	0.00257 J	0.00833 JB
(duplicate)	08/18/16	385	0.695	3.18	97.6	1,390	0.00377 JB	0.00370	0.137	0.233	<0.00016	0.00165 J	<0.00026	0.00485 JB	<0.0150	<0.00024	0.0027 J	0.0000788 JB	0.00201 J	0.00128 JB	0.00318	<0.00031	0.00262 J	0.00936 JB
	12/08/16	419	0.772	3.27	105	1,300	0.00439 JB	0.00310	0.120	0.188	<0.00016	0.00059 J	<0.00026	0.00192 J	<0.0150	<0.00024	0.00796	<0.000049	0.00181 J	<0.000350	0.00373	<0.00031	0.00257 J	0.00418 J
(duplicate)	12/08/16	425	0.777	3.27	106	1,310	0.00364 JB	0.00313	0.120	0.194	<0.00016	0.000601 J	<0.00026	0.00215 J	<0.0150	0.000317	0.00673	<0.000049	0.00184 J	<0.000350	0.00307	<0.00031	0.00253 J	0.00420 J

Table 3. Inorganic Constituent Concentrations in Groundwater

HollyFrontier Navajo Refining LLC, AP-110, Lovington, New Mexico

Monitor Well	Sample Date	Chloride (mg/L)	Fluoride (mg/L)	Nitrate-Nitrite (as N, mg/L)	Sulfate (mg/L)	Total Dissolved Solids (mg/L)	Aluminum (mg/L)	Arsenic (mg/L)	Barium (mg/L)	Boron (mg/L)	Cadmium (mg/L)	Chromium (mg/L)	Cobalt (mg/L)	Copper (mg/L)	Iron (mg/L)	Lead (mg/L)	Manganese (mg/L)	Total Mercury (mg/L)	Molybdenum (mg/L)	Nickel (mg/L)	Selenium (mg/L)	Silver (mg/L)	Uranium (mg/L)	Zinc (mg/L)
NM WQCC Groundwater Human Health Standards:		**250**	**1.6**	**10**	**600**	**1,000**	**5.0**	**0.1**	**1.0**	**0.75**	**0.01**	**0.05**	**0.05**	**1.0**	**1.0**	**0.05**	**0.20**	**0.002**	**1.0**	**0.2**	**0.05**	**0.05**	**0.03**	**10.0**
East Well	06/18/09	107	0.980	2.59	84.0	554	0.0131	<0.00500	0.0820	0.143	<0.00200	<0.00500	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	- -	0.02910
	01/14/10	138	0.991	2.70	72.7	676	<0.0100	<0.00500	0.0941	0.154	<0.00200	0.0119	<0.00500	0.00953	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	0.00111	0.01460
	08/25/10	106	1.00	0.523	74.5	522	<0.0100	<0.00500	0.0873	0.136	<0.00200	0.0145	<0.00500	0.00745	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.03470
	03/03/11	135	0.905	2.68	75.6	644	<0.0100	<0.00500	0.0970	0.152	<0.00200	0.0189	<0.00500	<0.00500	<0.200	0.00662	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.00936
	07/20/11	124	0.810	1.83	73.8	596	<0.0100	<0.00500	0.1040	0.142	<0.00200	0.0200	<0.00500	<0.00500	<0.200	0.01160	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.09370
	02/02/12	150	0.967	2.56	81.4	664	0.0150	<0.00500	0.0993	0.145	<0.00200	0.0166	<0.00500	<0.00500	<0.200	0.00988	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01660
	07/30/12	144	0.962	2.40	80.9	636	<0.0100	<0.00500	0.0922	0.136	<0.00200	0.0157	<0.00500	0.00774	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01660
	02/28/14	138	0.899	0.564	80.6	658	0.0104	<0.00500	0.1160	0.158	<0.00200	0.0139	<0.00500	<0.00500	<0.200	<0.00500	<0.00500	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.03170
	08/22/14	124	0.914	2.71	78.5	614	<0.0100	<0.00500	0.1030	<0.0200	<0.00200	0.0119	<0.00500	<0.00500	<0.200	<0.00500	0.008120	<0.000200	<0.00500	<0.00500	<0.00500	<0.00500	<0.00500	0.01560
	12/17/14	120	0.900	2.70	73.0	--	<0.0100	0.00436	0.0905	0.120	<0.00100	0.0112	<0.00100	<0.00100	0.143	<0.00100	0.004300	<0.000200	0.00241	<0.00100	0.00395	<0.00100	0.00181	0.01470
	03/09/15	120	1.10	2.60	81.0	570	<0.0350	0.00460	0.1000	0.150	<0.00070	0.0120	<0.00230	0.06800	<0.014	0.00120 J	0.00210 J	<0.000049	0.00230 J	<0.00490	0.01000 J	<0.00280	0.00180 J	0.08600
	05/19/15	120	0.900	2.80	78.0	560	<0.0350	0.00500	0.1000	0.140 J	<0.00070	0.0120	<0.00230	<0.00530	<0.014	<0.00024	0.00160 J	<0.000049	0.00280 J	<0.00490	0.00370	<0.00280	0.00190 J	0.01300 J
	08/28/15	206	1.75	3.00	145	603	<0.0350	0.00445	0.0981	0.149	<0.00070	0.00866 J	<0.00230	<0.00530	0.0248 J	0.000241 J	0.012900	<0.000049	0.00236 J	<0.00490	0.00388	<0.00280	0.00174 J	0.02840 J
	12/17/15	114	1.03	3.01	80.9	621	0.0668 J	0.00507	0.0997	0.167 J	<0.00016	0.00866	<0.00260	0.00143 J	<0.0141	<0.00024	0.00217 J	<0.000049	<0.00160	0.000365	0.00387	<0.00031	0.00188 J	0.01010 J
	03/10/16	112	1.01	3.0	78.9	562	0.00534 J	0.00454	0.0926	0.143	<0.00016	0.00835	<0.00260	0.000987 JB	<0.0150	<0.00024	0.00274 JB	<0.000049	0.00246 JB	0.000662 JB	0.00384	<0.00031	0.00166 J	0.026 B
	05/25/16	114	1.01	2.7	80.0	608	<0.00200	0.00483	0.0906	0.154	<0.00016	0.00902	<0.00260	0.0315	<0.0150	0.00141 J	0.00181 JB	<0.000049	0.00217 J	<0.00035	0.00376	<0.00031	0.00181 J	0.0399
	08/18/16	104	0.915	3.12	74.4	555	0.00258 JB	0.00454	0.0939	0.162	<0.00016	0.00451 B	<0.00260	0.00196 JB	0.0337 J	<0.00024	0.00346 J	<0.000049	0.00288 J	0.00121 JB	0.00386	<0.00031	0.00194 J	0.0291 B
	12/08/16	104	1.02	2.88	79.9	582	0.00471 JB	0.00464	0.0858	0.122	<0.00016	0.00702	<0.00260	0.00390 J	<0.0150	<0.00024	0.00178 J	<0.000049	0.00254 J	<0.00035	0.00384	<0.00031	0.00172 J	0.0269

Notes:

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

mg/L = milligrams per liter

< = Not reported above laboratory reporting limit

-- = Not Analyzed

(1)= Not analyzed due to insufficient water volume

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

B = same analyte was detected in the associated laboratory blank or equipment blank; sample concentration is within 5 times the blank concentration

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

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

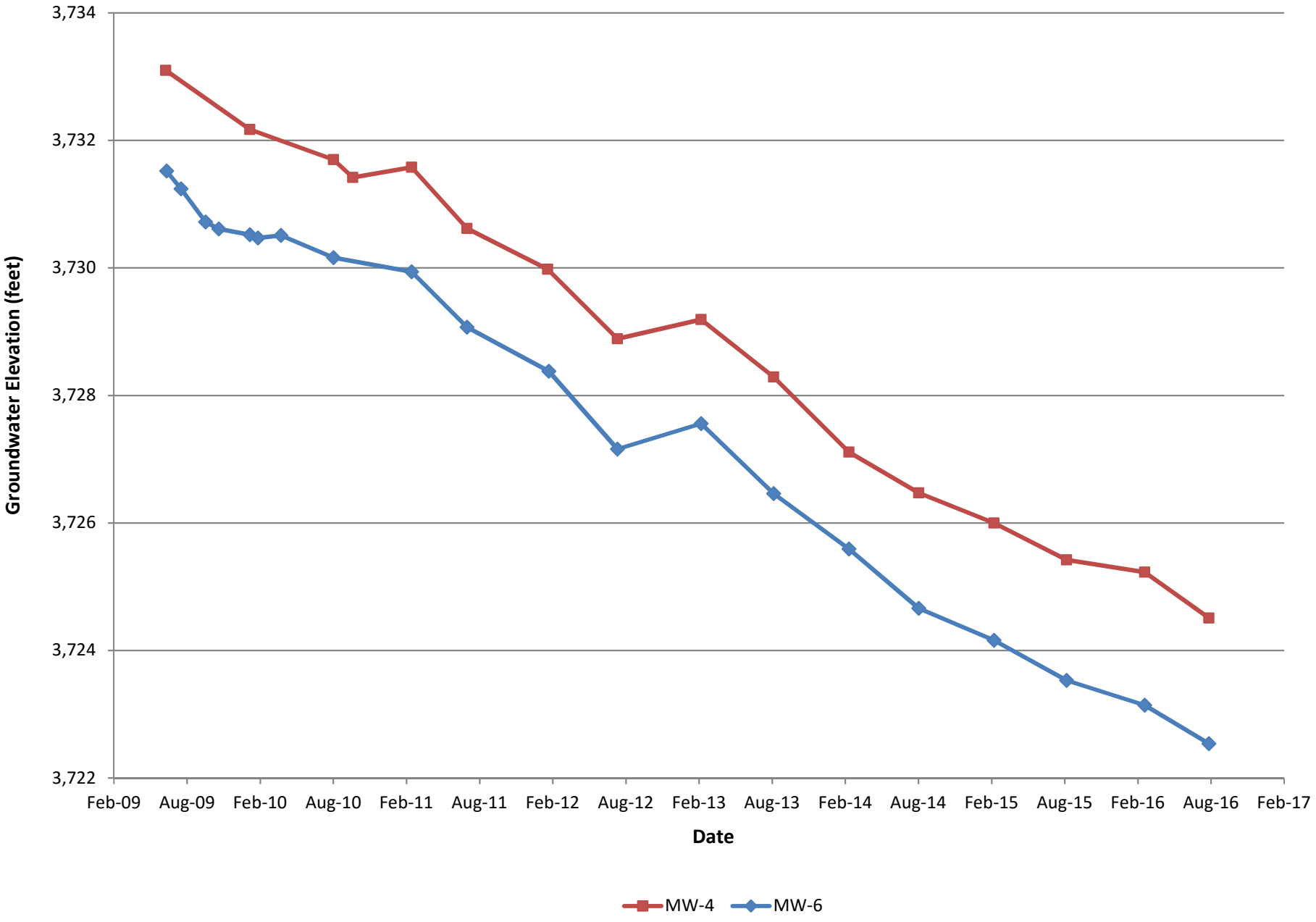
December 2014 analyses completed by Hall Environmental Analysis Laboratory in Albuquerque, New Mexico

February 2015 to August 2015 analyses completed by ESC Lab Sciences in Mount Juliet, Tennessee

APPENDIX A

PLOT OF GROUNDWATER ELEVATIONS OVER TIME

APPENDIX A - GROUNDWATER ELEVATIONS OVER TIME
HollyFrontier Navajo Refining LLC
AP-110, Lovington, New Mexico



APPENDIX B

LABORATORY ANALYTICAL REPORTS

ANALYTICAL REPORT

March 21, 2016

TRC Solutions - Austin, TX

Sample Delivery Group:	L822693
Samples Received:	03/10/2016
Project Number:	247359.0000.0000
Description:	Lovington Lea Refinery

Report To: Julie Speer
505 E. Huntland Drive, Suite 250
Austin, TX 78752

Entire Report Reviewed By:

Chris McCord
Technical Service Representative

MW-28 L822693-01 GW

Collected by: JA / AE
Collected date/time: 03/07/16 14:55
Received date/time: 03/10/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG857120	1	03/18/16 15:55	03/18/16 15:55	MCG
Wet Chemistry by Method 353.2	WG856707	1	03/17/16 02:23	03/17/16 02:23	ASK
Wet Chemistry by Method 9056A	WG855338	1	03/11/16 04:57	03/11/16 04:57	DJD

MW-15 L822693-02 GW

Collected by: JA / AE
Collected date/time: 03/07/16 16:30
Received date/time: 03/10/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG855632	1	03/13/16 04:08	03/13/16 05:39	JM
Mercury by Method 7470A	WG856130	1	03/14/16 10:15	03/14/16 13:19	BRJ
Metals (ICPMS) by Method 6020	WG855745	1	03/11/16 15:11	03/15/16 02:09	RDS
Metals (ICPMS) by Method 6020	WG856722	1	03/16/16 09:40	03/16/16 15:10	VSS
Wet Chemistry by Method 2320 B-2011	WG857120	1	03/18/16 16:17	03/18/16 16:17	MCG
Wet Chemistry by Method 353.2	WG856707	1	03/17/16 02:25	03/17/16 02:25	ASK
Wet Chemistry by Method 9056A	WG855338	1	03/11/16 05:13	03/11/16 05:13	DJD
Wet Chemistry by Method 9056A	WG855338	20	03/11/16 05:44	03/11/16 05:44	DJD

MW-2 L822693-03 GW

Collected by: JA / AE
Collected date/time: 03/07/16 17:25
Received date/time: 03/10/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi Volatile Organic Compounds (GC/MS) by Method 8270 C	WG856165	1	03/13/16 17:17	03/14/16 17:11	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG855836	1	03/14/16 15:28	03/14/16 15:28	JAH

MW-13 L822693-04 GW

Collected by: JA / AE
Collected date/time: 03/08/16 08:57
Received date/time: 03/10/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG855632	1	03/13/16 04:08	03/13/16 05:39	JM
Mercury by Method 7470A	WG856130	1	03/14/16 10:15	03/14/16 13:22	BRJ
Metals (ICPMS) by Method 6020	WG855745	1	03/11/16 15:11	03/15/16 02:13	RDS
Metals (ICPMS) by Method 6020	WG856722	1	03/16/16 09:40	03/16/16 15:29	VSS
Semi Volatile Organic Compounds (GC/MS) by Method 8270 C	WG856165	1	03/13/16 17:17	03/14/16 17:34	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG855836	1	03/14/16 19:54	03/14/16 19:54	JAH
Wet Chemistry by Method 353.2	WG856707	1	03/17/16 02:26	03/17/16 02:26	ASK
Wet Chemistry by Method 9056A	WG855551	1	03/11/16 16:35	03/11/16 16:35	CM
Wet Chemistry by Method 9056A	WG855551	20	03/11/16 18:22	03/11/16 18:22	CM

MW-27 L822693-05 GW

Collected by: JA / AE
Collected date/time: 03/08/16 10:08
Received date/time: 03/10/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG855836	1	03/14/16 20:12	03/14/16 20:12	JAH

MW-8 L822693-06 GW

Collected by: JA / AE
Collected date/time: 03/08/16 11:23
Received date/time: 03/10/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG855632	1	03/13/16 04:08	03/13/16 05:39	JM
Volatile Organic Compounds (GC/MS) by Method 8260B	WG855836	1	03/14/16 20:30	03/14/16 20:30	JAH
Wet Chemistry by Method 353.2	WG856707	1	03/17/16 02:27	03/17/16 02:27	ASK

MW-8 L822693-06 GW

Collected by: JA / AE
Collected date/time: 03/08/16 11:23
Received date/time: 03/10/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 9056A	WG855551	1	03/11/16 16:50	03/11/16 16:50	CM
Wet Chemistry by Method 9056A	WG855551	20	03/11/16 18:38	03/11/16 18:38	CM

MW-19 L822693-07 GW

Collected by: JA / AE
Collected date/time: 03/08/16 13:20
Received date/time: 03/10/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG855632	1	03/13/16 04:08	03/13/16 05:39	JM
Wet Chemistry by Method 2320 B-2011	WG857120	1	03/18/16 16:30	03/18/16 16:30	MCG
Wet Chemistry by Method 353.2	WG856707	1	03/17/16 02:28	03/17/16 02:28	ASK
Wet Chemistry by Method 9056A	WG855551	1	03/11/16 17:06	03/11/16 17:06	CM
Wet Chemistry by Method 9056A	WG855551	20	03/11/16 18:53	03/11/16 18:53	CM

MW-3 L822693-08 GW

Collected by: JA / AE
Collected date/time: 03/08/16 14:12
Received date/time: 03/10/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 353.2	WG856707	1	03/17/16 02:29	03/17/16 02:29	ASK
Wet Chemistry by Method 9056A	WG855551	1	03/11/16 17:52	03/11/16 17:52	CM

MW-17R L822693-09 GW

Collected by: JA / AE
Collected date/time: 03/08/16 15:20
Received date/time: 03/10/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG855633	1	03/14/16 03:11	03/14/16 03:37	JM
Mercury by Method 7470A	WG856130	1	03/14/16 10:15	03/14/16 13:24	BRJ
Metals (ICPMS) by Method 6020	WG855745	1	03/11/16 15:11	03/15/16 02:18	RDS
Metals (ICPMS) by Method 6020	WG856722	1	03/16/16 09:40	03/16/16 15:34	VSS
Semi Volatile Organic Compounds (GC/MS) by Method 8270 C	WG856165	1	03/13/16 17:17	03/14/16 17:57	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG855836	1	03/14/16 20:49	03/14/16 20:49	JAH
Wet Chemistry by Method 2320 B-2011	WG857121	1	03/20/16 12:18	03/20/16 12:18	MCG
Wet Chemistry by Method 353.2	WG856707	1	03/17/16 02:36	03/17/16 02:36	ASK
Wet Chemistry by Method 9040C	WG855566	1	03/11/16 11:03	03/11/16 11:03	MAJ
Wet Chemistry by Method 9050A	WG855609	1	03/11/16 12:24	03/11/16 12:24	JSS
Wet Chemistry by Method 9056A	WG855551	1	03/11/16 18:07	03/11/16 18:07	CM

MW-30 L822693-10 GW

Collected by: JA / AE
Collected date/time: 03/08/16 16:18
Received date/time: 03/10/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG855633	1	03/14/16 03:11	03/14/16 03:37	JM
Mercury by Method 7470A	WG856130	1	03/14/16 10:15	03/14/16 13:27	BRJ
Metals (ICPMS) by Method 6020	WG855745	1	03/11/16 15:11	03/15/16 02:33	RDS
Metals (ICPMS) by Method 6020	WG856722	1	03/16/16 09:40	03/16/16 15:39	VSS
Semi Volatile Organic Compounds (GC/MS) by Method 8270 C	WG856165	1	03/13/16 17:17	03/14/16 18:21	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG855836	1	03/14/16 21:07	03/14/16 21:07	JAH
Wet Chemistry by Method 2320 B-2011	WG857121	1	03/20/16 12:26	03/20/16 12:26	MCG
Wet Chemistry by Method 353.2	WG856707	1	03/17/16 02:37	03/17/16 02:37	ASK
Wet Chemistry by Method 9040C	WG855566	1	03/11/16 11:03	03/11/16 11:03	MAJ
Wet Chemistry by Method 9050A	WG855609	1	03/11/16 12:24	03/11/16 12:24	JSS
Wet Chemistry by Method 9056A	WG855865	1	03/12/16 06:32	03/12/16 06:32	DJD

DUP-1 L822693-11 GW

Collected by: JA / AE
Collected date/time: 03/08/16 16:18
Received date/time: 03/10/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Gravimetric Analysis by Method 2540 C-2011	WG855633	1	03/14/16 03:11	03/14/16 03:37	JM
Mercury by Method 7470A	WG856130	1	03/14/16 10:15	03/14/16 13:35	BRJ
Metals (ICPMS) by Method 6020	WG855745	1	03/11/16 15:11	03/15/16 02:38	RDS
Metals (ICPMS) by Method 6020	WG856722	1	03/16/16 09:40	03/16/16 15:53	VSS
Semi Volatile Organic Compounds (GC/MS) by Method 8270 C	WG856165	1	03/13/16 17:17	03/14/16 18:44	JF
Volatile Organic Compounds (GC/MS) by Method 8260B	WG855836	1	03/14/16 21:25	03/14/16 21:25	JAH
Wet Chemistry by Method 2320 B-2011	WG857121	1	03/20/16 12:34	03/20/16 12:34	MCG
Wet Chemistry by Method 353.2	WG856707	1	03/17/16 02:38	03/17/16 02:38	ASK
Wet Chemistry by Method 9040C	WG855566	1	03/11/16 11:03	03/11/16 11:03	MAJ
Wet Chemistry by Method 9050A	WG855609	1	03/11/16 12:24	03/11/16 12:24	JSS
Wet Chemistry by Method 9056A	WG855865	1	03/12/16 07:05	03/12/16 07:05	DJD

MW-29 L822693-12 GW

Collected by: JA / AE
Collected date/time: 03/08/16 17:20
Received date/time: 03/10/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG856130	1	03/14/16 10:15	03/14/16 13:37	BRJ
Metals (ICPMS) by Method 6020	WG855745	1	03/11/16 15:11	03/15/16 02:43	RDS
Metals (ICPMS) by Method 6020	WG856722	1	03/16/16 09:40	03/16/16 15:58	VSS
Volatile Organic Compounds (GC/MS) by Method 8260B	WG855836	1	03/14/16 21:44	03/14/16 21:44	JAH

MW-11 L822693-13 GW

Collected by: JA / AE
Collected date/time: 03/09/16 08:25
Received date/time: 03/10/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG855836	1	03/14/16 22:02	03/14/16 22:02	JAH

DUP-2 L822693-14 GW

Collected by: JA / AE
Collected date/time: 03/09/16 08:25
Received date/time: 03/10/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG855836	1	03/14/16 22:20	03/14/16 22:20	JAH

MW-1 L822693-18 GW

Collected by: JA / AE
Collected date/time: 03/09/16 11:53
Received date/time: 03/10/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7470A	WG856130	1	03/14/16 10:15	03/14/16 13:40	BRJ
Metals (ICPMS) by Method 6020	WG855745	1	03/11/16 15:11	03/15/16 02:47	RDS
Metals (ICPMS) by Method 6020	WG856722	1	03/16/16 09:40	03/16/16 16:03	VSS
Volatile Organic Compounds (GC/MS) by Method 8260B	WG855836	1	03/14/16 22:38	03/14/16 22:38	JAH
Wet Chemistry by Method 353.2	WG856707	1	03/17/16 02:39	03/17/16 02:39	ASK
Wet Chemistry by Method 9056A	WG855865	1	03/12/16 07:22	03/12/16 07:22	DJD

TB-03-09-16-A L822693-19 GW

Collected by: JA / AE
Collected date/time: 03/09/16 00:00
Received date/time: 03/10/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG855836	1	03/14/16 18:59	03/14/16 18:59	JAH

TB-03-09-16-B L822693-20 GW

Collected by: JA / AE
Collected date/time: 03/09/16 00:00
Received date/time: 03/10/16 09:00

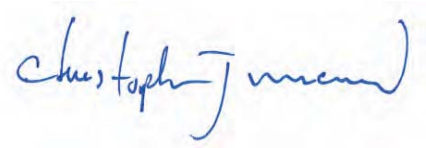
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG855836	1	03/14/16 19:17	03/14/16 19:17	JAH

TB-03-09-16-C L822693-21 GW

Collected by: JA / AE
Collected date/time: 03/09/16 00:00
Received date/time: 03/10/16 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Volatile Organic Compounds (GC/MS) by Method 8260B	WG855836	1	03/14/16 19:35	03/14/16 19:35	JAH

All MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Chris McCord
Technical Service Representative

Sample Handling and Receiving

Prepared and/or analyzed past recommended holding time. Concentrations should be considered minimum values.

ESC Sample ID	Project Sample ID	Method
L822693-09	MW-17R	9040C
L822693-10	MW-30	9040C
L822693-11	DUP-1	9040C

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Alkalinity	189	J6	2.61	20.0	20.0	1	03/18/2016 15:55	WG857120

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Nitrate-Nitrite	3.31		0.0197	0.100	0.100	1	03/17/2016 02:23	WG856707

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Chloride	73.1		0.0519	1.00	1.00	1	03/11/2016 04:57	WG855338
Fluoride	1.62		0.00990	0.100	0.100	1	03/11/2016 04:57	WG855338
Sulfate	70.8		0.0774	5.00	5.00	1	03/11/2016 04:57	WG855338

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Dissolved Solids	727		2.82	10.0	10.0	1	03/13/2016 05:39	WG855632

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Alkalinity	188		2.61	20.0	20.0	1	03/18/2016 16:17	WG857120

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Nitrate-Nitrite	6.53		0.0197	0.100	0.100	1	03/17/2016 02:25	WG856707

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Chloride	160		1.04	1.00	20.0	20	03/11/2016 05:44	WG855338
Fluoride	0.877		0.00990	0.100	0.100	1	03/11/2016 05:13	WG855338
Sulfate	85.9		0.0774	5.00	5.00	1	03/11/2016 05:13	WG855338

Mercury by Method 7470A

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Mercury	U		0.0000490	0.000200	0.000200	1	03/14/2016 13:19	WG856130

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Aluminum,Dissolved	0.00537	J	0.00200	0.100	0.100	1	03/15/2016 02:09	WG855745
Arsenic,Dissolved	0.00420		0.000250	0.00200	0.00200	1	03/15/2016 02:09	WG855745
Barium,Dissolved	0.140	O1	0.000360	0.00500	0.00500	1	03/16/2016 15:10	WG856722
Boron,Dissolved	0.156		0.00150	0.0200	0.0200	1	03/15/2016 02:09	WG855745
Cadmium,Dissolved	U		0.000160	0.00100	0.00100	1	03/15/2016 02:09	WG855745
Chromium,Dissolved	0.00281		0.000540	0.00200	0.00200	1	03/15/2016 02:09	WG855745
Copper,Dissolved	0.000956	J	0.000520	0.00500	0.00500	1	03/15/2016 02:09	WG855745
Cobalt,Dissolved	U		0.000260	0.00200	0.00200	1	03/15/2016 02:09	WG855745
Iron,Dissolved	U		0.0150	0.100	0.100	1	03/15/2016 02:09	WG855745
Lead,Dissolved	0.000309	J	0.000240	0.00200	0.00200	1	03/15/2016 02:09	WG855745
Manganese,Dissolved	0.000837	J	0.000250	0.00500	0.00500	1	03/15/2016 02:09	WG855745
Molybdenum,Dissolved	0.00240	J	0.000140	0.00500	0.00500	1	03/15/2016 02:09	WG855745
Nickel,Dissolved	0.00173	J	0.000350	0.00200	0.00200	1	03/15/2016 02:09	WG855745
Selenium,Dissolved	0.00234		0.000380	0.00200	0.00200	1	03/15/2016 02:09	WG855745
Silver,Dissolved	U		0.000310	0.00200	0.00200	1	03/15/2016 02:09	WG855745
Uranium,Dissolved	0.00248	J	0.000330	0.0100	0.0100	1	03/15/2016 02:09	WG855745
Zinc,Dissolved	0.00275	J	0.00256	0.0250	0.0250	1	03/15/2016 02:09	WG855745

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Acetone	U		0.0100	1.00	1.00	1	03/14/2016 15:28	WG855836
Benzene	U		0.000331	0.00100	0.00100	1	03/14/2016 15:28	WG855836
Bromodichloromethane	U		0.000380	0.00125	0.00125	1	03/14/2016 15:28	WG855836
Bromoform	U		0.000469	0.00100	0.00100	1	03/14/2016 15:28	WG855836
Bromomethane	U		0.000866	0.00500	0.00500	1	03/14/2016 15:28	WG855836
n-Butylbenzene	U		0.000361	0.00100	0.00100	1	03/14/2016 15:28	WG855836
sec-Butylbenzene	U		0.000365	0.00100	0.00100	1	03/14/2016 15:28	WG855836
tert-Butylbenzene	U		0.000399	0.00100	0.00100	1	03/14/2016 15:28	WG855836
Carbon disulfide	U		0.000275	0.00100	0.00100	1	03/14/2016 15:28	WG855836
Carbon tetrachloride	U		0.000379	0.00100	0.00100	1	03/14/2016 15:28	WG855836
Chlorobenzene	U		0.000348	0.00100	0.00100	1	03/14/2016 15:28	WG855836
Chlorodibromomethane	U		0.000327	0.00100	0.00100	1	03/14/2016 15:28	WG855836
Chloroethane	U		0.000453	0.00500	0.00500	1	03/14/2016 15:28	WG855836
Chloroform	0.000942	J	0.000324	0.00500	0.00500	1	03/14/2016 15:28	WG855836
Chloromethane	U		0.000276	0.00250	0.00250	1	03/14/2016 15:28	WG855836
1,2-Dibromoethane	U		0.000381	0.00100	0.00100	1	03/14/2016 15:28	WG855836
1,1-Dichloroethane	U		0.000259	0.00100	0.00100	1	03/14/2016 15:28	WG855836
1,2-Dichloroethane	U		0.000361	0.00100	0.00100	1	03/14/2016 15:28	WG855836
1,1-Dichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 15:28	WG855836
cis-1,2-Dichloroethene	U		0.000260	0.00100	0.00100	1	03/14/2016 15:28	WG855836
trans-1,2-Dichloroethene	U		0.000396	0.00100	0.00100	1	03/14/2016 15:28	WG855836
1,2-Dichloropropane	U		0.000306	0.00100	0.00100	1	03/14/2016 15:28	WG855836
cis-1,3-Dichloropropene	U		0.000418	0.00100	0.00100	1	03/14/2016 15:28	WG855836
trans-1,3-Dichloropropene	U		0.000419	0.00100	0.00100	1	03/14/2016 15:28	WG855836
Ethylbenzene	U		0.000384	0.00100	0.00100	1	03/14/2016 15:28	WG855836
Hexachloro-1,3-butadiene	U		0.000256	0.00100	0.00100	1	03/14/2016 15:28	WG855836
2-Hexanone	U		0.00382	0.0100	0.0100	1	03/14/2016 15:28	WG855836
Isopropylbenzene	U		0.000326	0.00100	0.00100	1	03/14/2016 15:28	WG855836
p-Isopropyltoluene	U		0.000350	0.00100	0.00100	1	03/14/2016 15:28	WG855836
2-Butanone (MEK)	U		0.00393	0.0100	0.0100	1	03/14/2016 15:28	WG855836
Methylene Chloride	U		0.00100	0.00500	0.00500	1	03/14/2016 15:28	WG855836
4-Methyl-2-pentanone (MIBK)	U		0.00214	0.0100	0.0100	1	03/14/2016 15:28	WG855836
Methyl tert-butyl ether	U		0.000367	0.00100	0.00100	1	03/14/2016 15:28	WG855836
Naphthalene	U		0.00100	0.00500	0.00500	1	03/14/2016 15:28	WG855836
n-Propylbenzene	U		0.000349	0.00100	0.00100	1	03/14/2016 15:28	WG855836
Styrene	U		0.000307	0.00100	0.00100	1	03/14/2016 15:28	WG855836
1,1,2,2-Tetrachloroethane	U		0.000130	0.00100	0.00100	1	03/14/2016 15:28	WG855836
Tetrachloroethene	U		0.000372	0.00100	0.00100	1	03/14/2016 15:28	WG855836
Toluene	U		0.000780	0.00500	0.00500	1	03/14/2016 15:28	WG855836
1,1,1-Trichloroethane	U		0.000319	0.00100	0.00100	1	03/14/2016 15:28	WG855836
1,1,2-Trichloroethane	U		0.000383	0.00100	0.00100	1	03/14/2016 15:28	WG855836
Trichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 15:28	WG855836
1,2,4-Trimethylbenzene	U		0.000373	0.00100	0.00100	1	03/14/2016 15:28	WG855836
1,3,5-Trimethylbenzene	U		0.000387	0.00100	0.00100	1	03/14/2016 15:28	WG855836
Vinyl chloride	U		0.000259	0.00100	0.00100	1	03/14/2016 15:28	WG855836
Xylenes, Total	U		0.00106	0.00300	0.00300	1	03/14/2016 15:28	WG855836
(S) Toluene-d8	*100*				*90.0-115*		*03/14/2016 15:28*	WG855836
(S) Dibromofluoromethane	*95.8*				*79.0-121*		*03/14/2016 15:28*	WG855836
(S) 4-Bromofluorobenzene	*97.3*				*80.1-120*		*03/14/2016 15:28*	WG855836

Semi Volatile Organic Compounds (GC/MS) by Method 8270 C

Analyte	Result mg/l	Qualifier	SDL mg/l	Unadj. MQL mg/l	MQL mg/l	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.000316	0.00100	0.00100	1	03/14/2016 17:11	WG856165
Acenaphthylene	U		0.000309	0.00100	0.00100	1	03/14/2016 17:11	WG856165
Acetophenone	U		0.00247	0.0100	0.0100	1	03/14/2016 17:11	WG856165
Anthracene	U		0.000291	0.00100	0.00100	1	03/14/2016 17:11	WG856165
Atrazine	U		0.000260	0.0100	0.0100	1	03/14/2016 17:11	WG856165
Benzo(a)anthracene	U		0.0000510	0.00100	0.00100	1	03/14/2016 17:11	WG856165
Benzaldehyde	U		0.00140	0.0100	0.0100	1	03/14/2016 17:11	WG856165
Benzo(b)fluoranthene	U		0.0000896	0.00100	0.00100	1	03/14/2016 17:11	WG856165
Benzo(k)fluoranthene	U		0.000355	0.00100	0.00100	1	03/14/2016 17:11	WG856165
Benzo(g,h,i)perylene	U		0.00000227	0.00100	0.00100	1	03/14/2016 17:11	WG856165
Benzo(a)pyrene	U		0.0000381	0.000200	0.000200	1	03/14/2016 17:11	WG856165
Biphenyl	U		0.000325	0.0100	0.0100	1	03/14/2016 17:11	WG856165
Bis(2-chlorethoxy)methane	U		0.000329	0.0100	0.0100	1	03/14/2016 17:11	WG856165
Bis(2-chloroethyl)ether	U		0.00162	0.0100	0.0100	1	03/14/2016 17:11	WG856165
Bis(2-chloroisopropyl)ether	U		0.000445	0.0100	0.0100	1	03/14/2016 17:11	WG856165
4-Bromophenyl-phenylether	U		0.000335	0.0100	0.0100	1	03/14/2016 17:11	WG856165
2-Chloronaphthalene	U		0.000330	0.00100	0.00100	1	03/14/2016 17:11	WG856165
4-Chlorophenyl-phenylether	U		0.000303	0.0100	0.0100	1	03/14/2016 17:11	WG856165
Caprolactam	U		0.00259	0.0100	0.0100	1	03/14/2016 17:11	WG856165
Carbazole	U		0.000260	0.0100	0.0100	1	03/14/2016 17:11	WG856165
Chrysene	U		0.000332	0.00100	0.00100	1	03/14/2016 17:11	WG856165
Dibenz(a,h)anthracene	U		0.0000644	0.000200	0.000200	1	03/14/2016 17:11	WG856165
Dibenzofuran	U		0.000338	0.0100	0.0100	1	03/14/2016 17:11	WG856165
3,3-Dichlorobenzidine	U		0.00202	0.0100	0.0100	1	03/14/2016 17:11	WG856165
2,4-Dinitrotoluene	U		0.00165	0.0100	0.0100	1	03/14/2016 17:11	WG856165
2,6-Dinitrotoluene	U		0.000279	0.0100	0.0100	1	03/14/2016 17:11	WG856165
Fluoranthene	U		0.000310	0.00100	0.00100	1	03/14/2016 17:11	WG856165
Fluorene	U		0.000323	0.00100	0.00100	1	03/14/2016 17:11	WG856165
Hexachlorobenzene	U		0.000341	0.00100	0.00100	1	03/14/2016 17:11	WG856165
Hexachloro-1,3-butadiene	U		0.000329	0.0100	0.0100	1	03/14/2016 17:11	WG856165
Hexachlorocyclopentadiene	U		0.00233	0.0100	0.0100	1	03/14/2016 17:11	WG856165
Hexachloroethane	U		0.000365	0.0100	0.0100	1	03/14/2016 17:11	WG856165
Indeno(1,2,3-cd)pyrene	U		0.000279	0.00100	0.00100	1	03/14/2016 17:11	WG856165
Isophorone	U		0.000272	0.0100	0.0100	1	03/14/2016 17:11	WG856165
1-Methylnaphthalene	U		0.000332	0.00100	0.00100	1	03/14/2016 17:11	WG856165
2-Methylnaphthalene	U		0.000311	0.00100	0.00100	1	03/14/2016 17:11	WG856165
Naphthalene	U		0.000372	0.00100	0.00100	1	03/14/2016 17:11	WG856165
Nitrobenzene	U		0.000367	0.0100	0.0100	1	03/14/2016 17:11	WG856165
n-Nitrosodiphenylamine	U		0.000304	0.0100	0.0100	1	03/14/2016 17:11	WG856165
n-Nitrosodi-n-propylamine	U		0.000403	0.0100	0.0100	1	03/14/2016 17:11	WG856165
Phenanthrene	U		0.000366	0.00100	0.00100	1	03/14/2016 17:11	WG856165
Benzylbutyl phthalate	U		0.000275	0.00300	0.00300	1	03/14/2016 17:11	WG856165
Bis(2-ethylhexyl)phthalate	0.00278	J	0.000709	0.00300	0.00300	1	03/14/2016 17:11	WG856165
Di-n-butyl phthalate	0.000404	J	0.000266	0.00300	0.00300	1	03/14/2016 17:11	WG856165
Diethyl phthalate	U		0.000282	0.00300	0.00300	1	03/14/2016 17:11	WG856165
Dimethyl phthalate	U		0.000283	0.00300	0.00300	1	03/14/2016 17:11	WG856165
Di-n-octyl phthalate	U		0.000278	0.00300	0.00300	1	03/14/2016 17:11	WG856165
Pyrene	U		0.000330	0.00100	0.00100	1	03/14/2016 17:11	WG856165
1,2,4-Trichlorobenzene	U		0.000355	0.0100	0.0100	1	03/14/2016 17:11	WG856165
4-Chloro-3-methylphenol	U		0.000263	0.0100	0.0100	1	03/14/2016 17:11	WG856165
2-Chlorophenol	U		0.000283	0.0100	0.0100	1	03/14/2016 17:11	WG856165
2,4-Dichlorophenol	U		0.000284	0.0100	0.0100	1	03/14/2016 17:11	WG856165
2,4-Dimethylphenol	U		0.000624	0.0100	0.0100	1	03/14/2016 17:11	WG856165
4,6-Dinitro-2-methylphenol	U		0.00262	0.0100	0.0100	1	03/14/2016 17:11	WG856165
2,4-Dinitrophenol	U		0.00325	0.0100	0.0100	1	03/14/2016 17:11	WG856165
2-Nitrophenol	U		0.000320	0.0100	0.0100	1	03/14/2016 17:11	WG856165

Semi Volatile Organic Compounds (GC/MS) by Method 8270 C

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
2-Nitroaniline	U		0.00190	0.0100	0.0100	1	03/14/2016 17:11	WG856165
2-Methylphenol	U		0.000312	0.0100	0.0100	1	03/14/2016 17:11	WG856165
3&4-Methyl Phenol	U		0.000266	0.0100	0.0100	1	03/14/2016 17:11	WG856165
3-Nitroaniline	U		0.000308	0.0100	0.0100	1	03/14/2016 17:11	WG856165
4-Chloroaniline	U		0.000382	0.0100	0.0100	1	03/14/2016 17:11	WG856165
4-Nitroaniline	U		0.000349	0.0100	0.0100	1	03/14/2016 17:11	WG856165
4-Nitrophenol	U		0.00201	0.0100	0.0100	1	03/14/2016 17:11	WG856165
Pentachlorophenol	U		0.000313	0.0100	0.0100	1	03/14/2016 17:11	WG856165
Phenol	U		0.000334	0.0100	0.0100	1	03/14/2016 17:11	WG856165
2,4,5-Trichlorophenol	U		0.000236	0.0100	0.0100	1	03/14/2016 17:11	WG856165
2,4,6-Trichlorophenol	U		0.000297	0.0100	0.0100	1	03/14/2016 17:11	WG856165
(S) 2-Fluorophenol	*44.1*				*10.0-77.9*		*03/14/2016 17:11*	WG856165
(S) Phenol-d5	*32.4*				*5.00-70.1*		*03/14/2016 17:11*	WG856165
(S) Nitrobenzene-d5	*54.2*				*21.8-123*		*03/14/2016 17:11*	WG856165
(S) 2-Fluorobiphenyl	*57.8*				*29.5-131*		*03/14/2016 17:11*	WG856165
(S) 2,4,6-Tribromophenol	*52.7*				*11.2-130*		*03/14/2016 17:11*	WG856165
(S) p-Terphenyl-d14	*67.3*				*29.3-137*		*03/14/2016 17:11*	WG856165

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Dissolved Solids	972		2.82	10.0	10.0	1	03/13/2016 05:39	WG855632

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Nitrate-Nitrite	2.53		0.0197	0.100	0.100	1	03/17/2016 02:26	WG856707

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Chloride	217		1.04	1.00	20.0	20	03/11/2016 18:22	WG855551
Fluoride	0.552		0.00990	0.100	0.100	1	03/11/2016 16:35	WG855551
Sulfate	75.7		0.0774	5.00	5.00	1	03/11/2016 16:35	WG855551

Mercury by Method 7470A

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Mercury	U		0.0000490	0.000200	0.000200	1	03/14/2016 13:22	WG856130

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Aluminum,Dissolved	0.00530	J	0.00200	0.100	0.100	1	03/15/2016 02:13	WG855745
Arsenic,Dissolved	0.00365		0.000250	0.00200	0.00200	1	03/15/2016 02:13	WG855745
Barium,Dissolved	0.0976		0.000360	0.00500	0.00500	1	03/16/2016 15:29	WG856722
Boron,Dissolved	0.196		0.00150	0.0200	0.0200	1	03/15/2016 02:13	WG855745
Cadmium,Dissolved	U		0.000160	0.00100	0.00100	1	03/15/2016 02:13	WG855745
Chromium,Dissolved	U		0.000540	0.00200	0.00200	1	03/15/2016 02:13	WG855745
Copper,Dissolved	0.00100	J	0.000520	0.00500	0.00500	1	03/15/2016 02:13	WG855745
Cobalt,Dissolved	U		0.000260	0.00200	0.00200	1	03/15/2016 02:13	WG855745
Iron,Dissolved	0.0238	J	0.0150	0.100	0.100	1	03/15/2016 02:13	WG855745
Lead,Dissolved	0.000241	J	0.000240	0.00200	0.00200	1	03/15/2016 02:13	WG855745
Manganese,Dissolved	0.000620	J	0.000250	0.00500	0.00500	1	03/15/2016 02:13	WG855745
Molybdenum,Dissolved	0.00288	J	0.000140	0.00500	0.00500	1	03/15/2016 02:13	WG855745
Nickel,Dissolved	0.000721	J	0.000350	0.00200	0.00200	1	03/15/2016 02:13	WG855745
Selenium,Dissolved	0.00144	J	0.000380	0.00200	0.00200	1	03/15/2016 02:13	WG855745
Silver,Dissolved	U		0.000310	0.00200	0.00200	1	03/15/2016 02:13	WG855745
Uranium,Dissolved	0.00303	J	0.000330	0.0100	0.0100	1	03/15/2016 02:13	WG855745
Zinc,Dissolved	0.00418	J	0.00256	0.0250	0.0250	1	03/15/2016 02:13	WG855745

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Acetone	U		0.0100	1.00	1.00	1	03/14/2016 19:54	WG855836
Benzene	U		0.000331	0.00100	0.00100	1	03/14/2016 19:54	WG855836
Bromodichloromethane	U		0.000380	0.00125	0.00125	1	03/14/2016 19:54	WG855836
Bromoform	U		0.000469	0.00100	0.00100	1	03/14/2016 19:54	WG855836
Bromomethane	U		0.000866	0.00500	0.00500	1	03/14/2016 19:54	WG855836
n-Butylbenzene	U		0.000361	0.00100	0.00100	1	03/14/2016 19:54	WG855836
sec-Butylbenzene	U		0.000365	0.00100	0.00100	1	03/14/2016 19:54	WG855836
tert-Butylbenzene	U		0.000399	0.00100	0.00100	1	03/14/2016 19:54	WG855836
Carbon disulfide	U		0.000275	0.00100	0.00100	1	03/14/2016 19:54	WG855836
Carbon tetrachloride	U		0.000379	0.00100	0.00100	1	03/14/2016 19:54	WG855836

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	SDL mg/l	Unadj. MQL mg/l	MQL mg/l	Dilution	Analysis date / time	Batch
Chlorobenzene	U		0.000348	0.00100	0.00100	1	03/14/2016 19:54	WG855836
Chlorodibromomethane	U		0.000327	0.00100	0.00100	1	03/14/2016 19:54	WG855836
Chloroethane	U		0.000453	0.00500	0.00500	1	03/14/2016 19:54	WG855836
Chloroform	U		0.000324	0.00500	0.00500	1	03/14/2016 19:54	WG855836
Chloromethane	U		0.000276	0.00250	0.00250	1	03/14/2016 19:54	WG855836
1,2-Dibromoethane	U		0.000381	0.00100	0.00100	1	03/14/2016 19:54	WG855836
1,1-Dichloroethane	U		0.000259	0.00100	0.00100	1	03/14/2016 19:54	WG855836
1,2-Dichloroethane	U		0.000361	0.00100	0.00100	1	03/14/2016 19:54	WG855836
1,1-Dichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 19:54	WG855836
cis-1,2-Dichloroethene	U		0.000260	0.00100	0.00100	1	03/14/2016 19:54	WG855836
trans-1,2-Dichloroethene	U		0.000396	0.00100	0.00100	1	03/14/2016 19:54	WG855836
1,2-Dichloropropane	U		0.000306	0.00100	0.00100	1	03/14/2016 19:54	WG855836
cis-1,3-Dichloropropene	U		0.000418	0.00100	0.00100	1	03/14/2016 19:54	WG855836
trans-1,3-Dichloropropene	U		0.000419	0.00100	0.00100	1	03/14/2016 19:54	WG855836
Ethylbenzene	U		0.000384	0.00100	0.00100	1	03/14/2016 19:54	WG855836
Hexachloro-1,3-butadiene	U		0.000256	0.00100	0.00100	1	03/14/2016 19:54	WG855836
2-Hexanone	U		0.00382	0.0100	0.0100	1	03/14/2016 19:54	WG855836
Isopropylbenzene	U		0.000326	0.00100	0.00100	1	03/14/2016 19:54	WG855836
p-Isopropyltoluene	U		0.000350	0.00100	0.00100	1	03/14/2016 19:54	WG855836
2-Butanone (MEK)	U		0.00393	0.0100	0.0100	1	03/14/2016 19:54	WG855836
Methylene Chloride	U		0.00100	0.00500	0.00500	1	03/14/2016 19:54	WG855836
4-Methyl-2-pentanone (MIBK)	U		0.00214	0.0100	0.0100	1	03/14/2016 19:54	WG855836
Methyl tert-butyl ether	U		0.000367	0.00100	0.00100	1	03/14/2016 19:54	WG855836
Naphthalene	U		0.00100	0.00500	0.00500	1	03/14/2016 19:54	WG855836
n-Propylbenzene	U		0.000349	0.00100	0.00100	1	03/14/2016 19:54	WG855836
Styrene	U		0.000307	0.00100	0.00100	1	03/14/2016 19:54	WG855836
1,1,2,2-Tetrachloroethane	U		0.000130	0.00100	0.00100	1	03/14/2016 19:54	WG855836
Tetrachloroethene	U		0.000372	0.00100	0.00100	1	03/14/2016 19:54	WG855836
Toluene	U		0.000780	0.00500	0.00500	1	03/14/2016 19:54	WG855836
1,1,1-Trichloroethane	U		0.000319	0.00100	0.00100	1	03/14/2016 19:54	WG855836
1,1,2-Trichloroethane	U		0.000383	0.00100	0.00100	1	03/14/2016 19:54	WG855836
Trichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 19:54	WG855836
1,2,4-Trimethylbenzene	U		0.000373	0.00100	0.00100	1	03/14/2016 19:54	WG855836
1,3,5-Trimethylbenzene	U		0.000387	0.00100	0.00100	1	03/14/2016 19:54	WG855836
Vinyl chloride	U		0.000259	0.00100	0.00100	1	03/14/2016 19:54	WG855836
Xylenes, Total	U		0.00106	0.00300	0.00300	1	03/14/2016 19:54	WG855836
(S) Toluene-d8	*103*				*90.0-115*		*03/14/2016 19:54*	WG855836
(S) Dibromofluoromethane	*100*				*79.0-121*		*03/14/2016 19:54*	WG855836
(S) 4-Bromofluorobenzene	*105*				*80.1-120*		*03/14/2016 19:54*	WG855836

Semi Volatile Organic Compounds (GC/MS) by Method 8270 C

Analyte	Result mg/l	Qualifier	SDL mg/l	Unadj. MQL mg/l	MQL mg/l	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.000316	0.00100	0.00100	1	03/14/2016 17:34	WG856165
Acenaphthylene	U		0.000309	0.00100	0.00100	1	03/14/2016 17:34	WG856165
Acetophenone	U		0.00247	0.0100	0.0100	1	03/14/2016 17:34	WG856165
Anthracene	U		0.000291	0.00100	0.00100	1	03/14/2016 17:34	WG856165
Atrazine	U		0.000260	0.0100	0.0100	1	03/14/2016 17:34	WG856165
Benzo(a)anthracene	U		0.0000510	0.00100	0.00100	1	03/14/2016 17:34	WG856165
Benzaldehyde	U		0.00140	0.0100	0.0100	1	03/14/2016 17:34	WG856165
Benzo(b)fluoranthene	U		0.0000896	0.00100	0.00100	1	03/14/2016 17:34	WG856165
Benzo(k)fluoranthene	U		0.000355	0.00100	0.00100	1	03/14/2016 17:34	WG856165
Benzo(g,h,i)perylene	U		0.00000227	0.00100	0.00100	1	03/14/2016 17:34	WG856165
Benzo(a)pyrene	U		0.0000381	0.000200	0.000200	1	03/14/2016 17:34	WG856165
Biphenyl	U		0.000325	0.0100	0.0100	1	03/14/2016 17:34	WG856165
Bis(2-chlorethoxy)methane	U		0.000329	0.0100	0.0100	1	03/14/2016 17:34	WG856165

Semi Volatile Organic Compounds (GC/MS) by Method 8270 C

Analyte	Result mg/l	Qualifier	SDL mg/l	Unadj. MQL mg/l	MQL mg/l	Dilution	Analysis date / time	Batch
Bis(2-chloroethyl)ether	U		0.00162	0.0100	0.0100	1	03/14/2016 17:34	WG856165
Bis(2-chloroisopropyl)ether	U		0.000445	0.0100	0.0100	1	03/14/2016 17:34	WG856165
4-Bromophenyl-phenylether	U		0.000335	0.0100	0.0100	1	03/14/2016 17:34	WG856165
2-Chloronaphthalene	U		0.000330	0.00100	0.00100	1	03/14/2016 17:34	WG856165
4-Chlorophenyl-phenylether	U		0.000303	0.0100	0.0100	1	03/14/2016 17:34	WG856165
Caprolactam	0.00357	J	0.00259	0.0100	0.0100	1	03/14/2016 17:34	WG856165
Carbazole	U		0.000260	0.0100	0.0100	1	03/14/2016 17:34	WG856165
Chrysene	U		0.000332	0.00100	0.00100	1	03/14/2016 17:34	WG856165
Dibenz(a,h)anthracene	U		0.0000644	0.000200	0.000200	1	03/14/2016 17:34	WG856165
Dibenzofuran	U		0.000338	0.0100	0.0100	1	03/14/2016 17:34	WG856165
3,3-Dichlorobenzidine	U		0.00202	0.0100	0.0100	1	03/14/2016 17:34	WG856165
2,4-Dinitrotoluene	U		0.00165	0.0100	0.0100	1	03/14/2016 17:34	WG856165
2,6-Dinitrotoluene	U		0.000279	0.0100	0.0100	1	03/14/2016 17:34	WG856165
Fluoranthene	U		0.000310	0.00100	0.00100	1	03/14/2016 17:34	WG856165
Fluorene	U		0.000323	0.00100	0.00100	1	03/14/2016 17:34	WG856165
Hexachlorobenzene	U		0.000341	0.00100	0.00100	1	03/14/2016 17:34	WG856165
Hexachloro-1,3-butadiene	U		0.000329	0.0100	0.0100	1	03/14/2016 17:34	WG856165
Hexachlorocyclopentadiene	U		0.00233	0.0100	0.0100	1	03/14/2016 17:34	WG856165
Hexachloroethane	U		0.000365	0.0100	0.0100	1	03/14/2016 17:34	WG856165
Indeno(1,2,3-cd)pyrene	U		0.000279	0.00100	0.00100	1	03/14/2016 17:34	WG856165
Isophorone	U		0.000272	0.0100	0.0100	1	03/14/2016 17:34	WG856165
1-Methylnaphthalene	U		0.000332	0.00100	0.00100	1	03/14/2016 17:34	WG856165
2-Methylnaphthalene	U		0.000311	0.00100	0.00100	1	03/14/2016 17:34	WG856165
Naphthalene	U		0.000372	0.00100	0.00100	1	03/14/2016 17:34	WG856165
Nitrobenzene	U		0.000367	0.0100	0.0100	1	03/14/2016 17:34	WG856165
n-Nitrosodiphenylamine	U		0.000304	0.0100	0.0100	1	03/14/2016 17:34	WG856165
n-Nitrosodi-n-propylamine	U		0.000403	0.0100	0.0100	1	03/14/2016 17:34	WG856165
Phenanthrene	U		0.000366	0.00100	0.00100	1	03/14/2016 17:34	WG856165
Benzylbutyl phthalate	U		0.000275	0.00300	0.00300	1	03/14/2016 17:34	WG856165
Bis(2-ethylhexyl)phthalate	0.00234	J	0.000709	0.00300	0.00300	1	03/14/2016 17:34	WG856165
Di-n-butyl phthalate	U		0.000266	0.00300	0.00300	1	03/14/2016 17:34	WG856165
Diethyl phthalate	U		0.000282	0.00300	0.00300	1	03/14/2016 17:34	WG856165
Dimethyl phthalate	U		0.000283	0.00300	0.00300	1	03/14/2016 17:34	WG856165
Di-n-octyl phthalate	U		0.000278	0.00300	0.00300	1	03/14/2016 17:34	WG856165
Pyrene	U		0.000330	0.00100	0.00100	1	03/14/2016 17:34	WG856165
1,2,4-Trichlorobenzene	U		0.000355	0.0100	0.0100	1	03/14/2016 17:34	WG856165
4-Chloro-3-methylphenol	U		0.000263	0.0100	0.0100	1	03/14/2016 17:34	WG856165
2-Chlorophenol	U		0.000283	0.0100	0.0100	1	03/14/2016 17:34	WG856165
2,4-Dichlorophenol	U		0.000284	0.0100	0.0100	1	03/14/2016 17:34	WG856165
2,4-Dimethylphenol	U		0.000624	0.0100	0.0100	1	03/14/2016 17:34	WG856165
4,6-Dinitro-2-methylphenol	U		0.00262	0.0100	0.0100	1	03/14/2016 17:34	WG856165
2,4-Dinitrophenol	U		0.00325	0.0100	0.0100	1	03/14/2016 17:34	WG856165
2-Nitrophenol	U		0.000320	0.0100	0.0100	1	03/14/2016 17:34	WG856165
2-Nitroaniline	U		0.00190	0.0100	0.0100	1	03/14/2016 17:34	WG856165
2-Methylphenol	U		0.000312	0.0100	0.0100	1	03/14/2016 17:34	WG856165
3&4-Methyl Phenol	U		0.000266	0.0100	0.0100	1	03/14/2016 17:34	WG856165
3-Nitroaniline	U		0.000308	0.0100	0.0100	1	03/14/2016 17:34	WG856165
4-Chloroaniline	U		0.000382	0.0100	0.0100	1	03/14/2016 17:34	WG856165
4-Nitroaniline	U		0.000349	0.0100	0.0100	1	03/14/2016 17:34	WG856165
4-Nitrophenol	U		0.00201	0.0100	0.0100	1	03/14/2016 17:34	WG856165
Pentachlorophenol	U		0.000313	0.0100	0.0100	1	03/14/2016 17:34	WG856165
Phenol	U		0.000334	0.0100	0.0100	1	03/14/2016 17:34	WG856165
2,4,5-Trichlorophenol	U		0.000236	0.0100	0.0100	1	03/14/2016 17:34	WG856165
2,4,6-Trichlorophenol	U		0.000297	0.0100	0.0100	1	03/14/2016 17:34	WG856165
(S) 2-Fluorophenol	*34.1*				*10.0-77.9*		*03/14/2016 17:34*	WG856165
(S) Phenol-d5	*26.4*				*5.00-70.1*		*03/14/2016 17:34*	WG856165

Semi Volatile Organic Compounds (GC/MS) by Method 8270 C

Analyte	Result mg/l	Qualifier	SDL mg/l	Unadj. MQL mg/l	MQL mg/l	Dilution	Analysis date / time	Batch
(S) Nitrobenzene-d5	*47.6*				*21.8-123*		*03/14/2016 17:34*	WG856165
(S) 2-Fluorobiphenyl	*51.3*				*29.5-131*		*03/14/2016 17:34*	WG856165
(S) 2,4,6-Tribromophenol	*44.5*				*11.2-130*		*03/14/2016 17:34*	WG856165
(S) p-Terphenyl-d14	*59.3*				*29.3-137*		*03/14/2016 17:34*	WG856165

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Acetone	U		0.0100	1.00	1.00	1	03/14/2016 20:12	WG855836
Benzene	U		0.000331	0.00100	0.00100	1	03/14/2016 20:12	WG855836
Bromodichloromethane	U		0.000380	0.00125	0.00125	1	03/14/2016 20:12	WG855836
Bromoform	U		0.000469	0.00100	0.00100	1	03/14/2016 20:12	WG855836
Bromomethane	U		0.000866	0.00500	0.00500	1	03/14/2016 20:12	WG855836
n-Butylbenzene	U		0.000361	0.00100	0.00100	1	03/14/2016 20:12	WG855836
sec-Butylbenzene	U		0.000365	0.00100	0.00100	1	03/14/2016 20:12	WG855836
tert-Butylbenzene	U		0.000399	0.00100	0.00100	1	03/14/2016 20:12	WG855836
Carbon disulfide	U		0.000275	0.00100	0.00100	1	03/14/2016 20:12	WG855836
Carbon tetrachloride	U		0.000379	0.00100	0.00100	1	03/14/2016 20:12	WG855836
Chlorobenzene	U		0.000348	0.00100	0.00100	1	03/14/2016 20:12	WG855836
Chlorodibromomethane	U		0.000327	0.00100	0.00100	1	03/14/2016 20:12	WG855836
Chloroethane	U		0.000453	0.00500	0.00500	1	03/14/2016 20:12	WG855836
Chloroform	U		0.000324	0.00500	0.00500	1	03/14/2016 20:12	WG855836
Chloromethane	U		0.000276	0.00250	0.00250	1	03/14/2016 20:12	WG855836
1,2-Dibromoethane	U		0.000381	0.00100	0.00100	1	03/14/2016 20:12	WG855836
1,1-Dichloroethane	U		0.000259	0.00100	0.00100	1	03/14/2016 20:12	WG855836
1,2-Dichloroethane	U		0.000361	0.00100	0.00100	1	03/14/2016 20:12	WG855836
1,1-Dichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 20:12	WG855836
cis-1,2-Dichloroethene	U		0.000260	0.00100	0.00100	1	03/14/2016 20:12	WG855836
trans-1,2-Dichloroethene	U		0.000396	0.00100	0.00100	1	03/14/2016 20:12	WG855836
1,2-Dichloropropane	U		0.000306	0.00100	0.00100	1	03/14/2016 20:12	WG855836
cis-1,3-Dichloropropene	U		0.000418	0.00100	0.00100	1	03/14/2016 20:12	WG855836
trans-1,3-Dichloropropene	U		0.000419	0.00100	0.00100	1	03/14/2016 20:12	WG855836
Ethylbenzene	U		0.000384	0.00100	0.00100	1	03/14/2016 20:12	WG855836
Hexachloro-1,3-butadiene	U		0.000256	0.00100	0.00100	1	03/14/2016 20:12	WG855836
2-Hexanone	U		0.00382	0.0100	0.0100	1	03/14/2016 20:12	WG855836
Isopropylbenzene	U		0.000326	0.00100	0.00100	1	03/14/2016 20:12	WG855836
p-Isopropyltoluene	U		0.000350	0.00100	0.00100	1	03/14/2016 20:12	WG855836
2-Butanone (MEK)	U		0.00393	0.0100	0.0100	1	03/14/2016 20:12	WG855836
Methylene Chloride	U		0.00100	0.00500	0.00500	1	03/14/2016 20:12	WG855836
4-Methyl-2-pentanone (MIBK)	U		0.00214	0.0100	0.0100	1	03/14/2016 20:12	WG855836
Methyl tert-butyl ether	U		0.000367	0.00100	0.00100	1	03/14/2016 20:12	WG855836
Naphthalene	U		0.00100	0.00500	0.00500	1	03/14/2016 20:12	WG855836
n-Propylbenzene	U		0.000349	0.00100	0.00100	1	03/14/2016 20:12	WG855836
Styrene	U		0.000307	0.00100	0.00100	1	03/14/2016 20:12	WG855836
1,1,2,2-Tetrachloroethane	U		0.000130	0.00100	0.00100	1	03/14/2016 20:12	WG855836
Tetrachloroethene	U		0.000372	0.00100	0.00100	1	03/14/2016 20:12	WG855836
Toluene	U		0.000780	0.00500	0.00500	1	03/14/2016 20:12	WG855836
1,1,1-Trichloroethane	U		0.000319	0.00100	0.00100	1	03/14/2016 20:12	WG855836
1,1,2-Trichloroethane	U		0.000383	0.00100	0.00100	1	03/14/2016 20:12	WG855836
Trichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 20:12	WG855836
1,2,4-Trimethylbenzene	U		0.000373	0.00100	0.00100	1	03/14/2016 20:12	WG855836
1,3,5-Trimethylbenzene	U		0.000387	0.00100	0.00100	1	03/14/2016 20:12	WG855836
Vinyl chloride	U		0.000259	0.00100	0.00100	1	03/14/2016 20:12	WG855836
Xylenes, Total	U		0.00106	0.00300	0.00300	1	03/14/2016 20:12	WG855836
(S) Toluene-d8	*101*				*90.0-115*		*03/14/2016 20:12*	WG855836
(S) Dibromofluoromethane	*96.9*				*79.0-121*		*03/14/2016 20:12*	WG855836
(S) 4-Bromofluorobenzene	*104*				*80.1-120*		*03/14/2016 20:12*	WG855836

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Dissolved Solids	1290		2.82	10.0	10.0	1	03/13/2016 05:39	WG855632

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Nitrate-Nitrite	7.84		0.0197	0.100	0.100	1	03/17/2016 02:27	WG856707

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Chloride	291		1.04	1.00	20.0	20	03/11/2016 18:38	WG855551
Fluoride	0.357		0.00990	0.100	0.100	1	03/11/2016 16:50	WG855551
Sulfate	78.2		0.0774	5.00	5.00	1	03/11/2016 16:50	WG855551

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Acetone	U		0.0100	1.00	1.00	1	03/14/2016 20:30	WG855836
Benzene	U		0.000331	0.00100	0.00100	1	03/14/2016 20:30	WG855836
Bromodichloromethane	U		0.000380	0.00125	0.00125	1	03/14/2016 20:30	WG855836
Bromoform	U		0.000469	0.00100	0.00100	1	03/14/2016 20:30	WG855836
Bromomethane	U		0.000866	0.00500	0.00500	1	03/14/2016 20:30	WG855836
n-Butylbenzene	U		0.000361	0.00100	0.00100	1	03/14/2016 20:30	WG855836
sec-Butylbenzene	U		0.000365	0.00100	0.00100	1	03/14/2016 20:30	WG855836
tert-Butylbenzene	U		0.000399	0.00100	0.00100	1	03/14/2016 20:30	WG855836
Carbon disulfide	U		0.000275	0.00100	0.00100	1	03/14/2016 20:30	WG855836
Carbon tetrachloride	U		0.000379	0.00100	0.00100	1	03/14/2016 20:30	WG855836
Chlorobenzene	U		0.000348	0.00100	0.00100	1	03/14/2016 20:30	WG855836
Chlorodibromomethane	U		0.000327	0.00100	0.00100	1	03/14/2016 20:30	WG855836
Chloroethane	U		0.000453	0.00500	0.00500	1	03/14/2016 20:30	WG855836
Chloroform	U		0.000324	0.00500	0.00500	1	03/14/2016 20:30	WG855836
Chloromethane	U		0.000276	0.00250	0.00250	1	03/14/2016 20:30	WG855836
1,2-Dibromoethane	U		0.000381	0.00100	0.00100	1	03/14/2016 20:30	WG855836
1,1-Dichloroethane	U		0.000259	0.00100	0.00100	1	03/14/2016 20:30	WG855836
1,2-Dichloroethane	U		0.000361	0.00100	0.00100	1	03/14/2016 20:30	WG855836
1,1-Dichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 20:30	WG855836
cis-1,2-Dichloroethene	U		0.000260	0.00100	0.00100	1	03/14/2016 20:30	WG855836
trans-1,2-Dichloroethene	U		0.000396	0.00100	0.00100	1	03/14/2016 20:30	WG855836
1,2-Dichloropropane	U		0.000306	0.00100	0.00100	1	03/14/2016 20:30	WG855836
cis-1,3-Dichloropropene	U		0.000418	0.00100	0.00100	1	03/14/2016 20:30	WG855836
trans-1,3-Dichloropropene	U		0.000419	0.00100	0.00100	1	03/14/2016 20:30	WG855836
Ethylbenzene	U		0.000384	0.00100	0.00100	1	03/14/2016 20:30	WG855836
Hexachloro-1,3-butadiene	U		0.000256	0.00100	0.00100	1	03/14/2016 20:30	WG855836
2-Hexanone	U		0.00382	0.0100	0.0100	1	03/14/2016 20:30	WG855836
Isopropylbenzene	U		0.000326	0.00100	0.00100	1	03/14/2016 20:30	WG855836
p-Isopropyltoluene	U		0.000350	0.00100	0.00100	1	03/14/2016 20:30	WG855836
2-Butanone (MEK)	U		0.00393	0.0100	0.0100	1	03/14/2016 20:30	WG855836
Methylene Chloride	U		0.00100	0.00500	0.00500	1	03/14/2016 20:30	WG855836
4-Methyl-2-pentanone (MIBK)	U		0.00214	0.0100	0.0100	1	03/14/2016 20:30	WG855836
Methyl tert-butyl ether	U		0.000367	0.00100	0.00100	1	03/14/2016 20:30	WG855836
Naphthalene	U		0.00100	0.00500	0.00500	1	03/14/2016 20:30	WG855836
n-Propylbenzene	U		0.000349	0.00100	0.00100	1	03/14/2016 20:30	WG855836
Styrene	U		0.000307	0.00100	0.00100	1	03/14/2016 20:30	WG855836
1,1,2,2-Tetrachloroethane	U		0.000130	0.00100	0.00100	1	03/14/2016 20:30	WG855836

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Tetrachloroethene	U		0.000372	0.00100	0.00100	1	03/14/2016 20:30	WG855836
Toluene	U		0.000780	0.00500	0.00500	1	03/14/2016 20:30	WG855836
1,1,1-Trichloroethane	U		0.000319	0.00100	0.00100	1	03/14/2016 20:30	WG855836
1,1,2-Trichloroethane	U		0.000383	0.00100	0.00100	1	03/14/2016 20:30	WG855836
Trichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 20:30	WG855836
1,2,4-Trimethylbenzene	U		0.000373	0.00100	0.00100	1	03/14/2016 20:30	WG855836
1,3,5-Trimethylbenzene	U		0.000387	0.00100	0.00100	1	03/14/2016 20:30	WG855836
Vinyl chloride	U		0.000259	0.00100	0.00100	1	03/14/2016 20:30	WG855836
Xylenes, Total	U		0.00106	0.00300	0.00300	1	03/14/2016 20:30	WG855836
(S) Toluene-d8	*99.0*				*90.0-115*		*03/14/2016 20:30*	WG855836
(S) Dibromofluoromethane	*99.2*				*79.0-121*		*03/14/2016 20:30*	WG855836
(S) 4-Bromofluorobenzene	*104*				*80.1-120*		*03/14/2016 20:30*	WG855836

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Dissolved Solids	1170		2.82	10.0	10.0	1	03/13/2016 05:39	WG855632

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Alkalinity	171		2.61	20.0	20.0	1	03/18/2016 16:30	WG857120

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Nitrate-Nitrite	2.81		0.0197	0.100	0.100	1	03/17/2016 02:28	WG856707

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Chloride	297		1.04	1.00	20.0	20	03/11/2016 18:53	WG855551
Fluoride	0.749		0.00990	0.100	0.100	1	03/11/2016 17:06	WG855551
Sulfate	63.2		0.0774	5.00	5.00	1	03/11/2016 17:06	WG855551

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Nitrate-Nitrite	1.84	J6	0.0197	0.100	0.100	1	03/17/2016 02:29	WG856707

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Chloride	23.9		0.0519	1.00	1.00	1	03/11/2016 17:52	WG855551
Fluoride	1.32		0.00990	0.100	0.100	1	03/11/2016 17:52	WG855551
Sulfate	65.4		0.0774	5.00	5.00	1	03/11/2016 17:52	WG855551

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Dissolved Solids	465		2.82	10.0	10.0	1	03/14/2016 03:37	WG855633

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Alkalinity	202		2.61	20.0	20.0	1	03/20/2016 12:18	WG857121

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Nitrate-Nitrite	2.55		0.0197	0.100	0.100	1	03/17/2016 02:36	WG856707

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.37		1	03/11/2016 11:03	WG855566

Sample Narrative:

9040C L822693-09 WG855566: 7.37 at 20.9c

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	umhos/cm			date / time	
Specific Conductance	811		1	03/11/2016 12:24	WG855609

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Chloride	65.3		0.0519	1.00	1.00	1	03/11/2016 18:07	WG855551
Fluoride	0.722		0.00990	0.100	0.100	1	03/11/2016 18:07	WG855551
Sulfate	76.0		0.0774	5.00	5.00	1	03/11/2016 18:07	WG855551

Mercury by Method 7470A

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Mercury	U		0.0000490	0.000200	0.000200	1	03/14/2016 13:24	WG856130

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Aluminum,Dissolved	0.0150	J	0.00200	0.100	0.100	1	03/15/2016 02:18	WG855745
Arsenic,Dissolved	0.00259		0.000250	0.00200	0.00200	1	03/15/2016 02:18	WG855745
Barium,Dissolved	0.0739		0.000360	0.00500	0.00500	1	03/16/2016 15:34	WG856722
Boron,Dissolved	0.161		0.00150	0.0200	0.0200	1	03/15/2016 02:18	WG855745
Cadmium,Dissolved	U		0.000160	0.00100	0.00100	1	03/15/2016 02:18	WG855745
Chromium,Dissolved	U		0.000540	0.00200	0.00200	1	03/15/2016 02:18	WG855745
Copper,Dissolved	0.000717	J	0.000520	0.00500	0.00500	1	03/15/2016 02:18	WG855745
Cobalt,Dissolved	0.000315	J	0.000260	0.00200	0.00200	1	03/15/2016 02:18	WG855745
Iron,Dissolved	U		0.0150	0.100	0.100	1	03/15/2016 02:18	WG855745
Lead,Dissolved	U		0.000240	0.00200	0.00200	1	03/15/2016 02:18	WG855745
Manganese,Dissolved	0.0544		0.000250	0.00500	0.00500	1	03/15/2016 02:18	WG855745
Molybdenum,Dissolved	0.000749	J	0.000140	0.00500	0.00500	1	03/15/2016 02:18	WG855745

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	SDL mg/l	Unadj. MQL mg/l	MQL mg/l	Dilution	Analysis date / time	Batch
Nickel,Dissolved	0.00103	J	0.000350	0.00200	0.00200	1	03/15/2016 02:18	WG855745
Selenium,Dissolved	0.00185	J	0.000380	0.00200	0.00200	1	03/15/2016 02:18	WG855745
Silver,Dissolved	U		0.000310	0.00200	0.00200	1	03/15/2016 02:18	WG855745
Uranium,Dissolved	0.00666	J	0.000330	0.0100	0.0100	1	03/15/2016 02:18	WG855745
Zinc,Dissolved	0.00412	J	0.00256	0.0250	0.0250	1	03/15/2016 02:18	WG855745

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	SDL mg/l	Unadj. MQL mg/l	MQL mg/l	Dilution	Analysis date / time	Batch
Acetone	U		0.0100	1.00	1.00	1	03/14/2016 20:49	WG855836
Benzene	U		0.000331	0.00100	0.00100	1	03/14/2016 20:49	WG855836
Bromodichloromethane	U		0.000380	0.00125	0.00125	1	03/14/2016 20:49	WG855836
Bromoform	U		0.000469	0.00100	0.00100	1	03/14/2016 20:49	WG855836
Bromomethane	U		0.000866	0.00500	0.00500	1	03/14/2016 20:49	WG855836
n-Butylbenzene	U		0.000361	0.00100	0.00100	1	03/14/2016 20:49	WG855836
sec-Butylbenzene	U		0.000365	0.00100	0.00100	1	03/14/2016 20:49	WG855836
tert-Butylbenzene	U		0.000399	0.00100	0.00100	1	03/14/2016 20:49	WG855836
Carbon disulfide	U		0.000275	0.00100	0.00100	1	03/14/2016 20:49	WG855836
Carbon tetrachloride	U		0.000379	0.00100	0.00100	1	03/14/2016 20:49	WG855836
Chlorobenzene	U		0.000348	0.00100	0.00100	1	03/14/2016 20:49	WG855836
Chlorodibromomethane	U		0.000327	0.00100	0.00100	1	03/14/2016 20:49	WG855836
Chloroethane	U		0.000453	0.00500	0.00500	1	03/14/2016 20:49	WG855836
Chloroform	U		0.000324	0.00500	0.00500	1	03/14/2016 20:49	WG855836
Chloromethane	U		0.000276	0.00250	0.00250	1	03/14/2016 20:49	WG855836
1,2-Dibromoethane	U		0.000381	0.00100	0.00100	1	03/14/2016 20:49	WG855836
1,1-Dichloroethane	U		0.000259	0.00100	0.00100	1	03/14/2016 20:49	WG855836
1,2-Dichloroethane	U		0.000361	0.00100	0.00100	1	03/14/2016 20:49	WG855836
1,1-Dichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 20:49	WG855836
cis-1,2-Dichloroethene	U		0.000260	0.00100	0.00100	1	03/14/2016 20:49	WG855836
trans-1,2-Dichloroethene	U		0.000396	0.00100	0.00100	1	03/14/2016 20:49	WG855836
1,2-Dichloropropane	U		0.000306	0.00100	0.00100	1	03/14/2016 20:49	WG855836
cis-1,3-Dichloropropene	U		0.000418	0.00100	0.00100	1	03/14/2016 20:49	WG855836
trans-1,3-Dichloropropene	U		0.000419	0.00100	0.00100	1	03/14/2016 20:49	WG855836
Ethylbenzene	U		0.000384	0.00100	0.00100	1	03/14/2016 20:49	WG855836
Hexachloro-1,3-butadiene	U		0.000256	0.00100	0.00100	1	03/14/2016 20:49	WG855836
2-Hexanone	U		0.00382	0.0100	0.0100	1	03/14/2016 20:49	WG855836
Isopropylbenzene	U		0.000326	0.00100	0.00100	1	03/14/2016 20:49	WG855836
p-Isopropyltoluene	U		0.000350	0.00100	0.00100	1	03/14/2016 20:49	WG855836
2-Butanone (MEK)	U		0.00393	0.0100	0.0100	1	03/14/2016 20:49	WG855836
Methylene Chloride	U		0.00100	0.00500	0.00500	1	03/14/2016 20:49	WG855836
4-Methyl-2-pentanone (MIBK)	U		0.00214	0.0100	0.0100	1	03/14/2016 20:49	WG855836
Methyl tert-butyl ether	U		0.000367	0.00100	0.00100	1	03/14/2016 20:49	WG855836
Naphthalene	U		0.00100	0.00500	0.00500	1	03/14/2016 20:49	WG855836
n-Propylbenzene	U		0.000349	0.00100	0.00100	1	03/14/2016 20:49	WG855836
Styrene	U		0.000307	0.00100	0.00100	1	03/14/2016 20:49	WG855836
1,1,2,2-Tetrachloroethane	U		0.000130	0.00100	0.00100	1	03/14/2016 20:49	WG855836
Tetrachloroethene	U		0.000372	0.00100	0.00100	1	03/14/2016 20:49	WG855836
Toluene	U		0.000780	0.00500	0.00500	1	03/14/2016 20:49	WG855836
1,1,1-Trichloroethane	U		0.000319	0.00100	0.00100	1	03/14/2016 20:49	WG855836
1,1,2-Trichloroethane	U		0.000383	0.00100	0.00100	1	03/14/2016 20:49	WG855836
Trichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 20:49	WG855836
1,2,4-Trimethylbenzene	U		0.000373	0.00100	0.00100	1	03/14/2016 20:49	WG855836
1,3,5-Trimethylbenzene	U		0.000387	0.00100	0.00100	1	03/14/2016 20:49	WG855836
Vinyl chloride	U		0.000259	0.00100	0.00100	1	03/14/2016 20:49	WG855836
Xylenes, Total	U		0.00106	0.00300	0.00300	1	03/14/2016 20:49	WG855836
(S) Toluene-d8	*98.8*				*90.0-115*		*03/14/2016 20:49*	WG855836

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	SDL mg/l	Unadj. MQL mg/l	MQL mg/l	Dilution	Analysis date / time	Batch
(S) Dibromofluoromethane	*99.8*				*79.0-121*		*03/14/2016 20:49*	WG855836
(S) 4-Bromofluorobenzene	*104*				*80.1-120*		*03/14/2016 20:49*	WG855836

Semi Volatile Organic Compounds (GC/MS) by Method 8270 C

Analyte	Result mg/l	Qualifier	SDL mg/l	Unadj. MQL mg/l	MQL mg/l	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.000316	0.00100	0.00100	1	03/14/2016 17:57	WG856165
Acenaphthylene	U		0.000309	0.00100	0.00100	1	03/14/2016 17:57	WG856165
Acetophenone	U		0.00247	0.0100	0.0100	1	03/14/2016 17:57	WG856165
Anthracene	U		0.000291	0.00100	0.00100	1	03/14/2016 17:57	WG856165
Atrazine	U		0.000260	0.0100	0.0100	1	03/14/2016 17:57	WG856165
Benzo(a)anthracene	U		0.0000510	0.00100	0.00100	1	03/14/2016 17:57	WG856165
Benzaldehyde	U		0.00140	0.0100	0.0100	1	03/14/2016 17:57	WG856165
Benzo(b)fluoranthene	U		0.0000896	0.00100	0.00100	1	03/14/2016 17:57	WG856165
Benzo(k)fluoranthene	U		0.000355	0.00100	0.00100	1	03/14/2016 17:57	WG856165
Benzo(g,h,i)perylene	U		0.00000227	0.00100	0.00100	1	03/14/2016 17:57	WG856165
Benzo(a)pyrene	U		0.0000381	0.000200	0.000200	1	03/14/2016 17:57	WG856165
Biphenyl	U		0.000325	0.0100	0.0100	1	03/14/2016 17:57	WG856165
Bis(2-chlorethoxy)methane	U		0.000329	0.0100	0.0100	1	03/14/2016 17:57	WG856165
Bis(2-chloroethyl)ether	U		0.00162	0.0100	0.0100	1	03/14/2016 17:57	WG856165
Bis(2-chloroisopropyl)ether	U		0.000445	0.0100	0.0100	1	03/14/2016 17:57	WG856165
4-Bromophenyl-phenylether	U		0.000335	0.0100	0.0100	1	03/14/2016 17:57	WG856165
2-Chloronaphthalene	U		0.000330	0.00100	0.00100	1	03/14/2016 17:57	WG856165
4-Chlorophenyl-phenylether	U		0.000303	0.0100	0.0100	1	03/14/2016 17:57	WG856165
Caprolactam	U		0.00259	0.0100	0.0100	1	03/14/2016 17:57	WG856165
Carbazole	U		0.000260	0.0100	0.0100	1	03/14/2016 17:57	WG856165
Chrysene	U		0.000332	0.00100	0.00100	1	03/14/2016 17:57	WG856165
Dibenz(a,h)anthracene	U		0.0000644	0.000200	0.000200	1	03/14/2016 17:57	WG856165
Dibenzofuran	U		0.000338	0.0100	0.0100	1	03/14/2016 17:57	WG856165
3,3-Dichlorobenzidine	U		0.00202	0.0100	0.0100	1	03/14/2016 17:57	WG856165
2,4-Dinitrotoluene	U		0.00165	0.0100	0.0100	1	03/14/2016 17:57	WG856165
2,6-Dinitrotoluene	U		0.000279	0.0100	0.0100	1	03/14/2016 17:57	WG856165
Fluoranthene	U		0.000310	0.00100	0.00100	1	03/14/2016 17:57	WG856165
Fluorene	U		0.000323	0.00100	0.00100	1	03/14/2016 17:57	WG856165
Hexachlorobenzene	U		0.000341	0.00100	0.00100	1	03/14/2016 17:57	WG856165
Hexachloro-1,3-butadiene	U		0.000329	0.0100	0.0100	1	03/14/2016 17:57	WG856165
Hexachlorocyclopentadiene	U		0.00233	0.0100	0.0100	1	03/14/2016 17:57	WG856165
Hexachloroethane	U		0.000365	0.0100	0.0100	1	03/14/2016 17:57	WG856165
Indeno(1,2,3-cd)pyrene	U		0.000279	0.00100	0.00100	1	03/14/2016 17:57	WG856165
Isophorone	U		0.000272	0.0100	0.0100	1	03/14/2016 17:57	WG856165
1-Methylnaphthalene	U		0.000332	0.00100	0.00100	1	03/14/2016 17:57	WG856165
2-Methylnaphthalene	U		0.000311	0.00100	0.00100	1	03/14/2016 17:57	WG856165
Naphthalene	U		0.000372	0.00100	0.00100	1	03/14/2016 17:57	WG856165
Nitrobenzene	U		0.000367	0.0100	0.0100	1	03/14/2016 17:57	WG856165
n-Nitrosodiphenylamine	U		0.000304	0.0100	0.0100	1	03/14/2016 17:57	WG856165
n-Nitrosodi-n-propylamine	U		0.000403	0.0100	0.0100	1	03/14/2016 17:57	WG856165
Phenanthrene	U		0.000366	0.00100	0.00100	1	03/14/2016 17:57	WG856165
Benzylbutyl phthalate	U		0.000275	0.00300	0.00300	1	03/14/2016 17:57	WG856165
Bis(2-ethylhexyl)phthalate	0.00296	J	0.000709	0.00300	0.00300	1	03/14/2016 17:57	WG856165
Di-n-butyl phthalate	U		0.000266	0.00300	0.00300	1	03/14/2016 17:57	WG856165
Diethyl phthalate	U		0.000282	0.00300	0.00300	1	03/14/2016 17:57	WG856165
Dimethyl phthalate	U		0.000283	0.00300	0.00300	1	03/14/2016 17:57	WG856165
Di-n-octyl phthalate	U		0.000278	0.00300	0.00300	1	03/14/2016 17:57	WG856165
Pyrene	U		0.000330	0.00100	0.00100	1	03/14/2016 17:57	WG856165
1,2,4-Trichlorobenzene	U		0.000355	0.0100	0.0100	1	03/14/2016 17:57	WG856165
4-Chloro-3-methylphenol	U		0.000263	0.0100	0.0100	1	03/14/2016 17:57	WG856165

Semi Volatile Organic Compounds (GC/MS) by Method 8270 C

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
2-Chlorophenol	U		0.000283	0.0100	0.0100	1	03/14/2016 17:57	WG856165
2,4-Dichlorophenol	U		0.000284	0.0100	0.0100	1	03/14/2016 17:57	WG856165
2,4-Dimethylphenol	U		0.000624	0.0100	0.0100	1	03/14/2016 17:57	WG856165
4,6-Dinitro-2-methylphenol	U		0.00262	0.0100	0.0100	1	03/14/2016 17:57	WG856165
2,4-Dinitrophenol	U		0.00325	0.0100	0.0100	1	03/14/2016 17:57	WG856165
2-Nitrophenol	U		0.000320	0.0100	0.0100	1	03/14/2016 17:57	WG856165
2-Nitroaniline	U		0.00190	0.0100	0.0100	1	03/14/2016 17:57	WG856165
2-Methylphenol	U		0.000312	0.0100	0.0100	1	03/14/2016 17:57	WG856165
3&4-Methyl Phenol	U		0.000266	0.0100	0.0100	1	03/14/2016 17:57	WG856165
3-Nitroaniline	U		0.000308	0.0100	0.0100	1	03/14/2016 17:57	WG856165
4-Chloroaniline	U		0.000382	0.0100	0.0100	1	03/14/2016 17:57	WG856165
4-Nitroaniline	U		0.000349	0.0100	0.0100	1	03/14/2016 17:57	WG856165
4-Nitrophenol	U		0.00201	0.0100	0.0100	1	03/14/2016 17:57	WG856165
Pentachlorophenol	U		0.000313	0.0100	0.0100	1	03/14/2016 17:57	WG856165
Phenol	U		0.000334	0.0100	0.0100	1	03/14/2016 17:57	WG856165
2,4,5-Trichlorophenol	U		0.000236	0.0100	0.0100	1	03/14/2016 17:57	WG856165
2,4,6-Trichlorophenol	U		0.000297	0.0100	0.0100	1	03/14/2016 17:57	WG856165
(S) 2-Fluorophenol	*38.1*				*10.0-77.9*		*03/14/2016 17:57*	WG856165
(S) Phenol-d5	*27.1*				*5.00-70.1*		*03/14/2016 17:57*	WG856165
(S) Nitrobenzene-d5	*50.4*				*21.8-123*		*03/14/2016 17:57*	WG856165
(S) 2-Fluorobiphenyl	*55.8*				*29.5-131*		*03/14/2016 17:57*	WG856165
(S) 2,4,6-Tribromophenol	*48.2*				*11.2-130*		*03/14/2016 17:57*	WG856165
(S) p-Terphenyl-d14	*65.0*				*29.3-137*		*03/14/2016 17:57*	WG856165

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Dissolved Solids	450		2.82	10.0	10.0	1	03/14/2016 03:37	WG855633

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Alkalinity	170		2.61	20.0	20.0	1	03/20/2016 12:26	WG857121

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Nitrate-Nitrite	3.53		0.0197	0.100	0.100	1	03/17/2016 02:37	WG856707

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.47		1	03/11/2016 11:03	WG855566

Sample Narrative:

9040C L822693-10 WG855566: 7.47 at 21.0c

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	umhos/cm			date / time	
Specific Conductance	778		1	03/11/2016 12:24	WG855609

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Chloride	70.6		0.0519	1.00	1.00	1	03/12/2016 06:32	WG855865
Fluoride	1.30		0.00990	0.100	0.100	1	03/12/2016 06:32	WG855865
Sulfate	83.0		0.0774	5.00	5.00	1	03/12/2016 06:32	WG855865

Mercury by Method 7470A

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Mercury	U		0.0000490	0.000200	0.000200	1	03/14/2016 13:27	WG856130

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Aluminum,Dissolved	0.00402	J	0.00200	0.100	0.100	1	03/15/2016 02:33	WG855745
Arsenic,Dissolved	0.00375		0.000250	0.00200	0.00200	1	03/15/2016 02:33	WG855745
Barium,Dissolved	0.0711		0.000360	0.00500	0.00500	1	03/16/2016 15:39	WG856722
Boron,Dissolved	0.152		0.00150	0.0200	0.0200	1	03/15/2016 02:33	WG855745
Cadmium,Dissolved	U		0.000160	0.00100	0.00100	1	03/15/2016 02:33	WG855745
Chromium,Dissolved	0.00320		0.000540	0.00200	0.00200	1	03/15/2016 02:33	WG855745
Copper,Dissolved	0.000933	J	0.000520	0.00500	0.00500	1	03/15/2016 02:33	WG855745
Cobalt,Dissolved	U		0.000260	0.00200	0.00200	1	03/15/2016 02:33	WG855745
Iron,Dissolved	U		0.0150	0.100	0.100	1	03/15/2016 02:33	WG855745
Lead,Dissolved	U		0.000240	0.00200	0.00200	1	03/15/2016 02:33	WG855745
Manganese,Dissolved	0.000911	J	0.000250	0.00500	0.00500	1	03/15/2016 02:33	WG855745
Molybdenum,Dissolved	0.00219	J	0.000140	0.00500	0.00500	1	03/15/2016 02:33	WG855745

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	SDL mg/l	Unadj. MQL mg/l	MQL mg/l	Dilution	Analysis date / time	Batch
Nickel,Dissolved	0.000955	J	0.000350	0.00200	0.00200	1	03/15/2016 02:33	WG855745
Selenium,Dissolved	0.00253		0.000380	0.00200	0.00200	1	03/15/2016 02:33	WG855745
Silver,Dissolved	U		0.000310	0.00200	0.00200	1	03/15/2016 02:33	WG855745
Uranium,Dissolved	0.00187	J	0.000330	0.0100	0.0100	1	03/15/2016 02:33	WG855745
Zinc,Dissolved	U		0.00256	0.0250	0.0250	1	03/15/2016 02:33	WG855745

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	SDL mg/l	Unadj. MQL mg/l	MQL mg/l	Dilution	Analysis date / time	Batch
Acetone	U		0.0100	1.00	1.00	1	03/14/2016 21:07	WG855836
Benzene	U		0.000331	0.00100	0.00100	1	03/14/2016 21:07	WG855836
Bromodichloromethane	U		0.000380	0.00125	0.00125	1	03/14/2016 21:07	WG855836
Bromoform	U		0.000469	0.00100	0.00100	1	03/14/2016 21:07	WG855836
Bromomethane	U		0.000866	0.00500	0.00500	1	03/14/2016 21:07	WG855836
n-Butylbenzene	U		0.000361	0.00100	0.00100	1	03/14/2016 21:07	WG855836
sec-Butylbenzene	U		0.000365	0.00100	0.00100	1	03/14/2016 21:07	WG855836
tert-Butylbenzene	U		0.000399	0.00100	0.00100	1	03/14/2016 21:07	WG855836
Carbon disulfide	U		0.000275	0.00100	0.00100	1	03/14/2016 21:07	WG855836
Carbon tetrachloride	U		0.000379	0.00100	0.00100	1	03/14/2016 21:07	WG855836
Chlorobenzene	U		0.000348	0.00100	0.00100	1	03/14/2016 21:07	WG855836
Chlorodibromomethane	U		0.000327	0.00100	0.00100	1	03/14/2016 21:07	WG855836
Chloroethane	U		0.000453	0.00500	0.00500	1	03/14/2016 21:07	WG855836
Chloroform	0.000964	J	0.000324	0.00500	0.00500	1	03/14/2016 21:07	WG855836
Chloromethane	U		0.000276	0.00250	0.00250	1	03/14/2016 21:07	WG855836
1,2-Dibromoethane	U		0.000381	0.00100	0.00100	1	03/14/2016 21:07	WG855836
1,1-Dichloroethane	U		0.000259	0.00100	0.00100	1	03/14/2016 21:07	WG855836
1,2-Dichloroethane	U		0.000361	0.00100	0.00100	1	03/14/2016 21:07	WG855836
1,1-Dichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 21:07	WG855836
cis-1,2-Dichloroethene	U		0.000260	0.00100	0.00100	1	03/14/2016 21:07	WG855836
trans-1,2-Dichloroethene	U		0.000396	0.00100	0.00100	1	03/14/2016 21:07	WG855836
1,2-Dichloropropane	U		0.000306	0.00100	0.00100	1	03/14/2016 21:07	WG855836
cis-1,3-Dichloropropene	U		0.000418	0.00100	0.00100	1	03/14/2016 21:07	WG855836
trans-1,3-Dichloropropene	U		0.000419	0.00100	0.00100	1	03/14/2016 21:07	WG855836
Ethylbenzene	U		0.000384	0.00100	0.00100	1	03/14/2016 21:07	WG855836
Hexachloro-1,3-butadiene	U		0.000256	0.00100	0.00100	1	03/14/2016 21:07	WG855836
2-Hexanone	U		0.00382	0.0100	0.0100	1	03/14/2016 21:07	WG855836
Isopropylbenzene	U		0.000326	0.00100	0.00100	1	03/14/2016 21:07	WG855836
p-Isopropyltoluene	U		0.000350	0.00100	0.00100	1	03/14/2016 21:07	WG855836
2-Butanone (MEK)	U		0.00393	0.0100	0.0100	1	03/14/2016 21:07	WG855836
Methylene Chloride	U		0.00100	0.00500	0.00500	1	03/14/2016 21:07	WG855836
4-Methyl-2-pentanone (MIBK)	U		0.00214	0.0100	0.0100	1	03/14/2016 21:07	WG855836
Methyl tert-butyl ether	U		0.000367	0.00100	0.00100	1	03/14/2016 21:07	WG855836
Naphthalene	U		0.00100	0.00500	0.00500	1	03/14/2016 21:07	WG855836
n-Propylbenzene	U		0.000349	0.00100	0.00100	1	03/14/2016 21:07	WG855836
Styrene	U		0.000307	0.00100	0.00100	1	03/14/2016 21:07	WG855836
1,1,2,2-Tetrachloroethane	U		0.000130	0.00100	0.00100	1	03/14/2016 21:07	WG855836
Tetrachloroethene	U		0.000372	0.00100	0.00100	1	03/14/2016 21:07	WG855836
Toluene	U		0.000780	0.00500	0.00500	1	03/14/2016 21:07	WG855836
1,1,1-Trichloroethane	U		0.000319	0.00100	0.00100	1	03/14/2016 21:07	WG855836
1,1,2-Trichloroethane	U		0.000383	0.00100	0.00100	1	03/14/2016 21:07	WG855836
Trichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 21:07	WG855836
1,2,4-Trimethylbenzene	U		0.000373	0.00100	0.00100	1	03/14/2016 21:07	WG855836
1,3,5-Trimethylbenzene	U		0.000387	0.00100	0.00100	1	03/14/2016 21:07	WG855836
Vinyl chloride	U		0.000259	0.00100	0.00100	1	03/14/2016 21:07	WG855836
Xylenes, Total	U		0.00106	0.00300	0.00300	1	03/14/2016 21:07	WG855836
(S) Toluene-d8	*99.0*				*90.0-115*		*03/14/2016 21:07*	WG855836

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	SDL mg/l	Unadj. MQL mg/l	MQL mg/l	Dilution	Analysis date / time	Batch
(S) Dibromofluoromethane	*97.5*				*79.0-121*		*03/14/2016 21:07*	WG855836
(S) 4-Bromofluorobenzene	*102*				*80.1-120*		*03/14/2016 21:07*	WG855836

Semi Volatile Organic Compounds (GC/MS) by Method 8270 C

Analyte	Result mg/l	Qualifier	SDL mg/l	Unadj. MQL mg/l	MQL mg/l	Dilution	Analysis date / time	Batch
Acenaphthene	U		0.000316	0.00100	0.00100	1	03/14/2016 18:21	WG856165
Acenaphthylene	U		0.000309	0.00100	0.00100	1	03/14/2016 18:21	WG856165
Acetophenone	U		0.00247	0.0100	0.0100	1	03/14/2016 18:21	WG856165
Anthracene	U		0.000291	0.00100	0.00100	1	03/14/2016 18:21	WG856165
Atrazine	U		0.000260	0.0100	0.0100	1	03/14/2016 18:21	WG856165
Benzo(a)anthracene	U		0.0000510	0.00100	0.00100	1	03/14/2016 18:21	WG856165
Benzaldehyde	U		0.00140	0.0100	0.0100	1	03/14/2016 18:21	WG856165
Benzo(b)fluoranthene	U		0.0000896	0.00100	0.00100	1	03/14/2016 18:21	WG856165
Benzo(k)fluoranthene	U		0.000355	0.00100	0.00100	1	03/14/2016 18:21	WG856165
Benzo(g,h,i)perylene	U		0.00000227	0.00100	0.00100	1	03/14/2016 18:21	WG856165
Benzo(a)pyrene	U		0.0000381	0.000200	0.000200	1	03/14/2016 18:21	WG856165
Biphenyl	U		0.000325	0.0100	0.0100	1	03/14/2016 18:21	WG856165
Bis(2-chlorethoxy)methane	U		0.000329	0.0100	0.0100	1	03/14/2016 18:21	WG856165
Bis(2-chloroethyl)ether	U		0.00162	0.0100	0.0100	1	03/14/2016 18:21	WG856165
Bis(2-chloroisopropyl)ether	U		0.000445	0.0100	0.0100	1	03/14/2016 18:21	WG856165
4-Bromophenyl-phenylether	U		0.000335	0.0100	0.0100	1	03/14/2016 18:21	WG856165
2-Chloronaphthalene	U		0.000330	0.00100	0.00100	1	03/14/2016 18:21	WG856165
4-Chlorophenyl-phenylether	U		0.000303	0.0100	0.0100	1	03/14/2016 18:21	WG856165
Caprolactam	U		0.00259	0.0100	0.0100	1	03/14/2016 18:21	WG856165
Carbazole	U		0.000260	0.0100	0.0100	1	03/14/2016 18:21	WG856165
Chrysene	U		0.000332	0.00100	0.00100	1	03/14/2016 18:21	WG856165
Dibenz(a,h)anthracene	U		0.0000644	0.000200	0.000200	1	03/14/2016 18:21	WG856165
Dibenzofuran	U		0.000338	0.0100	0.0100	1	03/14/2016 18:21	WG856165
3,3-Dichlorobenzidine	U		0.00202	0.0100	0.0100	1	03/14/2016 18:21	WG856165
2,4-Dinitrotoluene	U		0.00165	0.0100	0.0100	1	03/14/2016 18:21	WG856165
2,6-Dinitrotoluene	U		0.000279	0.0100	0.0100	1	03/14/2016 18:21	WG856165
Fluoranthene	U		0.000310	0.00100	0.00100	1	03/14/2016 18:21	WG856165
Fluorene	U		0.000323	0.00100	0.00100	1	03/14/2016 18:21	WG856165
Hexachlorobenzene	U		0.000341	0.00100	0.00100	1	03/14/2016 18:21	WG856165
Hexachloro-1,3-butadiene	U		0.000329	0.0100	0.0100	1	03/14/2016 18:21	WG856165
Hexachlorocyclopentadiene	U		0.00233	0.0100	0.0100	1	03/14/2016 18:21	WG856165
Hexachloroethane	U		0.000365	0.0100	0.0100	1	03/14/2016 18:21	WG856165
Indeno(1,2,3-cd)pyrene	U		0.000279	0.00100	0.00100	1	03/14/2016 18:21	WG856165
Isophorone	U		0.000272	0.0100	0.0100	1	03/14/2016 18:21	WG856165
1-Methylnaphthalene	U		0.000332	0.00100	0.00100	1	03/14/2016 18:21	WG856165
2-Methylnaphthalene	U		0.000311	0.00100	0.00100	1	03/14/2016 18:21	WG856165
Naphthalene	U		0.000372	0.00100	0.00100	1	03/14/2016 18:21	WG856165
Nitrobenzene	U		0.000367	0.0100	0.0100	1	03/14/2016 18:21	WG856165
n-Nitrosodiphenylamine	U		0.000304	0.0100	0.0100	1	03/14/2016 18:21	WG856165
n-Nitrosodi-n-propylamine	U		0.000403	0.0100	0.0100	1	03/14/2016 18:21	WG856165
Phenanthrene	U		0.000366	0.00100	0.00100	1	03/14/2016 18:21	WG856165
Benzylbutyl phthalate	U		0.000275	0.00300	0.00300	1	03/14/2016 18:21	WG856165
Bis(2-ethylhexyl)phthalate	U		0.000709	0.00300	0.00300	1	03/14/2016 18:21	WG856165
Di-n-butyl phthalate	U		0.000266	0.00300	0.00300	1	03/14/2016 18:21	WG856165
Diethyl phthalate	U		0.000282	0.00300	0.00300	1	03/14/2016 18:21	WG856165
Dimethyl phthalate	U		0.000283	0.00300	0.00300	1	03/14/2016 18:21	WG856165
Di-n-octyl phthalate	U		0.000278	0.00300	0.00300	1	03/14/2016 18:21	WG856165
Pyrene	U		0.000330	0.00100	0.00100	1	03/14/2016 18:21	WG856165
1,2,4-Trichlorobenzene	U		0.000355	0.0100	0.0100	1	03/14/2016 18:21	WG856165
4-Chloro-3-methylphenol	U		0.000263	0.0100	0.0100	1	03/14/2016 18:21	WG856165

Semi Volatile Organic Compounds (GC/MS) by Method 8270 C

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
2-Chlorophenol	U		0.000283	0.0100	0.0100	1	03/14/2016 18:21	WG856165
2,4-Dichlorophenol	U		0.000284	0.0100	0.0100	1	03/14/2016 18:21	WG856165
2,4-Dimethylphenol	U		0.000624	0.0100	0.0100	1	03/14/2016 18:21	WG856165
4,6-Dinitro-2-methylphenol	U		0.00262	0.0100	0.0100	1	03/14/2016 18:21	WG856165
2,4-Dinitrophenol	U		0.00325	0.0100	0.0100	1	03/14/2016 18:21	WG856165
2-Nitrophenol	U		0.000320	0.0100	0.0100	1	03/14/2016 18:21	WG856165
2-Nitroaniline	U		0.00190	0.0100	0.0100	1	03/14/2016 18:21	WG856165
2-Methylphenol	U		0.000312	0.0100	0.0100	1	03/14/2016 18:21	WG856165
3&4-Methyl Phenol	U		0.000266	0.0100	0.0100	1	03/14/2016 18:21	WG856165
3-Nitroaniline	U		0.000308	0.0100	0.0100	1	03/14/2016 18:21	WG856165
4-Chloroaniline	U		0.000382	0.0100	0.0100	1	03/14/2016 18:21	WG856165
4-Nitroaniline	U		0.000349	0.0100	0.0100	1	03/14/2016 18:21	WG856165
4-Nitrophenol	U		0.00201	0.0100	0.0100	1	03/14/2016 18:21	WG856165
Pentachlorophenol	U		0.000313	0.0100	0.0100	1	03/14/2016 18:21	WG856165
Phenol	U		0.000334	0.0100	0.0100	1	03/14/2016 18:21	WG856165
2,4,5-Trichlorophenol	U		0.000236	0.0100	0.0100	1	03/14/2016 18:21	WG856165
2,4,6-Trichlorophenol	U		0.000297	0.0100	0.0100	1	03/14/2016 18:21	WG856165
(S) 2-Fluorophenol	*38.1*				*10.0-77.9*		*03/14/2016 18:21*	WG856165
(S) Phenol-d5	*29.4*				*5.00-70.1*		*03/14/2016 18:21*	WG856165
(S) Nitrobenzene-d5	*51.7*				*21.8-123*		*03/14/2016 18:21*	WG856165
(S) 2-Fluorobiphenyl	*61.1*				*29.5-131*		*03/14/2016 18:21*	WG856165
(S) 2,4,6-Tribromophenol	*51.1*				*11.2-130*		*03/14/2016 18:21*	WG856165
(S) p-Terphenyl-d14	*66.1*				*29.3-137*		*03/14/2016 18:21*	WG856165

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Dissolved Solids	464		2.82	10.0	10.0	1	03/14/2016 03:37	WG855633

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Alkalinity	170		2.61	20.0	20.0	1	03/20/2016 12:34	WG857121

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Nitrate-Nitrite	3.54		0.0197	0.100	0.100	1	03/17/2016 02:38	WG856707

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	su			date / time	
pH	7.42		1	03/11/2016 11:03	WG855566

Sample Narrative:

9040C L822693-11 WG855566: 7.42 at 20.8c

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	umhos/cm			date / time	
Specific Conductance	766		1	03/11/2016 12:24	WG855609

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Chloride	70.4		0.0519	1.00	1.00	1	03/12/2016 07:05	WG855865
Fluoride	1.30		0.00990	0.100	0.100	1	03/12/2016 07:05	WG855865
Sulfate	83.0		0.0774	5.00	5.00	1	03/12/2016 07:05	WG855865

Mercury by Method 7470A

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Mercury	U		0.0000490	0.000200	0.000200	1	03/14/2016 13:35	WG856130

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Aluminum,Dissolved	0.00986	J	0.00200	0.100	0.100	1	03/15/2016 02:38	WG855745
Arsenic,Dissolved	0.00457		0.000250	0.00200	0.00200	1	03/15/2016 02:38	WG855745
Barium,Dissolved	0.0710		0.000360	0.00500	0.00500	1	03/16/2016 15:53	WG856722
Boron,Dissolved	0.154		0.00150	0.0200	0.0200	1	03/15/2016 02:38	WG855745
Cadmium,Dissolved	U		0.000160	0.00100	0.00100	1	03/15/2016 02:38	WG855745
Chromium,Dissolved	0.00148	J	0.000540	0.00200	0.00200	1	03/15/2016 02:38	WG855745
Copper,Dissolved	0.00123	J	0.000520	0.00500	0.00500	1	03/15/2016 02:38	WG855745
Cobalt,Dissolved	U		0.000260	0.00200	0.00200	1	03/15/2016 02:38	WG855745
Iron,Dissolved	U		0.0150	0.100	0.100	1	03/15/2016 02:38	WG855745
Lead,Dissolved	0.000299	J	0.000240	0.00200	0.00200	1	03/15/2016 02:38	WG855745
Manganese,Dissolved	0.000664	J	0.000250	0.00500	0.00500	1	03/15/2016 02:38	WG855745
Molybdenum,Dissolved	0.00479	J	0.000140	0.00500	0.00500	1	03/15/2016 02:38	WG855745

Metals (ICPMS) by Method 6020

Analyte	Result mg/l	Qualifier	SDL mg/l	Unadj. MQL mg/l	MQL mg/l	Dilution	Analysis date / time	Batch
Nickel,Dissolved	0.000797	J	0.000350	0.00200	0.00200	1	03/15/2016 02:38	WG855745
Selenium,Dissolved	0.00175	J	0.000380	0.00200	0.00200	1	03/15/2016 02:38	WG855745
Silver,Dissolved	0.000842	J	0.000310	0.00200	0.00200	1	03/15/2016 02:38	WG855745
Uranium,Dissolved	0.00197	J	0.000330	0.0100	0.0100	1	03/15/2016 02:38	WG855745
Zinc,Dissolved	0.00268	J	0.00256	0.0250	0.0250	1	03/15/2016 02:38	WG855745

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	SDL mg/l	Unadj. MQL mg/l	MQL mg/l	Dilution	Analysis date / time	Batch
Acetone	U		0.0100	1.00	1.00	1	03/14/2016 21:25	WG855836
Benzene	U		0.000331	0.00100	0.00100	1	03/14/2016 21:25	WG855836
Bromodichloromethane	U		0.000380	0.00125	0.00125	1	03/14/2016 21:25	WG855836
Bromoform	U		0.000469	0.00100	0.00100	1	03/14/2016 21:25	WG855836
Bromomethane	U		0.000866	0.00500	0.00500	1	03/14/2016 21:25	WG855836
n-Butylbenzene	U		0.000361	0.00100	0.00100	1	03/14/2016 21:25	WG855836
sec-Butylbenzene	U		0.000365	0.00100	0.00100	1	03/14/2016 21:25	WG855836
tert-Butylbenzene	U		0.000399	0.00100	0.00100	1	03/14/2016 21:25	WG855836
Carbon disulfide	U		0.000275	0.00100	0.00100	1	03/14/2016 21:25	WG855836
Carbon tetrachloride	U		0.000379	0.00100	0.00100	1	03/14/2016 21:25	WG855836
Chlorobenzene	U		0.000348	0.00100	0.00100	1	03/14/2016 21:25	WG855836
Chlorodibromomethane	U		0.000327	0.00100	0.00100	1	03/14/2016 21:25	WG855836
Chloroethane	U		0.000453	0.00500	0.00500	1	03/14/2016 21:25	WG855836
Chloroform	0.000911	J	0.000324	0.00500	0.00500	1	03/14/2016 21:25	WG855836
Chloromethane	U		0.000276	0.00250	0.00250	1	03/14/2016 21:25	WG855836
1,2-Dibromoethane	U		0.000381	0.00100	0.00100	1	03/14/2016 21:25	WG855836
1,1-Dichloroethane	U		0.000259	0.00100	0.00100	1	03/14/2016 21:25	WG855836
1,2-Dichloroethane	U		0.000361	0.00100	0.00100	1	03/14/2016 21:25	WG855836
1,1-Dichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 21:25	WG855836
cis-1,2-Dichloroethene	U		0.000260	0.00100	0.00100	1	03/14/2016 21:25	WG855836
trans-1,2-Dichloroethene	U		0.000396	0.00100	0.00100	1	03/14/2016 21:25	WG855836
1,2-Dichloropropane	U		0.000306	0.00100	0.00100	1	03/14/2016 21:25	WG855836
cis-1,3-Dichloropropene	U		0.000418	0.00100	0.00100	1	03/14/2016 21:25	WG855836
trans-1,3-Dichloropropene	U		0.000419	0.00100	0.00100	1	03/14/2016 21:25	WG855836
Ethylbenzene	U		0.000384	0.00100	0.00100	1	03/14/2016 21:25	WG855836
Hexachloro-1,3-butadiene	U		0.000256	0.00100	0.00100	1	03/14/2016 21:25	WG855836
2-Hexanone	U		0.00382	0.0100	0.0100	1	03/14/2016 21:25	WG855836
Isopropylbenzene	U		0.000326	0.00100	0.00100	1	03/14/2016 21:25	WG855836
p-Isopropyltoluene	U		0.000350	0.00100	0.00100	1	03/14/2016 21:25	WG855836
2-Butanone (MEK)	U		0.00393	0.0100	0.0100	1	03/14/2016 21:25	WG855836
Methylene Chloride	U		0.00100	0.00500	0.00500	1	03/14/2016 21:25	WG855836
4-Methyl-2-pentanone (MIBK)	U		0.00214	0.0100	0.0100	1	03/14/2016 21:25	WG855836
Methyl tert-butyl ether	U		0.000367	0.00100	0.00100	1	03/14/2016 21:25	WG855836
Naphthalene	U		0.00100	0.00500	0.00500	1	03/14/2016 21:25	WG855836
n-Propylbenzene	U		0.000349	0.00100	0.00100	1	03/14/2016 21:25	WG855836
Styrene	U		0.000307	0.00100	0.00100	1	03/14/2016 21:25	WG855836
1,1,2,2-Tetrachloroethane	U		0.000130	0.00100	0.00100	1	03/14/2016 21:25	WG855836
Tetrachloroethene	U		0.000372	0.00100	0.00100	1	03/14/2016 21:25	WG855836
Toluene	U		0.000780	0.00500	0.00500	1	03/14/2016 21:25	WG855836
1,1,1-Trichloroethane	U		0.000319	0.00100	0.00100	1	03/14/2016 21:25	WG855836
1,1,2-Trichloroethane	U		0.000383	0.00100	0.00100	1	03/14/2016 21:25	WG855836
Trichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 21:25	WG855836
1,2,4-Trimethylbenzene	U		0.000373	0.00100	0.00100	1	03/14/2016 21:25	WG855836
1,3,5-Trimethylbenzene	U		0.000387	0.00100	0.00100	1	03/14/2016 21:25	WG855836
Vinyl chloride	U		0.000259	0.00100	0.00100	1	03/14/2016 21:25	WG855836
Xylenes, Total	U		0.00106	0.00300	0.00300	1	03/14/2016 21:25	WG855836
(S) Toluene-d8	*105*				*90.0-115*		*03/14/2016 21:25*	WG855836

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
(S) Dibromofluoromethane	*98.0*				*79.0-121*		*03/14/2016 21:25*	WG855836
(S) 4-Bromofluorobenzene	*99.7*				*80.1-120*		*03/14/2016 21:25*	WG855836

Semi Volatile Organic Compounds (GC/MS) by Method 8270 C

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Acenaphthene	U		0.000316	0.00100	0.00100	1	03/14/2016 18:44	WG856165
Acenaphthylene	U		0.000309	0.00100	0.00100	1	03/14/2016 18:44	WG856165
Acetophenone	U		0.00247	0.0100	0.0100	1	03/14/2016 18:44	WG856165
Anthracene	U		0.000291	0.00100	0.00100	1	03/14/2016 18:44	WG856165
Atrazine	U		0.000260	0.0100	0.0100	1	03/14/2016 18:44	WG856165
Benzo(a)anthracene	U		0.0000510	0.00100	0.00100	1	03/14/2016 18:44	WG856165
Benzaldehyde	U		0.00140	0.0100	0.0100	1	03/14/2016 18:44	WG856165
Benzo(b)fluoranthene	U		0.0000896	0.00100	0.00100	1	03/14/2016 18:44	WG856165
Benzo(k)fluoranthene	U		0.000355	0.00100	0.00100	1	03/14/2016 18:44	WG856165
Benzo(g,h,i)perylene	U		0.00000227	0.00100	0.00100	1	03/14/2016 18:44	WG856165
Benzo(a)pyrene	U		0.0000381	0.000200	0.000200	1	03/14/2016 18:44	WG856165
Biphenyl	U		0.000325	0.0100	0.0100	1	03/14/2016 18:44	WG856165
Bis(2-chlorethoxy)methane	U		0.000329	0.0100	0.0100	1	03/14/2016 18:44	WG856165
Bis(2-chloroethyl)ether	U		0.00162	0.0100	0.0100	1	03/14/2016 18:44	WG856165
Bis(2-chloroisopropyl)ether	U		0.000445	0.0100	0.0100	1	03/14/2016 18:44	WG856165
4-Bromophenyl-phenylether	U		0.000335	0.0100	0.0100	1	03/14/2016 18:44	WG856165
2-Chloronaphthalene	U		0.000330	0.00100	0.00100	1	03/14/2016 18:44	WG856165
4-Chlorophenyl-phenylether	U		0.000303	0.0100	0.0100	1	03/14/2016 18:44	WG856165
Caprolactam	U		0.00259	0.0100	0.0100	1	03/14/2016 18:44	WG856165
Carbazole	U		0.000260	0.0100	0.0100	1	03/14/2016 18:44	WG856165
Chrysene	U		0.000332	0.00100	0.00100	1	03/14/2016 18:44	WG856165
Dibenz(a,h)anthracene	U		0.0000644	0.000200	0.000200	1	03/14/2016 18:44	WG856165
Dibenzofuran	U		0.000338	0.0100	0.0100	1	03/14/2016 18:44	WG856165
3,3-Dichlorobenzidine	U		0.00202	0.0100	0.0100	1	03/14/2016 18:44	WG856165
2,4-Dinitrotoluene	U		0.00165	0.0100	0.0100	1	03/14/2016 18:44	WG856165
2,6-Dinitrotoluene	U		0.000279	0.0100	0.0100	1	03/14/2016 18:44	WG856165
Fluoranthene	U		0.000310	0.00100	0.00100	1	03/14/2016 18:44	WG856165
Fluorene	U		0.000323	0.00100	0.00100	1	03/14/2016 18:44	WG856165
Hexachlorobenzene	U		0.000341	0.00100	0.00100	1	03/14/2016 18:44	WG856165
Hexachloro-1,3-butadiene	U		0.000329	0.0100	0.0100	1	03/14/2016 18:44	WG856165
Hexachlorocyclopentadiene	U		0.00233	0.0100	0.0100	1	03/14/2016 18:44	WG856165
Hexachloroethane	U		0.000365	0.0100	0.0100	1	03/14/2016 18:44	WG856165
Indeno(1,2,3-cd)pyrene	U		0.000279	0.00100	0.00100	1	03/14/2016 18:44	WG856165
Isophorone	U		0.000272	0.0100	0.0100	1	03/14/2016 18:44	WG856165
1-Methylnaphthalene	U		0.000332	0.00100	0.00100	1	03/14/2016 18:44	WG856165
2-Methylnaphthalene	U		0.000311	0.00100	0.00100	1	03/14/2016 18:44	WG856165
Naphthalene	U		0.000372	0.00100	0.00100	1	03/14/2016 18:44	WG856165
Nitrobenzene	U		0.000367	0.0100	0.0100	1	03/14/2016 18:44	WG856165
n-Nitrosodiphenylamine	U		0.000304	0.0100	0.0100	1	03/14/2016 18:44	WG856165
n-Nitrosodi-n-propylamine	U		0.000403	0.0100	0.0100	1	03/14/2016 18:44	WG856165
Phenanthrene	U		0.000366	0.00100	0.00100	1	03/14/2016 18:44	WG856165
Benzylbutyl phthalate	U		0.000275	0.00300	0.00300	1	03/14/2016 18:44	WG856165
Bis(2-ethylhexyl)phthalate	U		0.000709	0.00300	0.00300	1	03/14/2016 18:44	WG856165
Di-n-butyl phthalate	0.000308	J	0.000266	0.00300	0.00300	1	03/14/2016 18:44	WG856165
Diethyl phthalate	U		0.000282	0.00300	0.00300	1	03/14/2016 18:44	WG856165
Dimethyl phthalate	U		0.000283	0.00300	0.00300	1	03/14/2016 18:44	WG856165
Di-n-octyl phthalate	U		0.000278	0.00300	0.00300	1	03/14/2016 18:44	WG856165
Pyrene	U		0.000330	0.00100	0.00100	1	03/14/2016 18:44	WG856165
1,2,4-Trichlorobenzene	U		0.000355	0.0100	0.0100	1	03/14/2016 18:44	WG856165
4-Chloro-3-methylphenol	U		0.000263	0.0100	0.0100	1	03/14/2016 18:44	WG856165

Semi Volatile Organic Compounds (GC/MS) by Method 8270 C

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
2-Chlorophenol	U		0.000283	0.0100	0.0100	1	03/14/2016 18:44	WG856165
2,4-Dichlorophenol	U		0.000284	0.0100	0.0100	1	03/14/2016 18:44	WG856165
2,4-Dimethylphenol	U		0.000624	0.0100	0.0100	1	03/14/2016 18:44	WG856165
4,6-Dinitro-2-methylphenol	U		0.00262	0.0100	0.0100	1	03/14/2016 18:44	WG856165
2,4-Dinitrophenol	U		0.00325	0.0100	0.0100	1	03/14/2016 18:44	WG856165
2-Nitrophenol	U		0.000320	0.0100	0.0100	1	03/14/2016 18:44	WG856165
2-Nitroaniline	U		0.00190	0.0100	0.0100	1	03/14/2016 18:44	WG856165
2-Methylphenol	U		0.000312	0.0100	0.0100	1	03/14/2016 18:44	WG856165
3&4-Methyl Phenol	U		0.000266	0.0100	0.0100	1	03/14/2016 18:44	WG856165
3-Nitroaniline	U		0.000308	0.0100	0.0100	1	03/14/2016 18:44	WG856165
4-Chloroaniline	U		0.000382	0.0100	0.0100	1	03/14/2016 18:44	WG856165
4-Nitroaniline	U		0.000349	0.0100	0.0100	1	03/14/2016 18:44	WG856165
4-Nitrophenol	U		0.00201	0.0100	0.0100	1	03/14/2016 18:44	WG856165
Pentachlorophenol	U		0.000313	0.0100	0.0100	1	03/14/2016 18:44	WG856165
Phenol	U		0.000334	0.0100	0.0100	1	03/14/2016 18:44	WG856165
2,4,5-Trichlorophenol	U		0.000236	0.0100	0.0100	1	03/14/2016 18:44	WG856165
2,4,6-Trichlorophenol	U		0.000297	0.0100	0.0100	1	03/14/2016 18:44	WG856165
(S) 2-Fluorophenol	*36.9*				*10.0-77.9*		*03/14/2016 18:44*	WG856165
(S) Phenol-d5	*27.7*				*5.00-70.1*		*03/14/2016 18:44*	WG856165
(S) Nitrobenzene-d5	*47.6*				*21.8-123*		*03/14/2016 18:44*	WG856165
(S) 2-Fluorobiphenyl	*53.6*				*29.5-131*		*03/14/2016 18:44*	WG856165
(S) 2,4,6-Tribromophenol	*39.2*				*11.2-130*		*03/14/2016 18:44*	WG856165
(S) p-Terphenyl-d14	*58.2*				*29.3-137*		*03/14/2016 18:44*	WG856165

Mercury by Method 7470A

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Mercury	U		0.0000490	0.000200	0.000200	1	03/14/2016 13:37	WG856130

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Aluminum,Dissolved	0.00829	J	0.00200	0.100	0.100	1	03/15/2016 02:43	WG855745
Arsenic,Dissolved	0.00465		0.000250	0.00200	0.00200	1	03/15/2016 02:43	WG855745
Barium,Dissolved	0.0757		0.000360	0.00500	0.00500	1	03/16/2016 15:58	WG856722
Boron,Dissolved	0.165		0.00150	0.0200	0.0200	1	03/15/2016 02:43	WG855745
Cadmium,Dissolved	U		0.000160	0.00100	0.00100	1	03/15/2016 02:43	WG855745
Chromium,Dissolved	0.00111	J	0.000540	0.00200	0.00200	1	03/15/2016 02:43	WG855745
Copper,Dissolved	0.000558	J	0.000520	0.00500	0.00500	1	03/15/2016 02:43	WG855745
Cobalt,Dissolved	U		0.000260	0.00200	0.00200	1	03/15/2016 02:43	WG855745
Iron,Dissolved	U		0.0150	0.100	0.100	1	03/15/2016 02:43	WG855745
Lead,Dissolved	U		0.000240	0.00200	0.00200	1	03/15/2016 02:43	WG855745
Manganese,Dissolved	0.000652	J	0.000250	0.00500	0.00500	1	03/15/2016 02:43	WG855745
Molybdenum,Dissolved	0.00482	J	0.000140	0.00500	0.00500	1	03/15/2016 02:43	WG855745
Nickel,Dissolved	0.000690	J	0.000350	0.00200	0.00200	1	03/15/2016 02:43	WG855745
Selenium,Dissolved	0.00190	J	0.000380	0.00200	0.00200	1	03/15/2016 02:43	WG855745
Silver,Dissolved	U		0.000310	0.00200	0.00200	1	03/15/2016 02:43	WG855745
Uranium,Dissolved	0.00213	J	0.000330	0.0100	0.0100	1	03/15/2016 02:43	WG855745
Zinc,Dissolved	U		0.00256	0.0250	0.0250	1	03/15/2016 02:43	WG855745

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Acetone	U		0.0100	1.00	1.00	1	03/14/2016 21:44	WG855836
Benzene	U		0.000331	0.00100	0.00100	1	03/14/2016 21:44	WG855836
Bromodichloromethane	0.000796	J	0.000380	0.00125	0.00125	1	03/14/2016 21:44	WG855836
Bromoform	U		0.000469	0.00100	0.00100	1	03/14/2016 21:44	WG855836
Bromomethane	U		0.000866	0.00500	0.00500	1	03/14/2016 21:44	WG855836
n-Butylbenzene	U		0.000361	0.00100	0.00100	1	03/14/2016 21:44	WG855836
sec-Butylbenzene	U		0.000365	0.00100	0.00100	1	03/14/2016 21:44	WG855836
tert-Butylbenzene	U		0.000399	0.00100	0.00100	1	03/14/2016 21:44	WG855836
Carbon disulfide	U		0.000275	0.00100	0.00100	1	03/14/2016 21:44	WG855836
Carbon tetrachloride	U		0.000379	0.00100	0.00100	1	03/14/2016 21:44	WG855836
Chlorobenzene	U		0.000348	0.00100	0.00100	1	03/14/2016 21:44	WG855836
Chlorodibromomethane	0.000476	J	0.000327	0.00100	0.00100	1	03/14/2016 21:44	WG855836
Chloroethane	U		0.000453	0.00500	0.00500	1	03/14/2016 21:44	WG855836
Chloroform	0.00224	J	0.000324	0.00500	0.00500	1	03/14/2016 21:44	WG855836
Chloromethane	U		0.000276	0.00250	0.00250	1	03/14/2016 21:44	WG855836
1,2-Dibromoethane	U		0.000381	0.00100	0.00100	1	03/14/2016 21:44	WG855836
1,1-Dichloroethane	U		0.000259	0.00100	0.00100	1	03/14/2016 21:44	WG855836
1,2-Dichloroethane	U		0.000361	0.00100	0.00100	1	03/14/2016 21:44	WG855836
1,1-Dichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 21:44	WG855836
cis-1,2-Dichloroethene	U		0.000260	0.00100	0.00100	1	03/14/2016 21:44	WG855836
trans-1,2-Dichloroethene	U		0.000396	0.00100	0.00100	1	03/14/2016 21:44	WG855836
1,2-Dichloropropane	U		0.000306	0.00100	0.00100	1	03/14/2016 21:44	WG855836
cis-1,3-Dichloropropene	U		0.000418	0.00100	0.00100	1	03/14/2016 21:44	WG855836
trans-1,3-Dichloropropene	U		0.000419	0.00100	0.00100	1	03/14/2016 21:44	WG855836
Ethylbenzene	U		0.000384	0.00100	0.00100	1	03/14/2016 21:44	WG855836
Hexachloro-1,3-butadiene	U		0.000256	0.00100	0.00100	1	03/14/2016 21:44	WG855836
2-Hexanone	U		0.00382	0.0100	0.0100	1	03/14/2016 21:44	WG855836
Isopropylbenzene	U		0.000326	0.00100	0.00100	1	03/14/2016 21:44	WG855836
p-Isopropyltoluene	U		0.000350	0.00100	0.00100	1	03/14/2016 21:44	WG855836

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
2-Butanone (MEK)	U		0.00393	0.0100	0.0100	1	03/14/2016 21:44	WG855836
Methylene Chloride	U		0.00100	0.00500	0.00500	1	03/14/2016 21:44	WG855836
4-Methyl-2-pentanone (MIBK)	U		0.00214	0.0100	0.0100	1	03/14/2016 21:44	WG855836
Methyl tert-butyl ether	U		0.000367	0.00100	0.00100	1	03/14/2016 21:44	WG855836
Naphthalene	U		0.00100	0.00500	0.00500	1	03/14/2016 21:44	WG855836
n-Propylbenzene	U		0.000349	0.00100	0.00100	1	03/14/2016 21:44	WG855836
Styrene	U		0.000307	0.00100	0.00100	1	03/14/2016 21:44	WG855836
1,1,2,2-Tetrachloroethane	U		0.000130	0.00100	0.00100	1	03/14/2016 21:44	WG855836
Tetrachloroethene	U		0.000372	0.00100	0.00100	1	03/14/2016 21:44	WG855836
Toluene	U		0.000780	0.00500	0.00500	1	03/14/2016 21:44	WG855836
1,1,1-Trichloroethane	U		0.000319	0.00100	0.00100	1	03/14/2016 21:44	WG855836
1,1,2-Trichloroethane	U		0.000383	0.00100	0.00100	1	03/14/2016 21:44	WG855836
Trichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 21:44	WG855836
1,2,4-Trimethylbenzene	U		0.000373	0.00100	0.00100	1	03/14/2016 21:44	WG855836
1,3,5-Trimethylbenzene	U		0.000387	0.00100	0.00100	1	03/14/2016 21:44	WG855836
Vinyl chloride	U		0.000259	0.00100	0.00100	1	03/14/2016 21:44	WG855836
Xylenes, Total	U		0.00106	0.00300	0.00300	1	03/14/2016 21:44	WG855836
(S) Toluene-d8	*102*				*90.0-115*		*03/14/2016 21:44*	WG855836
(S) Dibromofluoromethane	*97.0*				*79.0-121*		*03/14/2016 21:44*	WG855836
(S) 4-Bromofluorobenzene	*99.2*				*80.1-120*		*03/14/2016 21:44*	WG855836

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result mg/l	Qualifier	SDL mg/l	Unadj. MQL mg/l	MQL mg/l	Dilution	Analysis date / time	Batch
Acetone	U		0.0100	1.00	1.00	1	03/14/2016 22:02	WG855836
Benzene	0.000627	J	0.000331	0.00100	0.00100	1	03/14/2016 22:02	WG855836
Bromodichloromethane	U		0.000380	0.00125	0.00125	1	03/14/2016 22:02	WG855836
Bromoform	U		0.000469	0.00100	0.00100	1	03/14/2016 22:02	WG855836
Bromomethane	U		0.000866	0.00500	0.00500	1	03/14/2016 22:02	WG855836
n-Butylbenzene	U		0.000361	0.00100	0.00100	1	03/14/2016 22:02	WG855836
sec-Butylbenzene	0.00133		0.000365	0.00100	0.00100	1	03/14/2016 22:02	WG855836
tert-Butylbenzene	U		0.000399	0.00100	0.00100	1	03/14/2016 22:02	WG855836
Carbon disulfide	U		0.000275	0.00100	0.00100	1	03/14/2016 22:02	WG855836
Carbon tetrachloride	U		0.000379	0.00100	0.00100	1	03/14/2016 22:02	WG855836
Chlorobenzene	U		0.000348	0.00100	0.00100	1	03/14/2016 22:02	WG855836
Chlorodibromomethane	U		0.000327	0.00100	0.00100	1	03/14/2016 22:02	WG855836
Chloroethane	U		0.000453	0.00500	0.00500	1	03/14/2016 22:02	WG855836
Chloroform	U		0.000324	0.00500	0.00500	1	03/14/2016 22:02	WG855836
Chloromethane	U		0.000276	0.00250	0.00250	1	03/14/2016 22:02	WG855836
1,2-Dibromoethane	U		0.000381	0.00100	0.00100	1	03/14/2016 22:02	WG855836
1,1-Dichloroethane	U		0.000259	0.00100	0.00100	1	03/14/2016 22:02	WG855836
1,2-Dichloroethane	U		0.000361	0.00100	0.00100	1	03/14/2016 22:02	WG855836
1,1-Dichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 22:02	WG855836
cis-1,2-Dichloroethene	U		0.000260	0.00100	0.00100	1	03/14/2016 22:02	WG855836
trans-1,2-Dichloroethene	U		0.000396	0.00100	0.00100	1	03/14/2016 22:02	WG855836
1,2-Dichloropropane	U		0.000306	0.00100	0.00100	1	03/14/2016 22:02	WG855836
cis-1,3-Dichloropropene	U		0.000418	0.00100	0.00100	1	03/14/2016 22:02	WG855836
trans-1,3-Dichloropropene	U		0.000419	0.00100	0.00100	1	03/14/2016 22:02	WG855836
Ethylbenzene	0.000778	J	0.000384	0.00100	0.00100	1	03/14/2016 22:02	WG855836
Hexachloro-1,3-butadiene	U		0.000256	0.00100	0.00100	1	03/14/2016 22:02	WG855836
2-Hexanone	U		0.00382	0.0100	0.0100	1	03/14/2016 22:02	WG855836
Isopropylbenzene	U		0.000326	0.00100	0.00100	1	03/14/2016 22:02	WG855836
p-Isopropyltoluene	U		0.000350	0.00100	0.00100	1	03/14/2016 22:02	WG855836
2-Butanone (MEK)	U		0.00393	0.0100	0.0100	1	03/14/2016 22:02	WG855836
Methylene Chloride	U		0.00100	0.00500	0.00500	1	03/14/2016 22:02	WG855836
4-Methyl-2-pentanone (MIBK)	U		0.00214	0.0100	0.0100	1	03/14/2016 22:02	WG855836
Methyl tert-butyl ether	U		0.000367	0.00100	0.00100	1	03/14/2016 22:02	WG855836
Naphthalene	U		0.00100	0.00500	0.00500	1	03/14/2016 22:02	WG855836
n-Propylbenzene	U		0.000349	0.00100	0.00100	1	03/14/2016 22:02	WG855836
Styrene	U		0.000307	0.00100	0.00100	1	03/14/2016 22:02	WG855836
1,1,2,2-Tetrachloroethane	U		0.000130	0.00100	0.00100	1	03/14/2016 22:02	WG855836
Tetrachloroethene	U		0.000372	0.00100	0.00100	1	03/14/2016 22:02	WG855836
Toluene	U		0.000780	0.00500	0.00500	1	03/14/2016 22:02	WG855836
1,1,1-Trichloroethane	U		0.000319	0.00100	0.00100	1	03/14/2016 22:02	WG855836
1,1,2-Trichloroethane	U		0.000383	0.00100	0.00100	1	03/14/2016 22:02	WG855836
Trichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 22:02	WG855836
1,2,4-Trimethylbenzene	U		0.000373	0.00100	0.00100	1	03/14/2016 22:02	WG855836
1,3,5-Trimethylbenzene	U		0.000387	0.00100	0.00100	1	03/14/2016 22:02	WG855836
Vinyl chloride	U		0.000259	0.00100	0.00100	1	03/14/2016 22:02	WG855836
Xylenes, Total	U		0.00106	0.00300	0.00300	1	03/14/2016 22:02	WG855836
(S) Toluene-d8	*102*				*90.0-115*		*03/14/2016 22:02*	WG855836
(S) Dibromofluoromethane	*98.1*				*79.0-121*		*03/14/2016 22:02*	WG855836
(S) 4-Bromofluorobenzene	*104*				*80.1-120*		*03/14/2016 22:02*	WG855836

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Acetone	U		0.0100	1.00	1.00	1	03/14/2016 22:20	WG855836
Benzene	0.000772	J	0.000331	0.00100	0.00100	1	03/14/2016 22:20	WG855836
Bromodichloromethane	U		0.000380	0.00125	0.00125	1	03/14/2016 22:20	WG855836
Bromoform	U		0.000469	0.00100	0.00100	1	03/14/2016 22:20	WG855836
Bromomethane	U		0.000866	0.00500	0.00500	1	03/14/2016 22:20	WG855836
n-Butylbenzene	U		0.000361	0.00100	0.00100	1	03/14/2016 22:20	WG855836
sec-Butylbenzene	0.00163		0.000365	0.00100	0.00100	1	03/14/2016 22:20	WG855836
tert-Butylbenzene	U		0.000399	0.00100	0.00100	1	03/14/2016 22:20	WG855836
Carbon disulfide	U		0.000275	0.00100	0.00100	1	03/14/2016 22:20	WG855836
Carbon tetrachloride	U		0.000379	0.00100	0.00100	1	03/14/2016 22:20	WG855836
Chlorobenzene	U		0.000348	0.00100	0.00100	1	03/14/2016 22:20	WG855836
Chlorodibromomethane	U		0.000327	0.00100	0.00100	1	03/14/2016 22:20	WG855836
Chloroethane	U		0.000453	0.00500	0.00500	1	03/14/2016 22:20	WG855836
Chloroform	U		0.000324	0.00500	0.00500	1	03/14/2016 22:20	WG855836
Chloromethane	U		0.000276	0.00250	0.00250	1	03/14/2016 22:20	WG855836
1,2-Dibromoethane	U		0.000381	0.00100	0.00100	1	03/14/2016 22:20	WG855836
1,1-Dichloroethane	U		0.000259	0.00100	0.00100	1	03/14/2016 22:20	WG855836
1,2-Dichloroethane	U		0.000361	0.00100	0.00100	1	03/14/2016 22:20	WG855836
1,1-Dichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 22:20	WG855836
cis-1,2-Dichloroethene	U		0.000260	0.00100	0.00100	1	03/14/2016 22:20	WG855836
trans-1,2-Dichloroethene	U		0.000396	0.00100	0.00100	1	03/14/2016 22:20	WG855836
1,2-Dichloropropane	U		0.000306	0.00100	0.00100	1	03/14/2016 22:20	WG855836
cis-1,3-Dichloropropene	U		0.000418	0.00100	0.00100	1	03/14/2016 22:20	WG855836
trans-1,3-Dichloropropene	U		0.000419	0.00100	0.00100	1	03/14/2016 22:20	WG855836
Ethylbenzene	0.000908	J	0.000384	0.00100	0.00100	1	03/14/2016 22:20	WG855836
Hexachloro-1,3-butadiene	U		0.000256	0.00100	0.00100	1	03/14/2016 22:20	WG855836
2-Hexanone	U		0.00382	0.0100	0.0100	1	03/14/2016 22:20	WG855836
Isopropylbenzene	0.000358	J	0.000326	0.00100	0.00100	1	03/14/2016 22:20	WG855836
p-Isopropyltoluene	U		0.000350	0.00100	0.00100	1	03/14/2016 22:20	WG855836
2-Butanone (MEK)	U		0.00393	0.0100	0.0100	1	03/14/2016 22:20	WG855836
Methylene Chloride	U		0.00100	0.00500	0.00500	1	03/14/2016 22:20	WG855836
4-Methyl-2-pentanone (MIBK)	U		0.00214	0.0100	0.0100	1	03/14/2016 22:20	WG855836
Methyl tert-butyl ether	U		0.000367	0.00100	0.00100	1	03/14/2016 22:20	WG855836
Naphthalene	U		0.00100	0.00500	0.00500	1	03/14/2016 22:20	WG855836
n-Propylbenzene	U		0.000349	0.00100	0.00100	1	03/14/2016 22:20	WG855836
Styrene	U		0.000307	0.00100	0.00100	1	03/14/2016 22:20	WG855836
1,1,2,2-Tetrachloroethane	U		0.000130	0.00100	0.00100	1	03/14/2016 22:20	WG855836
Tetrachloroethene	U		0.000372	0.00100	0.00100	1	03/14/2016 22:20	WG855836
Toluene	U		0.000780	0.00500	0.00500	1	03/14/2016 22:20	WG855836
1,1,1-Trichloroethane	U		0.000319	0.00100	0.00100	1	03/14/2016 22:20	WG855836
1,1,2-Trichloroethane	U		0.000383	0.00100	0.00100	1	03/14/2016 22:20	WG855836
Trichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 22:20	WG855836
1,2,4-Trimethylbenzene	U		0.000373	0.00100	0.00100	1	03/14/2016 22:20	WG855836
1,3,5-Trimethylbenzene	U		0.000387	0.00100	0.00100	1	03/14/2016 22:20	WG855836
Vinyl chloride	U		0.000259	0.00100	0.00100	1	03/14/2016 22:20	WG855836
Xylenes, Total	U		0.00106	0.00300	0.00300	1	03/14/2016 22:20	WG855836
(S) Toluene-d8	*101*				*90.0-115*		*03/14/2016 22:20*	WG855836
(S) Dibromofluoromethane	*98.9*				*79.0-121*		*03/14/2016 22:20*	WG855836
(S) 4-Bromofluorobenzene	*100*				*80.1-120*		*03/14/2016 22:20*	WG855836

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Nitrate-Nitrite	1.76		0.0197	0.100	0.100	1	03/17/2016 02:39	WG856707

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Chloride	28.9		0.0519	1.00	1.00	1	03/12/2016 07:22	WG855865
Fluoride	1.09		0.00990	0.100	0.100	1	03/12/2016 07:22	WG855865
Sulfate	68.1		0.0774	5.00	5.00	1	03/12/2016 07:22	WG855865

Mercury by Method 7470A

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Mercury	U		0.0000490	0.000200	0.000200	1	03/14/2016 13:40	WG856130

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Aluminum,Dissolved	0.00841	J	0.00200	0.100	0.100	1	03/15/2016 02:47	WG855745
Arsenic,Dissolved	0.00292		0.000250	0.00200	0.00200	1	03/15/2016 02:47	WG855745
Barium,Dissolved	0.121		0.000360	0.00500	0.00500	1	03/16/2016 16:03	WG856722
Boron,Dissolved	0.155		0.00150	0.0200	0.0200	1	03/15/2016 02:47	WG855745
Cadmium,Dissolved	U		0.000160	0.00100	0.00100	1	03/15/2016 02:47	WG855745
Chromium,Dissolved	0.0276		0.000540	0.00200	0.00200	1	03/15/2016 02:47	WG855745
Copper,Dissolved	0.00141	J	0.000520	0.00500	0.00500	1	03/15/2016 02:47	WG855745
Cobalt,Dissolved	U		0.000260	0.00200	0.00200	1	03/15/2016 02:47	WG855745
Iron,Dissolved	U		0.0150	0.100	0.100	1	03/15/2016 02:47	WG855745
Lead,Dissolved	U		0.000240	0.00200	0.00200	1	03/15/2016 02:47	WG855745
Manganese,Dissolved	0.00102	J	0.000250	0.00500	0.00500	1	03/15/2016 02:47	WG855745
Molybdenum,Dissolved	0.00170	J	0.000140	0.00500	0.00500	1	03/15/2016 02:47	WG855745
Nickel,Dissolved	0.000910	J	0.000350	0.00200	0.00200	1	03/15/2016 02:47	WG855745
Selenium,Dissolved	0.00150	J	0.000380	0.00200	0.00200	1	03/15/2016 02:47	WG855745
Silver,Dissolved	U		0.000310	0.00200	0.00200	1	03/15/2016 02:47	WG855745
Uranium,Dissolved	0.00246	J	0.000330	0.0100	0.0100	1	03/15/2016 02:47	WG855745
Zinc,Dissolved	0.00436	J	0.00256	0.0250	0.0250	1	03/15/2016 02:47	WG855745

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Acetone	U		0.0100	1.00	1.00	1	03/14/2016 22:38	WG855836
Benzene	U		0.000331	0.00100	0.00100	1	03/14/2016 22:38	WG855836
Bromodichloromethane	U		0.000380	0.00125	0.00125	1	03/14/2016 22:38	WG855836
Bromoform	U		0.000469	0.00100	0.00100	1	03/14/2016 22:38	WG855836
Bromomethane	U		0.000866	0.00500	0.00500	1	03/14/2016 22:38	WG855836
n-Butylbenzene	U		0.000361	0.00100	0.00100	1	03/14/2016 22:38	WG855836
sec-Butylbenzene	U		0.000365	0.00100	0.00100	1	03/14/2016 22:38	WG855836
tert-Butylbenzene	U		0.000399	0.00100	0.00100	1	03/14/2016 22:38	WG855836
Carbon disulfide	U		0.000275	0.00100	0.00100	1	03/14/2016 22:38	WG855836
Carbon tetrachloride	U		0.000379	0.00100	0.00100	1	03/14/2016 22:38	WG855836
Chlorobenzene	U		0.000348	0.00100	0.00100	1	03/14/2016 22:38	WG855836
Chlorodibromomethane	U		0.000327	0.00100	0.00100	1	03/14/2016 22:38	WG855836
Chloroethane	U		0.000453	0.00500	0.00500	1	03/14/2016 22:38	WG855836
Chloroform	U		0.000324	0.00500	0.00500	1	03/14/2016 22:38	WG855836
Chloromethane	U		0.000276	0.00250	0.00250	1	03/14/2016 22:38	WG855836
1,2-Dibromoethane	U		0.000381	0.00100	0.00100	1	03/14/2016 22:38	WG855836

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
1,1-Dichloroethane	U		0.000259	0.00100	0.00100	1	03/14/2016 22:38	WG855836
1,2-Dichloroethane	U		0.000361	0.00100	0.00100	1	03/14/2016 22:38	WG855836
1,1-Dichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 22:38	WG855836
cis-1,2-Dichloroethene	U		0.000260	0.00100	0.00100	1	03/14/2016 22:38	WG855836
trans-1,2-Dichloroethene	U		0.000396	0.00100	0.00100	1	03/14/2016 22:38	WG855836
1,2-Dichloropropane	U		0.000306	0.00100	0.00100	1	03/14/2016 22:38	WG855836
cis-1,3-Dichloropropene	U		0.000418	0.00100	0.00100	1	03/14/2016 22:38	WG855836
trans-1,3-Dichloropropene	U		0.000419	0.00100	0.00100	1	03/14/2016 22:38	WG855836
Ethylbenzene	U		0.000384	0.00100	0.00100	1	03/14/2016 22:38	WG855836
Hexachloro-1,3-butadiene	U		0.000256	0.00100	0.00100	1	03/14/2016 22:38	WG855836
2-Hexanone	U		0.00382	0.0100	0.0100	1	03/14/2016 22:38	WG855836
Isopropylbenzene	U		0.000326	0.00100	0.00100	1	03/14/2016 22:38	WG855836
p-Isopropyltoluene	U		0.000350	0.00100	0.00100	1	03/14/2016 22:38	WG855836
2-Butanone (MEK)	U		0.00393	0.0100	0.0100	1	03/14/2016 22:38	WG855836
Methylene Chloride	U		0.00100	0.00500	0.00500	1	03/14/2016 22:38	WG855836
4-Methyl-2-pentanone (MIBK)	U		0.00214	0.0100	0.0100	1	03/14/2016 22:38	WG855836
Methyl tert-butyl ether	U		0.000367	0.00100	0.00100	1	03/14/2016 22:38	WG855836
Naphthalene	U		0.00100	0.00500	0.00500	1	03/14/2016 22:38	WG855836
n-Propylbenzene	U		0.000349	0.00100	0.00100	1	03/14/2016 22:38	WG855836
Styrene	U		0.000307	0.00100	0.00100	1	03/14/2016 22:38	WG855836
1,1,2,2-Tetrachloroethane	U		0.000130	0.00100	0.00100	1	03/14/2016 22:38	WG855836
Tetrachloroethene	U		0.000372	0.00100	0.00100	1	03/14/2016 22:38	WG855836
Toluene	U		0.000780	0.00500	0.00500	1	03/14/2016 22:38	WG855836
1,1,1-Trichloroethane	U		0.000319	0.00100	0.00100	1	03/14/2016 22:38	WG855836
1,1,2-Trichloroethane	U		0.000383	0.00100	0.00100	1	03/14/2016 22:38	WG855836
Trichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 22:38	WG855836
1,2,4-Trimethylbenzene	U		0.000373	0.00100	0.00100	1	03/14/2016 22:38	WG855836
1,3,5-Trimethylbenzene	U		0.000387	0.00100	0.00100	1	03/14/2016 22:38	WG855836
Vinyl chloride	U		0.000259	0.00100	0.00100	1	03/14/2016 22:38	WG855836
Xylenes, Total	U		0.00106	0.00300	0.00300	1	03/14/2016 22:38	WG855836
(S) Toluene-d8	*103*				*90.0-115*		*03/14/2016 22:38*	WG855836
(S) Dibromofluoromethane	*97.5*				*79.0-121*		*03/14/2016 22:38*	WG855836
(S) 4-Bromofluorobenzene	*102*				*80.1-120*		*03/14/2016 22:38*	WG855836

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Acetone	U		0.0100	1.00	1.00	1	03/14/2016 18:59	WG855836
Benzene	U		0.000331	0.00100	0.00100	1	03/14/2016 18:59	WG855836
Bromodichloromethane	U		0.000380	0.00125	0.00125	1	03/14/2016 18:59	WG855836
Bromoform	U		0.000469	0.00100	0.00100	1	03/14/2016 18:59	WG855836
Bromomethane	U		0.000866	0.00500	0.00500	1	03/14/2016 18:59	WG855836
n-Butylbenzene	U		0.000361	0.00100	0.00100	1	03/14/2016 18:59	WG855836
sec-Butylbenzene	U		0.000365	0.00100	0.00100	1	03/14/2016 18:59	WG855836
tert-Butylbenzene	U		0.000399	0.00100	0.00100	1	03/14/2016 18:59	WG855836
Carbon disulfide	U		0.000275	0.00100	0.00100	1	03/14/2016 18:59	WG855836
Carbon tetrachloride	U		0.000379	0.00100	0.00100	1	03/14/2016 18:59	WG855836
Chlorobenzene	U		0.000348	0.00100	0.00100	1	03/14/2016 18:59	WG855836
Chlorodibromomethane	U		0.000327	0.00100	0.00100	1	03/14/2016 18:59	WG855836
Chloroethane	U		0.000453	0.00500	0.00500	1	03/14/2016 18:59	WG855836
Chloroform	U		0.000324	0.00500	0.00500	1	03/14/2016 18:59	WG855836
Chloromethane	U		0.000276	0.00250	0.00250	1	03/14/2016 18:59	WG855836
1,2-Dibromoethane	U		0.000381	0.00100	0.00100	1	03/14/2016 18:59	WG855836
1,1-Dichloroethane	U		0.000259	0.00100	0.00100	1	03/14/2016 18:59	WG855836
1,2-Dichloroethane	U		0.000361	0.00100	0.00100	1	03/14/2016 18:59	WG855836
1,1-Dichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 18:59	WG855836
cis-1,2-Dichloroethene	U		0.000260	0.00100	0.00100	1	03/14/2016 18:59	WG855836
trans-1,2-Dichloroethene	U		0.000396	0.00100	0.00100	1	03/14/2016 18:59	WG855836
1,2-Dichloropropane	U		0.000306	0.00100	0.00100	1	03/14/2016 18:59	WG855836
cis-1,3-Dichloropropene	U		0.000418	0.00100	0.00100	1	03/14/2016 18:59	WG855836
trans-1,3-Dichloropropene	U		0.000419	0.00100	0.00100	1	03/14/2016 18:59	WG855836
Ethylbenzene	U		0.000384	0.00100	0.00100	1	03/14/2016 18:59	WG855836
Hexachloro-1,3-butadiene	U		0.000256	0.00100	0.00100	1	03/14/2016 18:59	WG855836
2-Hexanone	U		0.00382	0.0100	0.0100	1	03/14/2016 18:59	WG855836
Isopropylbenzene	U		0.000326	0.00100	0.00100	1	03/14/2016 18:59	WG855836
p-Isopropyltoluene	U		0.000350	0.00100	0.00100	1	03/14/2016 18:59	WG855836
2-Butanone (MEK)	U		0.00393	0.0100	0.0100	1	03/14/2016 18:59	WG855836
Methylene Chloride	U		0.00100	0.00500	0.00500	1	03/14/2016 18:59	WG855836
4-Methyl-2-pentanone (MIBK)	U		0.00214	0.0100	0.0100	1	03/14/2016 18:59	WG855836
Methyl tert-butyl ether	U		0.000367	0.00100	0.00100	1	03/14/2016 18:59	WG855836
Naphthalene	U		0.00100	0.00500	0.00500	1	03/14/2016 18:59	WG855836
n-Propylbenzene	U		0.000349	0.00100	0.00100	1	03/14/2016 18:59	WG855836
Styrene	U		0.000307	0.00100	0.00100	1	03/14/2016 18:59	WG855836
1,1,2,2-Tetrachloroethane	U		0.000130	0.00100	0.00100	1	03/14/2016 18:59	WG855836
Tetrachloroethene	U		0.000372	0.00100	0.00100	1	03/14/2016 18:59	WG855836
Toluene	U		0.000780	0.00500	0.00500	1	03/14/2016 18:59	WG855836
1,1,1-Trichloroethane	U		0.000319	0.00100	0.00100	1	03/14/2016 18:59	WG855836
1,1,2-Trichloroethane	U		0.000383	0.00100	0.00100	1	03/14/2016 18:59	WG855836
Trichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 18:59	WG855836
1,2,4-Trimethylbenzene	U		0.000373	0.00100	0.00100	1	03/14/2016 18:59	WG855836
1,3,5-Trimethylbenzene	U		0.000387	0.00100	0.00100	1	03/14/2016 18:59	WG855836
Vinyl chloride	U		0.000259	0.00100	0.00100	1	03/14/2016 18:59	WG855836
Xylenes, Total	U		0.00106	0.00300	0.00300	1	03/14/2016 18:59	WG855836
(S) Toluene-d8	*96.5*				*90.0-115*		*03/14/2016 18:59*	WG855836
(S) Dibromofluoromethane	*97.8*				*79.0-121*		*03/14/2016 18:59*	WG855836
(S) 4-Bromofluorobenzene	*103*				*80.1-120*		*03/14/2016 18:59*	WG855836

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Acetone	U		0.0100	1.00	1.00	1	03/14/2016 19:17	WG855836
Benzene	U		0.000331	0.00100	0.00100	1	03/14/2016 19:17	WG855836
Bromodichloromethane	U		0.000380	0.00125	0.00125	1	03/14/2016 19:17	WG855836
Bromoform	U		0.000469	0.00100	0.00100	1	03/14/2016 19:17	WG855836
Bromomethane	U		0.000866	0.00500	0.00500	1	03/14/2016 19:17	WG855836
n-Butylbenzene	U		0.000361	0.00100	0.00100	1	03/14/2016 19:17	WG855836
sec-Butylbenzene	U		0.000365	0.00100	0.00100	1	03/14/2016 19:17	WG855836
tert-Butylbenzene	U		0.000399	0.00100	0.00100	1	03/14/2016 19:17	WG855836
Carbon disulfide	U		0.000275	0.00100	0.00100	1	03/14/2016 19:17	WG855836
Carbon tetrachloride	U		0.000379	0.00100	0.00100	1	03/14/2016 19:17	WG855836
Chlorobenzene	U		0.000348	0.00100	0.00100	1	03/14/2016 19:17	WG855836
Chlorodibromomethane	U		0.000327	0.00100	0.00100	1	03/14/2016 19:17	WG855836
Chloroethane	U		0.000453	0.00500	0.00500	1	03/14/2016 19:17	WG855836
Chloroform	U		0.000324	0.00500	0.00500	1	03/14/2016 19:17	WG855836
Chloromethane	U		0.000276	0.00250	0.00250	1	03/14/2016 19:17	WG855836
1,2-Dibromoethane	U		0.000381	0.00100	0.00100	1	03/14/2016 19:17	WG855836
1,1-Dichloroethane	U		0.000259	0.00100	0.00100	1	03/14/2016 19:17	WG855836
1,2-Dichloroethane	U		0.000361	0.00100	0.00100	1	03/14/2016 19:17	WG855836
1,1-Dichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 19:17	WG855836
cis-1,2-Dichloroethene	U		0.000260	0.00100	0.00100	1	03/14/2016 19:17	WG855836
trans-1,2-Dichloroethene	U		0.000396	0.00100	0.00100	1	03/14/2016 19:17	WG855836
1,2-Dichloropropane	U		0.000306	0.00100	0.00100	1	03/14/2016 19:17	WG855836
cis-1,3-Dichloropropene	U		0.000418	0.00100	0.00100	1	03/14/2016 19:17	WG855836
trans-1,3-Dichloropropene	U		0.000419	0.00100	0.00100	1	03/14/2016 19:17	WG855836
Ethylbenzene	U		0.000384	0.00100	0.00100	1	03/14/2016 19:17	WG855836
Hexachloro-1,3-butadiene	U		0.000256	0.00100	0.00100	1	03/14/2016 19:17	WG855836
2-Hexanone	U		0.00382	0.0100	0.0100	1	03/14/2016 19:17	WG855836
Isopropylbenzene	U		0.000326	0.00100	0.00100	1	03/14/2016 19:17	WG855836
p-Isopropyltoluene	U		0.000350	0.00100	0.00100	1	03/14/2016 19:17	WG855836
2-Butanone (MEK)	U		0.00393	0.0100	0.0100	1	03/14/2016 19:17	WG855836
Methylene Chloride	U		0.00100	0.00500	0.00500	1	03/14/2016 19:17	WG855836
4-Methyl-2-pentanone (MIBK)	U		0.00214	0.0100	0.0100	1	03/14/2016 19:17	WG855836
Methyl tert-butyl ether	U		0.000367	0.00100	0.00100	1	03/14/2016 19:17	WG855836
Naphthalene	U		0.00100	0.00500	0.00500	1	03/14/2016 19:17	WG855836
n-Propylbenzene	U		0.000349	0.00100	0.00100	1	03/14/2016 19:17	WG855836
Styrene	U		0.000307	0.00100	0.00100	1	03/14/2016 19:17	WG855836
1,1,2,2-Tetrachloroethane	U		0.000130	0.00100	0.00100	1	03/14/2016 19:17	WG855836
Tetrachloroethene	U		0.000372	0.00100	0.00100	1	03/14/2016 19:17	WG855836
Toluene	U		0.000780	0.00500	0.00500	1	03/14/2016 19:17	WG855836
1,1,1-Trichloroethane	U		0.000319	0.00100	0.00100	1	03/14/2016 19:17	WG855836
1,1,2-Trichloroethane	U		0.000383	0.00100	0.00100	1	03/14/2016 19:17	WG855836
Trichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 19:17	WG855836
1,2,4-Trimethylbenzene	U		0.000373	0.00100	0.00100	1	03/14/2016 19:17	WG855836
1,3,5-Trimethylbenzene	U		0.000387	0.00100	0.00100	1	03/14/2016 19:17	WG855836
Vinyl chloride	U		0.000259	0.00100	0.00100	1	03/14/2016 19:17	WG855836
Xylenes, Total	U		0.00106	0.00300	0.00300	1	03/14/2016 19:17	WG855836
(S) Toluene-d8	*101*				*90.0-115*		*03/14/2016 19:17*	WG855836
(S) Dibromofluoromethane	*97.8*				*79.0-121*		*03/14/2016 19:17*	WG855836
(S) 4-Bromofluorobenzene	*106*				*80.1-120*		*03/14/2016 19:17*	WG855836

Volatile Organic Compounds (GC/MS) by Method 8260B

Analyte	Result	Qualifier	SDL	Unadj. MQL	MQL	Dilution	Analysis	Batch
	mg/l		mg/l	mg/l	mg/l		date / time	
Acetone	U		0.0100	1.00	1.00	1	03/14/2016 19:35	WG855836
Benzene	U		0.000331	0.00100	0.00100	1	03/14/2016 19:35	WG855836
Bromodichloromethane	U		0.000380	0.00125	0.00125	1	03/14/2016 19:35	WG855836
Bromoform	U		0.000469	0.00100	0.00100	1	03/14/2016 19:35	WG855836
Bromomethane	U		0.000866	0.00500	0.00500	1	03/14/2016 19:35	WG855836
n-Butylbenzene	U		0.000361	0.00100	0.00100	1	03/14/2016 19:35	WG855836
sec-Butylbenzene	U		0.000365	0.00100	0.00100	1	03/14/2016 19:35	WG855836
tert-Butylbenzene	U		0.000399	0.00100	0.00100	1	03/14/2016 19:35	WG855836
Carbon disulfide	U		0.000275	0.00100	0.00100	1	03/14/2016 19:35	WG855836
Carbon tetrachloride	U		0.000379	0.00100	0.00100	1	03/14/2016 19:35	WG855836
Chlorobenzene	U		0.000348	0.00100	0.00100	1	03/14/2016 19:35	WG855836
Chlorodibromomethane	U		0.000327	0.00100	0.00100	1	03/14/2016 19:35	WG855836
Chloroethane	U		0.000453	0.00500	0.00500	1	03/14/2016 19:35	WG855836
Chloroform	U		0.000324	0.00500	0.00500	1	03/14/2016 19:35	WG855836
Chloromethane	U		0.000276	0.00250	0.00250	1	03/14/2016 19:35	WG855836
1,2-Dibromoethane	U		0.000381	0.00100	0.00100	1	03/14/2016 19:35	WG855836
1,1-Dichloroethane	U		0.000259	0.00100	0.00100	1	03/14/2016 19:35	WG855836
1,2-Dichloroethane	U		0.000361	0.00100	0.00100	1	03/14/2016 19:35	WG855836
1,1-Dichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 19:35	WG855836
cis-1,2-Dichloroethene	U		0.000260	0.00100	0.00100	1	03/14/2016 19:35	WG855836
trans-1,2-Dichloroethene	U		0.000396	0.00100	0.00100	1	03/14/2016 19:35	WG855836
1,2-Dichloropropane	U		0.000306	0.00100	0.00100	1	03/14/2016 19:35	WG855836
cis-1,3-Dichloropropene	U		0.000418	0.00100	0.00100	1	03/14/2016 19:35	WG855836
trans-1,3-Dichloropropene	U		0.000419	0.00100	0.00100	1	03/14/2016 19:35	WG855836
Ethylbenzene	U		0.000384	0.00100	0.00100	1	03/14/2016 19:35	WG855836
Hexachloro-1,3-butadiene	U		0.000256	0.00100	0.00100	1	03/14/2016 19:35	WG855836
2-Hexanone	U		0.00382	0.0100	0.0100	1	03/14/2016 19:35	WG855836
Isopropylbenzene	U		0.000326	0.00100	0.00100	1	03/14/2016 19:35	WG855836
p-Isopropyltoluene	U		0.000350	0.00100	0.00100	1	03/14/2016 19:35	WG855836
2-Butanone (MEK)	U		0.00393	0.0100	0.0100	1	03/14/2016 19:35	WG855836
Methylene Chloride	U		0.00100	0.00500	0.00500	1	03/14/2016 19:35	WG855836
4-Methyl-2-pentanone (MIBK)	U		0.00214	0.0100	0.0100	1	03/14/2016 19:35	WG855836
Methyl tert-butyl ether	U		0.000367	0.00100	0.00100	1	03/14/2016 19:35	WG855836
Naphthalene	U		0.00100	0.00500	0.00500	1	03/14/2016 19:35	WG855836
n-Propylbenzene	U		0.000349	0.00100	0.00100	1	03/14/2016 19:35	WG855836
Styrene	U		0.000307	0.00100	0.00100	1	03/14/2016 19:35	WG855836
1,1,2,2-Tetrachloroethane	U		0.000130	0.00100	0.00100	1	03/14/2016 19:35	WG855836
Tetrachloroethene	U		0.000372	0.00100	0.00100	1	03/14/2016 19:35	WG855836
Toluene	U		0.000780	0.00500	0.00500	1	03/14/2016 19:35	WG855836
1,1,1-Trichloroethane	U		0.000319	0.00100	0.00100	1	03/14/2016 19:35	WG855836
1,1,2-Trichloroethane	U		0.000383	0.00100	0.00100	1	03/14/2016 19:35	WG855836
Trichloroethene	U		0.000398	0.00100	0.00100	1	03/14/2016 19:35	WG855836
1,2,4-Trimethylbenzene	U		0.000373	0.00100	0.00100	1	03/14/2016 19:35	WG855836
1,3,5-Trimethylbenzene	U		0.000387	0.00100	0.00100	1	03/14/2016 19:35	WG855836
Vinyl chloride	U		0.000259	0.00100	0.00100	1	03/14/2016 19:35	WG855836
Xylenes, Total	U		0.00106	0.00300	0.00300	1	03/14/2016 19:35	WG855836
(S) Toluene-d8	*99.1*				*90.0-115*		*03/14/2016 19:35*	WG855836
(S) Dibromofluoromethane	*97.0*				*79.0-121*		*03/14/2016 19:35*	WG855836
(S) 4-Bromofluorobenzene	*102*				*80.1-120*		*03/14/2016 19:35*	WG855836

Method Blank (MB)

(MB) 03/13/16 05:39

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		2.82	10.0

L822383-01 Original Sample (OS) • Duplicate (DUP)

(OS) 03/13/16 05:39 • (DUP) 03/13/16 05:39

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	188	183	1	2.70		5

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 03/13/16 05:39 • (LCSD) 03/13/16 05:39

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Dissolved Solids	8800	8110	8480	92.2	96.4	85.0-115			4.46	5

Method Blank (MB)

(MB) 03/14/16 03:37

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Dissolved Solids	U		2.82	10.0

L822255-08 Original Sample (OS) • Duplicate (DUP)

(OS) 03/14/16 03:37 • (DUP) 03/14/16 03:37

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Dissolved Solids	1240	1190	1	4.77		5

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 03/14/16 03:37 • (LCSD) 03/14/16 03:37

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Dissolved Solids	8800	8230	8580	93.5	97.5	85.0-115			4.16	5

Method Blank (MB)

(MB) 03/18/16 13:26

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Alkalinity	U		2.61	20.0

L822442-01 Original Sample (OS) • Duplicate (DUP)

(OS) 03/18/16 13:46 • (DUP) 03/18/16 13:54

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	634	631	1	0.474		20

L822693-02 Original Sample (OS) • Duplicate (DUP)

(OS) 03/18/16 16:17 • (DUP) 03/18/16 16:24

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	188	186	1	1.07		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 03/18/16 15:00 • (LCSD) 03/18/16 16:37

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Alkalinity	100	97.6	98.3	97.6	98.3	85.0-115			0.661	20

L822693-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 03/18/16 15:55 • (MS) 03/18/16 16:02 • (MSD) 03/18/16 16:09

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Alkalinity	100	189	232	243	42.8	54.1	1	80.0-120	J6	J6	4.77	20

L823037-03 Original Sample (OS) • Duplicate (DUP)

(OS) 03/20/16 12:41 • (DUP) 03/20/16 12:47

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	517	522	1	0.962		20

L823037-07 Original Sample (OS) • Duplicate (DUP)

(OS) 03/20/16 13:23 • (DUP) 03/20/16 13:31

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	520	525	1	0.957		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 03/20/16 13:14 • (LCSD) 03/20/16 14:51

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Alkalinity	100	109	108	109	108	85.0-115			0.877	20

L823037-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 03/20/16 14:04 • (MS) 03/20/16 14:11 • (MSD) 03/20/16 14:17

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Alkalinity	100	550	594	595	44.2	44.7	1	80.0-120	V	V	0.0983	20

Method Blank (MB)

(MB) 03/17/16 02:14

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Nitrate-Nitrite	0.0310		0.0197	0.100

L822693-01 Original Sample (OS) • Duplicate (DUP)

(OS) 03/17/16 02:23 • (DUP) 03/17/16 02:24

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	3.31	3.30	1	0.000		20

L822693-18 Original Sample (OS) • Duplicate (DUP)

(OS) 03/17/16 02:39 • (DUP) 03/17/16 02:40

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Nitrate-Nitrite	1.76	1.76	1	0.000		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 03/17/16 02:16 • (LCSD) 03/17/16 02:17

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Nitrate-Nitrite	5.00	4.92	5.02	98.0	100	90.0-110			2.00	20

L822693-08 Original Sample (OS) • Matrix Spike (MS)

(OS) 03/17/16 02:29 • (MS) 03/17/16 02:30

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Nitrate-Nitrite	5.00	1.84	6.24	88.0	1	90.0-110	J6

L823056-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 03/17/16 02:46 • (MS) 03/17/16 02:47 • (MSD) 03/17/16 02:48

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Nitrate-Nitrite	5.00	1.03	5.44	5.53	88.0	90.0	1	90.0-110	J6		2.00	20

L822556-01 Original Sample (OS) • Duplicate (DUP)

(OS) 03/11/16 11:03 • (DUP) 03/11/16 11:03

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	12.8	12.8	1	0.0782		1

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 03/11/16 11:03 • (LCSD) 03/11/16 11:03

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	su	su	su	%	%	%			%	%
pH	6.31	6.32	6.32	100	100	98.5-102			0.000	1

Method Blank (MB)

(MB) 03/11/16 12:24

Analyte	MB Result umhos/cm	MB Qualifier	MB RDL umhos/cm
Specific Conductance	1.19		

L822442-04 Original Sample (OS) • Duplicate (DUP)

(OS) 03/11/16 12:24 • (DUP) 03/11/16 12:24

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	1600	1590	1	0.627		20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 03/11/16 12:24 • (LCSD) 03/11/16 12:24

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCSD Result umhos/cm	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Specific Conductance	915	955	954	104	104	90.0-110			0.105	20

Method Blank (MB)

(MB) 03/10/16 10:16

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chloride	U		0.0519	1.00
Fluoride	U		0.0099	0.100
Sulfate	U		0.0774	5.00

L822507-02 Original Sample (OS) • Duplicate (DUP)

(OS) 03/10/16 14:45 • (DUP) 03/10/16 15:00

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	15.9	15.9	1	0		15
Fluoride	0.00470	0.000	1	0		15
Sulfate	67.6	67.3	1	0		15

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 03/10/16 10:31 • (LCSD) 03/10/16 10:46

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chloride	40.0	37.8	37.7	95	94	80-120			0	15
Fluoride	8.00	7.36	7.37	92	92	80-120			0	15
Sulfate	40.0	37.1	37.2	93	93	80-120			0	15

L822507-03 Original Sample (OS) • Matrix Spike (MS)

(OS) 03/10/16 15:16 • (MS) 03/10/16 15:31

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50.0	22.5	65.5	86	1	80-120	
Fluoride	5.00	0.187	5.19	100	1	80-120	
Sulfate	50.0	0.781	48.7	96	1	80-120	

Method Blank (MB)

(MB) 03/11/16 09:04

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chloride	U		0.0519	1.00
Fluoride	U		0.0099	0.100
Sulfate	U		0.0774	5.00

L822568-01 Original Sample (OS) • Duplicate (DUP)

(OS) 03/11/16 15:18 • (DUP) 03/11/16 15:33

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	71.5	71.4	1	0		15
Fluoride	0.229	0.228	1	0		15
Sulfate	24.1	23.9	1	1		15

L822681-10 Original Sample (OS) • Duplicate (DUP)

(OS) 03/11/16 22:38 • (DUP) 03/11/16 22:57

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	1360	1190	50	14		15
Fluoride	ND	0.000	50	0		15
Sulfate	177	220	50	22	J P1	15

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 03/11/16 09:20 • (LCSD) 03/11/16 09:35

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chloride	40.0	37.7	37.7	94	94	80-120			0	15
Fluoride	8.00	7.39	7.41	92	93	80-120			0	15
Sulfate	40.0	37.3	37.3	93	93	80-120			0	15

L822442-03 Original Sample (OS) • Matrix Spike (MS)

(OS) 03/11/16 14:32 • (MS) 03/11/16 14:47

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50.0	1.09	49.5	97	1	80-120	
Fluoride	5.00	0.335	5.06	95	1	80-120	

L822681-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 03/11/16 21:42 • (MS) 03/11/16 22:00 • (MSD) 03/11/16 22:19

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Chloride	50.0	65.8	106	105	81	79	1	80-120		J6	1	15
Fluoride	5.00	2.00	6.64	6.53	93	90	1	80-120			2	15

Method Blank (MB)

(MB) 03/12/16 01:37

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Chloride	U		0.0519	1.00
Fluoride	U		0.0099	0.100
Sulfate	U		0.0774	5.00

L822693-18 Original Sample (OS) • Duplicate (DUP)

(OS) 03/12/16 07:22 • (DUP) 03/12/16 07:38

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	28.9	29.1	1	1		15
Fluoride	1.09	1.09	1	0		15
Sulfate	68.1	68.2	1	0		15

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 03/12/16 01:53 • (LCSD) 03/12/16 02:10

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Chloride	40.0	40.0	40.0	100	100	80-120			0	15
Fluoride	8.00	7.98	8.02	100	100	80-120			0	15
Sulfate	40.0	40.1	40.2	100	101	80-120			0	15

L822693-10 Original Sample (OS) • Matrix Spike (MS)

(OS) 03/12/16 06:32 • (MS) 03/12/16 06:49

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chloride	50.0	70.6	119	98	1	80-120	
Fluoride	5.00	1.30	6.40	102	1	80-120	
Sulfate	50.0	83.0	131	95	1	80-120	

L822710-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 03/12/16 07:54 • (MS) 03/12/16 08:11 • (MSD) 03/12/16 08:27

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Fluoride	5.00	0.410	5.02	5.19	92	96	1	80-120			3	15

Method Blank (MB)

(MB) 03/14/16 13:04

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Mercury	U		0.000049	0.000200

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 03/14/16 13:07 • (LCSD) 03/14/16 13:09

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Mercury	0.00300	0.00294	0.00308	98	103	80-120			5	20

L822824-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 03/14/16 13:12 • (MS) 03/14/16 13:14 • (MSD) 03/14/16 13:17

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Mercury	0.00300	ND	0.00278	0.00295	93	98	1	75-125			6	20

Method Blank (MB)

(MB) 03/15/16 00:51

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Aluminum,Dissolved	0.0131		0.002	0.100
Arsenic,Dissolved	U		0.00025	0.00200
Boron,Dissolved	U		0.0015	0.0200
Cadmium,Dissolved	U		0.00016	0.00100
Chromium,Dissolved	U		0.00054	0.00200
Copper,Dissolved	0.000535		0.00052	0.00500
Cobalt,Dissolved	U		0.00026	0.00200
Iron,Dissolved	0.0206		0.015	0.100
Lead,Dissolved	0.000422		0.00024	0.00200
Manganese,Dissolved	U		0.00025	0.00500
Molybdenum,Dissolved	0.000389		0.00014	0.00500
Nickel,Dissolved	U		0.00035	0.00200
Selenium,Dissolved	U		0.00038	0.00200
Silver,Dissolved	U		0.00031	0.00200
Uranium,Dissolved	U		0.00033	0.0100
Zinc,Dissolved	0.00485		0.00256	0.0250

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 03/15/16 00:56 • (LCSD) 03/15/16 01:00

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Aluminum,Dissolved	5.00	4.83	4.74	97	95	80-120			2	20
Arsenic,Dissolved	0.0500	0.0491	0.0490	98	98	80-120			0	20
Boron,Dissolved	0.0500	0.0477	0.0480	95	96	80-120			1	20
Cadmium,Dissolved	0.0500	0.0479	0.0472	96	94	80-120			1	20
Chromium,Dissolved	0.0500	0.0473	0.0541	95	108	80-120			13	20
Copper,Dissolved	0.0500	0.0497	0.0489	99	98	80-120			2	20
Cobalt,Dissolved	0.0500	0.0487	0.0479	97	96	80-120			2	20
Iron,Dissolved	5.00	5.03	4.97	101	99	80-120			1	20
Lead,Dissolved	0.0500	0.0493	0.0486	99	97	80-120			1	20
Manganese,Dissolved	0.0500	0.0500	0.0498	100	100	80-120			0	20
Molybdenum,Dissolved	0.0500	0.0480	0.0479	96	96	80-120			0	20
Nickel,Dissolved	0.0500	0.0519	0.0559	104	112	80-120			7	20
Selenium,Dissolved	0.0500	0.0487	0.0484	97	97	80-120			1	20
Silver,Dissolved	0.0500	0.0476	0.0467	95	93	80-120			2	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 03/15/16 00:56 • (LCSD) 03/15/16 01:00

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Uranium,Dissolved	0.0500	0.0508	0.0511	102	102	80-120			1	20
Zinc,Dissolved	0.0500	0.0509	0.0487	102	97	80-120			4	20

L822735-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 03/15/16 01:05 • (MS) 03/15/16 01:15 • (MSD) 03/15/16 01:20

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Aluminum,Dissolved	5.00	0.0124	4.76	4.71	95	94	1	75-125			1	20
Arsenic,Dissolved	0.0500	0.000572	0.0503	0.0504	100	100	1	75-125			0	20
Boron,Dissolved	0.0500	0.0188	0.0642	0.0637	91	90	1	75-125			1	20
Cadmium,Dissolved	0.0500	0.0000231	0.0483	0.0484	97	97	1	75-125			0	20
Chromium,Dissolved	0.0500	0.000390	0.0470	0.0463	93	92	1	75-125			1	20
Copper,Dissolved	0.0500	0.00146	0.0500	0.0501	97	97	1	75-125			0	20
Cobalt,Dissolved	0.0500	0.000722	0.0482	0.0481	95	95	1	75-125			0	20
Iron,Dissolved	5.00	0.0162	4.98	4.93	99	98	1	75-125			1	20
Lead,Dissolved	0.0500	0.000267	0.0493	0.0485	98	96	1	75-125			2	20
Manganese,Dissolved	0.0500	0.404	0.455	0.456	101	102	1	75-125			0	20
Molybdenum,Dissolved	0.0500	0.000314	0.0492	0.0490	98	97	1	75-125			0	20
Nickel,Dissolved	0.0500	0.000823	0.0506	0.0499	99	98	1	75-125			1	20
Selenium,Dissolved	0.0500	0.0000631	0.0489	0.0485	98	97	1	75-125			1	20
Silver,Dissolved	0.0500	0.000228	0.0478	0.0478	95	95	1	75-125			0	20
Uranium,Dissolved	0.0500	0.000186	0.0516	0.0520	103	104	1	75-125			1	20
Zinc,Dissolved	0.0500	0.00175	0.0507	0.0500	98	97	1	75-125			1	20

Method Blank (MB)

(MB) 03/16/16 14:55

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Barium,Dissolved	U		0.00036	0.00500

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 03/16/16 15:00 • (LCSD) 03/16/16 15:04

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Barium,Dissolved	0.0500	0.0451	0.0449	90	90	80-120			0	20

L822693-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 03/16/16 15:10 • (MS) 03/16/16 15:19 • (MSD) 03/16/16 15:24

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium,Dissolved	0.0500	0.140	0.185	0.186	89	92	1	75-125			1	20

Method Blank (MB)

(MB) 03/14/16 14:23

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Acetone	U		0.0100	1.00
Benzene	U		0.000331	0.00100
Bromodichloromethane	U		0.000380	0.00125
Bromoform	U		0.000469	0.00100
Bromomethane	U		0.000866	0.00500
n-Butylbenzene	U		0.000361	0.00100
sec-Butylbenzene	U		0.000365	0.00100
tert-Butylbenzene	U		0.000399	0.00100
Carbon disulfide	U		0.000275	0.00100
Carbon tetrachloride	U		0.000379	0.00100
Chlorobenzene	U		0.000348	0.00100
Chlorodibromomethane	U		0.000327	0.00100
Chloroethane	U		0.000453	0.00500
Chloroform	U		0.000324	0.00500
Chloromethane	U		0.000276	0.00250
1,2-Dibromoethane	U		0.000381	0.00100
1,1-Dichloroethane	U		0.000259	0.00100
1,2-Dichloroethane	U		0.000361	0.00100
1,1-Dichloroethene	U		0.000398	0.00100
cis-1,2-Dichloroethene	U		0.000260	0.00100
trans-1,2-Dichloroethene	U		0.000396	0.00100
1,2-Dichloropropane	U		0.000306	0.00100
cis-1,3-Dichloropropene	U		0.000418	0.00100
trans-1,3-Dichloropropene	U		0.000419	0.00100
Ethylbenzene	U		0.000384	0.00100
Hexachloro-1,3-butadiene	U		0.000256	0.00100
2-Hexanone	U		0.00382	0.0100
Isopropylbenzene	U		0.000326	0.00100
p-Isopropyltoluene	U		0.000350	0.00100
2-Butanone (MEK)	U		0.00393	0.0100
Methylene Chloride	U		0.00100	0.00500
4-Methyl-2-pentanone (MIBK)	U		0.00214	0.0100
Methyl tert-butyl ether	U		0.000367	0.00100
Naphthalene	U		0.00100	0.00500
n-Propylbenzene	U		0.000349	0.00100
Styrene	U		0.000307	0.00100

Method Blank (MB)

(MB) 03/14/16 14:23

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
1,1,2,2-Tetrachloroethane	U		0.000130	0.00100
Tetrachloroethene	U		0.000372	0.00100
Toluene	U		0.000780	0.00500
1,1,1-Trichloroethane	U		0.000319	0.00100
1,1,2-Trichloroethane	U		0.000383	0.00100
Trichloroethene	U		0.000398	0.00100
1,2,4-Trimethylbenzene	U		0.000373	0.00100
1,3,5-Trimethylbenzene	U		0.000387	0.00100
Vinyl chloride	U		0.000259	0.00100
Xylenes, Total	U		0.00106	0.00300
(S) Toluene-d8	*102*			*90.0-115*
(S) Dibromofluoromethane	*100*			*79.0-121*
(S) 4-Bromofluorobenzene	*101*			*80.1-120*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 03/14/16 13:09 • (LCSD) 03/14/16 13:27

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acetone	0.125	0.0769	0.0796	61.5	63.7	28.7-175			3.48	20.9
Benzene	0.0250	0.0200	0.0207	80.1	82.8	73.0-122			3.35	20
Bromodichloromethane	0.0250	0.0222	0.0212	88.8	84.7	75.5-121			4.73	20
Bromoform	0.0250	0.0235	0.0237	93.8	94.6	71.5-131			0.860	20
Bromomethane	0.0250	0.0256	0.0247	102	98.7	22.4-187			3.57	20
n-Butylbenzene	0.0250	0.0217	0.0229	86.7	91.4	75.9-134			5.27	20
sec-Butylbenzene	0.0250	0.0242	0.0250	96.9	99.9	80.6-126			3.05	20
tert-Butylbenzene	0.0250	0.0235	0.0258	94.0	103	79.3-127			9.34	20
Carbon disulfide	0.0250	0.0233	0.0225	93.1	90.0	53.0-134			3.43	20
Carbon tetrachloride	0.0250	0.0201	0.0206	80.5	82.2	70.9-129			2.08	20
Chlorobenzene	0.0250	0.0245	0.0247	98.0	98.9	79.7-122			0.920	20
Chlorodibromomethane	0.0250	0.0242	0.0246	96.7	98.6	78.2-124			1.96	20
Chloroethane	0.0250	0.0234	0.0226	93.7	90.6	41.2-153			3.42	20
Chloroform	0.0250	0.0209	0.0210	83.5	84.2	73.2-125			0.780	20
Chloromethane	0.0250	0.0199	0.0194	79.4	77.8	55.8-134			2.13	20
1,2-Dibromoethane	0.0250	0.0234	0.0246	93.6	98.5	79.8-122			5.10	20
1,1-Dichloroethane	0.0250	0.0203	0.0203	81.1	81.0	71.7-127			0.140	20

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 03/14/16 13:09 • (LCSD) 03/14/16 13:27

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
1,2-Dichloroethane	0.0250	0.0200	0.0200	80.0	80.1	65.3-126			0.0200	20
1,1-Dichloroethene	0.0250	0.0228	0.0226	91.4	90.3	59.9-137			1.18	20
cis-1,2-Dichloroethene	0.0250	0.0216	0.0215	86.4	86.0	77.3-122			0.530	20
trans-1,2-Dichloroethene	0.0250	0.0226	0.0229	90.4	91.6	72.6-125			1.31	20
1,2-Dichloropropane	0.0250	0.0213	0.0208	85.2	83.0	77.4-125			2.58	20
cis-1,3-Dichloropropene	0.0250	0.0224	0.0226	89.8	90.2	77.7-124			0.480	20
trans-1,3-Dichloropropene	0.0250	0.0222	0.0216	88.9	86.5	73.5-127			2.74	20
Ethylbenzene	0.0250	0.0243	0.0250	97.1	99.8	80.9-121			2.80	20
Hexachloro-1,3-butadiene	0.0250	0.0233	0.0231	93.2	92.3	73.7-133			0.980	20
2-Hexanone	0.125	0.103	0.106	82.5	84.8	59.4-151			2.79	20
Isopropylbenzene	0.0250	0.0235	0.0241	94.0	96.6	81.6-124			2.74	20
p-Isopropyltoluene	0.0250	0.0246	0.0263	98.2	105	77.6-129			6.67	20
2-Butanone (MEK)	0.125	0.0798	0.0808	63.8	64.7	46.4-155			1.31	20
Methylene Chloride	0.0250	0.0204	0.0207	81.8	83.0	69.5-120			1.49	20
4-Methyl-2-pentanone (MIBK)	0.125	0.0994	0.0987	79.5	79.0	63.3-138			0.740	20
Methyl tert-butyl ether	0.0250	0.0197	0.0196	79.0	78.5	70.1-125			0.550	20
Naphthalene	0.0250	0.0221	0.0223	88.5	89.4	69.7-134			0.950	20
n-Propylbenzene	0.0250	0.0233	0.0243	93.3	97.3	81.9-122			4.17	20
Styrene	0.0250	0.0246	0.0254	98.6	102	79.9-124			3.04	20
1,1,2,2-Tetrachloroethane	0.0250	0.0218	0.0229	87.2	91.6	79.3-123			4.93	20
Tetrachloroethene	0.0250	0.0246	0.0248	98.3	99.2	73.5-130			0.980	20
Toluene	0.0250	0.0219	0.0216	87.5	86.4	77.9-116			1.23	20
1,1,1-Trichloroethane	0.0250	0.0212	0.0212	84.7	84.9	71.1-129			0.160	20
1,1,2-Trichloroethane	0.0250	0.0230	0.0248	92.1	99.0	81.6-120			7.30	20
Trichloroethene	0.0250	0.0228	0.0232	91.2	92.7	79.5-121			1.58	20
1,2,4-Trimethylbenzene	0.0250	0.0240	0.0250	96.0	100	79.0-122			4.27	20
1,3,5-Trimethylbenzene	0.0250	0.0236	0.0250	94.3	100	81.0-123			6.05	20
Vinyl chloride	0.0250	0.0215	0.0210	86.0	83.9	61.5-134			2.42	20
Xylenes, Total	0.0750	0.0721	0.0737	96.2	98.2	79.2-122			2.11	20
(S) Toluene-d8				*102*	*103*	*90.0-115*				
(S) Dibromofluoromethane				*97.7*	*94.7*	*79.0-121*				
(S) 4-Bromofluorobenzene				*101*	*104*	*80.1-120*				

L822693-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 03/14/16 15:28 • (MS) 03/14/16 15:46 • (MSD) 03/14/16 16:05

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Acetone	0.125	0.000725	0.0458	0.0487	36.1	38.4	1	25.0-156			6.06	21.5
Benzene	0.0250	ND	0.0215	0.0208	86.2	83.3	1	58.6-133			3.39	20
Bromodichloromethane	0.0250	0.000145	0.0237	0.0227	94.0	90.2	1	69.2-127			4.11	20
Bromoform	0.0250	ND	0.0247	0.0251	99.0	100	1	66.3-140			1.43	20
Bromomethane	0.0250	ND	0.0269	0.0221	108	88.4	1	16.6-183			19.8	20.5
n-Butylbenzene	0.0250	ND	0.0241	0.0235	96.5	93.9	1	64.8-145			2.76	20
sec-Butylbenzene	0.0250	ND	0.0244	0.0252	97.8	101	1	66.8-139			3.18	20
tert-Butylbenzene	0.0250	ND	0.0247	0.0247	98.7	98.9	1	67.1-138			0.230	20
Carbon disulfide	0.0250	ND	0.0226	0.0221	90.2	88.3	1	34.9-138			2.22	20
Carbon tetrachloride	0.0250	ND	0.0217	0.0207	86.7	82.9	1	60.6-139			4.44	20
Chlorobenzene	0.0250	ND	0.0256	0.0249	102	99.5	1	70.1-130			2.85	20
Chlorodibromomethane	0.0250	ND	0.0261	0.0259	104	103	1	71.6-132			1.01	20
Chloroethane	0.0250	ND	0.0228	0.0201	91.0	80.3	1	33.3-155			12.6	20
Chloroform	0.0250	0.000942	0.0228	0.0219	87.3	83.9	1	66.1-133			3.85	20
Chloromethane	0.0250	ND	0.0174	0.0166	69.5	66.3	1	40.7-139			4.75	20
1,2-Dibromoethane	0.0250	ND	0.0254	0.0251	101	101	1	73.8-131			0.930	20
1,1-Dichloroethane	0.0250	ND	0.0212	0.0205	84.7	82.1	1	64.0-134			3.20	20
1,2-Dichloroethane	0.0250	ND	0.0218	0.0214	87.2	85.4	1	60.7-132			2.05	20
1,1-Dichloroethene	0.0250	ND	0.0233	0.0223	93.1	89.3	1	48.8-144			4.14	20
cis-1,2-Dichloroethene	0.0250	ND	0.0227	0.0224	90.6	89.5	1	60.6-136			1.20	20
trans-1,2-Dichloroethene	0.0250	ND	0.0240	0.0229	95.9	91.6	1	61.0-132			4.54	20
1,2-Dichloropropane	0.0250	ND	0.0220	0.0216	88.0	86.6	1	69.7-130			1.67	20
cis-1,3-Dichloropropene	0.0250	ND	0.0241	0.0229	96.3	91.6	1	71.1-129			5.03	20
trans-1,3-Dichloropropene	0.0250	ND	0.0249	0.0228	99.4	91.1	1	66.3-136			8.71	20
Ethylbenzene	0.0250	ND	0.0252	0.0245	101	98.0	1	62.7-136			2.97	20
Hexachloro-1,3-butadiene	0.0250	ND	0.0238	0.0247	95.1	98.7	1	61.1-144			3.73	20.1
2-Hexanone	0.125	ND	0.0950	0.0994	76.0	79.5	1	59.4-154			4.52	20.1
Isopropylbenzene	0.0250	ND	0.0243	0.0241	97.1	96.3	1	67.4-136			0.890	20
p-Isopropyltoluene	0.0250	ND	0.0260	0.0262	104	105	1	62.8-143			0.730	20
2-Butanone (MEK)	0.125	ND	0.0651	0.0686	52.1	54.9	1	45.0-156			5.34	20.8
Methylene Chloride	0.0250	ND	0.0215	0.0210	86.2	83.9	1	61.5-125			2.72	20
4-Methyl-2-pentanone (MIBK)	0.125	ND	0.112	0.106	89.4	84.6	1	60.7-150			5.52	20
Methyl tert-butyl ether	0.0250	ND	0.0215	0.0200	86.0	80.2	1	61.4-136			7.04	20
Naphthalene	0.0250	ND	0.0232	0.0248	92.8	99.1	1	61.8-143			6.52	20
n-Propylbenzene	0.0250	ND	0.0247	0.0249	98.8	99.6	1	63.2-139			0.790	20
Styrene	0.0250	ND	0.0258	0.0261	103	105	1	68.2-133			1.38	20

L822693-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) 03/14/16 15:28 • (MS) 03/14/16 15:46 • (MSD) 03/14/16 16:05

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
1,1,2,2-Tetrachloroethane	0.0250	ND	0.0241	0.0245	96.5	97.8	1	64.9-145			1.34	20
Tetrachloroethene	0.0250	ND	0.0258	0.0249	103	99.6	1	57.4-141			3.64	20
Toluene	0.0250	ND	0.0230	0.0222	91.8	88.7	1	67.8-124			3.43	20
1,1,1-Trichloroethane	0.0250	ND	0.0219	0.0215	87.8	85.9	1	58.7-134			2.11	20
1,1,2-Trichloroethane	0.0250	ND	0.0251	0.0248	100	99.3	1	74.1-130			1.11	20
Trichloroethene	0.0250	ND	0.0238	0.0233	95.3	93.1	1	48.9-148			2.34	20
1,2,4-Trimethylbenzene	0.0250	ND	0.0249	0.0253	99.6	101	1	60.5-137			1.71	20
1,3,5-Trimethylbenzene	0.0250	ND	0.0247	0.0250	98.7	100	1	67.9-134			1.26	20
Vinyl chloride	0.0250	ND	0.0203	0.0196	81.2	78.6	1	44.3-143			3.27	20
Xylenes, Total	0.0750	ND	0.0744	0.0756	99.2	101	1	65.6-133			1.61	20
(S) Toluene-d8					*103*	*100*		*90.0-115*				
(S) Dibromofluoromethane					*96.8*	*95.6*		*79.0-121*				
(S) 4-Bromofluorobenzene					*99.6*	*99.7*		*80.1-120*				

Method Blank (MB)

(MB) 03/14/16 16:00

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Acenaphthene	U		0.000316	0.00100
Acenaphthylene	U		0.000309	0.00100
Acetophenone	U		0.00247	0.0100
Anthracene	U		0.000291	0.00100
Atrazine	U		0.000260	0.0100
Benzaldehyde	U		0.00140	0.0100
Benzo(a)anthracene	U		0.0000510	0.00100
Benzo(b)fluoranthene	U		0.0000896	0.00100
Benzo(k)fluoranthene	U		0.000355	0.00100
Benzo(g,h,i)perylene	U		0.00000227	0.00100
Benzo(a)pyrene	U		0.0000381	0.000200
Biphenyl	U		0.000325	0.0100
Bis(2-chlorethoxy)methane	U		0.000329	0.0100
Bis(2-chloroethyl)ether	U		0.00162	0.0100
Bis(2-chloroisopropyl)ether	U		0.000445	0.0100
4-Bromophenyl-phenylether	U		0.000335	0.0100
Caprolactam	U		0.00259	0.0100
Carbazole	U		0.000260	0.0100
4-Chloroaniline	U		0.000382	0.0100
2-Chloronaphthalene	U		0.000330	0.00100
4-Chlorophenyl-phenylether	U		0.000303	0.0100
Chrysene	U		0.000332	0.00100
Dibenz(a,h)anthracene	U		0.0000644	0.000200
Dibenzofuran	U		0.000338	0.0100
3,3-Dichlorobenzidine	U		0.00202	0.0100
2,4-Dinitrotoluene	U		0.00165	0.0100
2,6-Dinitrotoluene	U		0.000279	0.0100
Fluoranthene	U		0.000310	0.00100
Fluorene	U		0.000323	0.00100
Hexachlorobenzene	U		0.000341	0.00100
Hexachloro-1,3-butadiene	U		0.000329	0.0100
Hexachlorocyclopentadiene	U		0.00233	0.0100
Hexachloroethane	U		0.000365	0.0100
Indeno(1,2,3-cd)pyrene	U		0.000279	0.00100
Isophorone	U		0.000272	0.0100
1-Methylnaphthalene	U		0.000332	0.00100

Method Blank (MB)

(MB) 03/14/16 16:00

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
2-Methylnaphthalene	U		0.000311	0.00100
Naphthalene	U		0.000372	0.00100
2-Nitroaniline	U		0.00190	0.0100
3-Nitroaniline	U		0.000308	0.0100
4-Nitroaniline	U		0.000349	0.0100
Nitrobenzene	U		0.000367	0.0100
n-Nitrosodiphenylamine	U		0.000304	0.0100
n-Nitrosodi-n-propylamine	U		0.000403	0.0100
Phenanthrene	U		0.000366	0.00100
Benzylbutyl phthalate	U		0.000275	0.00300
Bis(2-ethylhexyl)phthalate	U		0.000709	0.00300
Di-n-butyl phthalate	U		0.000266	0.00300
Diethyl phthalate	U		0.000282	0.00300
Dimethyl phthalate	U		0.000283	0.00300
Di-n-octyl phthalate	U		0.000278	0.00300
Pyrene	U		0.000330	0.00100
1,2,4-Trichlorobenzene	U		0.000355	0.0100
4-Chloro-3-methylphenol	U		0.000263	0.0100
2-Chlorophenol	U		0.000283	0.0100
2-Methylphenol	U		0.000312	0.0100
3&4-Methyl Phenol	U		0.000266	0.0100
2,4-Dichlorophenol	U		0.000284	0.0100
2,4-Dimethylphenol	U		0.000624	0.0100
4,6-Dinitro-2-methylphenol	U		0.00262	0.0100
2,4-Dinitrophenol	U		0.00325	0.0100
2-Nitrophenol	U		0.000320	0.0100
4-Nitrophenol	U		0.00201	0.0100
Pentachlorophenol	U		0.000313	0.0100
Phenol	U		0.000334	0.0100
2,4,5-Trichlorophenol	U		0.000236	0.0100
2,4,6-Trichlorophenol	U		0.000297	0.0100
(S) Nitrobenzene-d5	*56.9*			*21.8-123*
(S) 2-Fluorobiphenyl	*60.6*			*29.5-131*
(S) p-Terphenyl-d14	*65.1*			*29.3-137*
(S) Phenol-d5	*29.5*			*5.00-70.1*
(S) 2-Fluorophenol	*42.7*			*10.0-77.9*

Method Blank (MB)

(MB) 03/14/16 16:00

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
(S) 2,4,6-Tribromophenol	*45.9*			*11.2-130*

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 03/14/16 15:14 • (LCSD) 03/14/16 15:37

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Acenaphthene	0.0500	0.0291	0.0298	58.2	59.6	38.7-109			2.28	21.5
Acenaphthylene	0.0500	0.0310	0.0312	61.9	62.5	36.0-106			0.880	21
Acetophenone	0.0500	0.0359	0.0347	71.8	69.5	41.6-104			3.36	24.8
Anthracene	0.0500	0.0301	0.0310	60.3	62.0	43.6-113			2.87	18.8
Atrazine	0.0500	0.0361	0.0373	72.3	74.7	50.0-123			3.22	21.5
Benzaldehyde	0.0500	0.0453	0.0500	90.6	100	11.7-132			9.80	25.2
Benzo(a)anthracene	0.0500	0.0328	0.0331	65.7	66.3	51.2-112			0.920	20
Benzo(b)fluoranthene	0.0500	0.0321	0.0326	64.2	65.2	47.6-111			1.62	20
Benzo(k)fluoranthene	0.0500	0.0306	0.0319	61.2	63.7	49.4-114			4.02	20
Benzo(g,h,i)perylene	0.0500	0.0343	0.0350	68.6	70.0	45.2-117			1.97	20
Benzo(a)pyrene	0.0500	0.0311	0.0314	62.3	62.9	45.6-106			0.940	20
Biphenyl	0.0500	0.0298	0.0301	59.7	60.2	38.0-103			0.820	20.1
Bis(2-chlorethoxy)methane	0.0500	0.0306	0.0303	61.2	60.6	37.2-111			0.960	24.1
Bis(2-chloroethyl)ether	0.0500	0.0295	0.0276	59.1	55.3	22.6-108			6.69	27.9
Bis(2-chloroisopropyl)ether	0.0500	0.0309	0.0302	61.8	60.4	32.9-100			2.34	25.1
4-Bromophenyl-phenylether	0.0500	0.0311	0.0320	62.1	64.0	40.7-116			3.04	21
Caprolactam	0.0500	0.0102	0.0103	20.4	20.6	10.0-40.4			0.680	40
Carbazole	0.0500	0.0312	0.0320	62.4	63.9	49.0-110			2.39	20
4-Chloroaniline	0.0500	0.0286	0.0285	57.2	57.1	32.0-104			0.190	26.4
2-Chloronaphthalene	0.0500	0.0295	0.0297	59.0	59.4	33.6-105			0.620	23
4-Chlorophenyl-phenylether	0.0500	0.0306	0.0310	61.1	62.0	39.0-113			1.39	20.9
Chrysene	0.0500	0.0304	0.0308	60.8	61.5	54.6-120			1.11	20
Dibenz(a,h)anthracene	0.0500	0.0344	0.0355	68.7	70.9	42.8-118			3.16	20
Dibenzofuran	0.0500	0.0305	0.0313	61.0	62.5	42.4-105			2.54	20
3,3-Dichlorobenzidine	0.0500	0.0358	0.0376	71.7	75.1	27.2-142			4.69	22.3
2,4-Dinitrotoluene	0.0500	0.0343	0.0346	68.5	69.1	31.2-105			0.900	22
2,6-Dinitrotoluene	0.0500	0.0326	0.0335	65.2	66.9	30.6-106			2.62	23.1
Fluoranthene	0.0500	0.0316	0.0322	63.1	64.3	45.9-115			1.90	20
Fluorene	0.0500	0.0307	0.0310	61.4	62.0	41.0-112			0.990	20.2

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 03/14/16 15:14 • (LCSD) 03/14/16 15:37

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hexachlorobenzene	0.0500	0.0307	0.0311	61.4	62.2	38.5-116			1.30	20.1
Hexachloro-1,3-butadiene	0.0500	0.0256	0.0254	51.3	50.7	16.1-104			1.11	31.2
Hexachlorocyclopentadiene	0.0500	0.0179	0.0170	35.9	34.1	10.0-121			5.12	27.9
Hexachloroethane	0.0500	0.0270	0.0256	54.0	51.2	16.5-89.8			5.35	30.7
Indeno(1,2,3-cd)pyrene	0.0500	0.0341	0.0348	68.1	69.6	45.0-116			2.21	20
Isophorone	0.0500	0.0332	0.0335	66.5	66.9	35.4-112			0.670	21.5
1-Methylnaphthalene	0.0500	0.0314	0.0315	62.8	62.9	34.7-102			0.110	24.9
2-Methylnaphthalene	0.0500	0.0279	0.0280	55.9	56.0	33.8-98.6			0.220	24.2
Naphthalene	0.0500	0.0273	0.0276	54.6	55.1	32.2-101			1.02	23.8
2-Nitroaniline	0.0500	0.0323	0.0330	64.5	66.1	35.6-113			2.43	20.9
3-Nitroaniline	0.0500	0.0319	0.0326	63.7	65.2	33.6-103			2.24	21.8
4-Nitroaniline	0.0500	0.0381	0.0384	76.2	76.9	35.4-124			0.850	23.1
Nitrobenzene	0.0500	0.0319	0.0313	63.9	62.7	31.4-106			1.88	25.7
n-Nitrosodiphenylamine	0.0500	0.0307	0.0311	61.4	62.2	44.4-113			1.23	20
n-Nitrosodi-n-propylamine	0.0500	0.0325	0.0318	65.1	63.7	33.2-106			2.14	23.7
Phenanthrene	0.0500	0.0295	0.0303	59.0	60.6	46.4-113			2.67	20
Benzylbutyl phthalate	0.0500	0.0351	0.0357	70.3	71.4	31.8-123			1.50	20.7
Bis(2-ethylhexyl)phthalate	0.0500	0.0317	0.0332	63.4	66.3	36.9-134			4.45	23.6
Di-n-butyl phthalate	0.0500	0.0332	0.0340	66.3	68.0	41.8-120			2.55	20.2
Diethyl phthalate	0.0500	0.0342	0.0347	68.3	69.4	36.5-129			1.54	20
Dimethyl phthalate	0.0500	0.0325	0.0331	65.0	66.2	35.3-128			1.80	20.8
Di-n-octyl phthalate	0.0500	0.0345	0.0350	68.9	70.0	39.7-112			1.53	21.1
Pyrene	0.0500	0.0321	0.0329	64.2	65.9	46.3-117			2.52	20
1,2,4-Trichlorobenzene	0.0500	0.0260	0.0258	52.0	51.6	22.9-96.1			0.870	27.5
4-Chloro-3-methylphenol	0.0500	0.0336	0.0339	67.1	67.8	35.7-100			0.980	22.9
2-Chlorophenol	0.0500	0.0274	0.0261	54.8	52.2	26.2-91.5			4.87	26.5
2-Methylphenol	0.0500	0.0282	0.0262	56.5	52.4	26.4-86.9			7.51	26.5
3&4-Methyl Phenol	0.0500	0.0293	0.0272	58.7	54.3	27.9-92.0			7.76	27
2,4-Dichlorophenol	0.0500	0.0316	0.0323	63.3	64.7	31.4-103			2.17	24.9
2,4-Dimethylphenol	0.0500	0.0333	0.0324	66.7	64.8	31.9-107			2.88	25.7
4,6-Dinitro-2-methylphenol	0.0500	0.0414	0.0427	82.7	85.5	18.4-148			3.24	24.4
2,4-Dinitrophenol	0.0500	0.0185	0.0178	37.0	35.5	24.2-128			4.15	20.5
2-Nitrophenol	0.0500	0.0341	0.0339	68.1	67.8	25.9-106			0.520	26.9
4-Nitrophenol	0.0500	0.0107	0.00991	21.5	19.8	10.0-52.7			8.13	40
Pentachlorophenol	0.0500	0.0258	0.0287	51.6	57.3	10.0-97.4			10.6	35.1
Phenol	0.0500	0.0134	0.0119	26.8	23.7	10.0-57.9			11.9	35

Laboratory Control Sample (LCS) • Laboratory Control Sample Duplicate (LCSD)

(LCS) 03/14/16 15:14 • (LCSD) 03/14/16 15:37

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
2,4,5-Trichlorophenol	0.0500	0.0333	0.0334	66.7	66.7	34.9-112			0.0900	23.9
2,4,6-Trichlorophenol	0.0500	0.0331	0.0329	66.3	65.9	29.8-107			0.640	24.1
(S) Nitrobenzene-d5				*62.2*	*59.4*	*21.8-123*				
(S) 2-Fluorobiphenyl				*60.7*	*61.3*	*29.5-131*				
(S) p-Terphenyl-d14				*67.1*	*68.5*	*29.3-137*				
(S) Phenol-d5				*26.2*	*23.5*	*5.00-70.1*				
(S) 2-Fluorophenol				*32.0*	*29.2*	*10.0-77.9*				
(S) 2,4,6-Tribromophenol				*58.6*	*60.9*	*11.2-130*				

Abbreviations and Definitions

SDG	Sample Delivery Group.
MDL	Method Detection Limit.
RDL	Reported Detection Limit.
ND,U	Not detected at the Sample Detection Limit.
RPD	Relative Percent Difference.
(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
Rec.	Recovery.
SDL	Sample Detection Limit.
MQL	Method Quantitation Limit.
Unadj. MQL	Unadjusted Method Quantitation Limit.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
V	The sample concentration is too high to evaluate accurate spike recoveries.

ESC Lab Sciences is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our "one location" design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be **YOUR LAB OF CHOICE.**

***** Not all certifications held by the laboratory are applicable to the results reported in the attached report.

State Accreditations

Alabama	40660	Nevada	TN-03-2002-34
Alaska	UST-080	New Hampshire	2975
Arizona	AZ0612	New Jersey–NELAP	TN002
Arkansas	88-0469	New Mexico	TN00003
California	01157CA	New York	11742
Colorado	TN00003	North Carolina	Env375
Conneticut	PH-0197	North Carolina [1]	DW21704
Florida	E87487	North Carolina [2]	41
Georgia	NELAP	North Dakota	R-140
Georgia [1]	923	Ohio–VAP	CL0069
Idaho	TN00003	Oklahoma	9915
Illinois	200008	Oregon	TN200002
Indiana	C-TN-01	Pennsylvania	68-02979
Iowa	364	Rhode Island	221
Kansas	E-10277	South Carolina	84004
Kentucky [1]	90010	South Dakota	n/a
Kentucky [2]	16	Tennessee [1 4]	2006
Louisiana	AI30792	Texas	T 104704245-07-TX
Maine	TN0002	Texas [5]	LAB0152
Maryland	324	Utah	6157585858
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	109
Minnesota	047-999-395	Washington	C1915
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA
Nebraska	NE-OS-15-05		

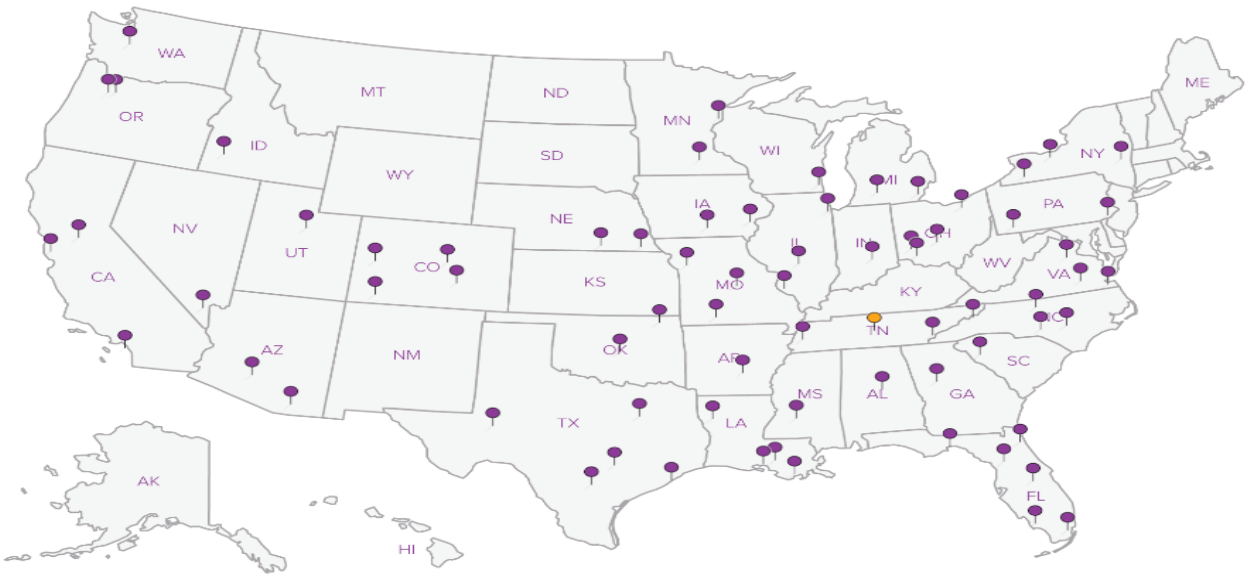
Third Party & Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA	100789
A2LA – ISO 17025 [5]	1461.02	DOD	1461.01
Canada	1461.01	USDA	S-67674
EPA–Crypto	TN00003		

[1] Drinking Water [2] Underground Storage Tanks [3] Aquatic Toxicity [4] Chemical/Microbiological [5] Mold [n/a] Accreditation not applicable

Our Locations

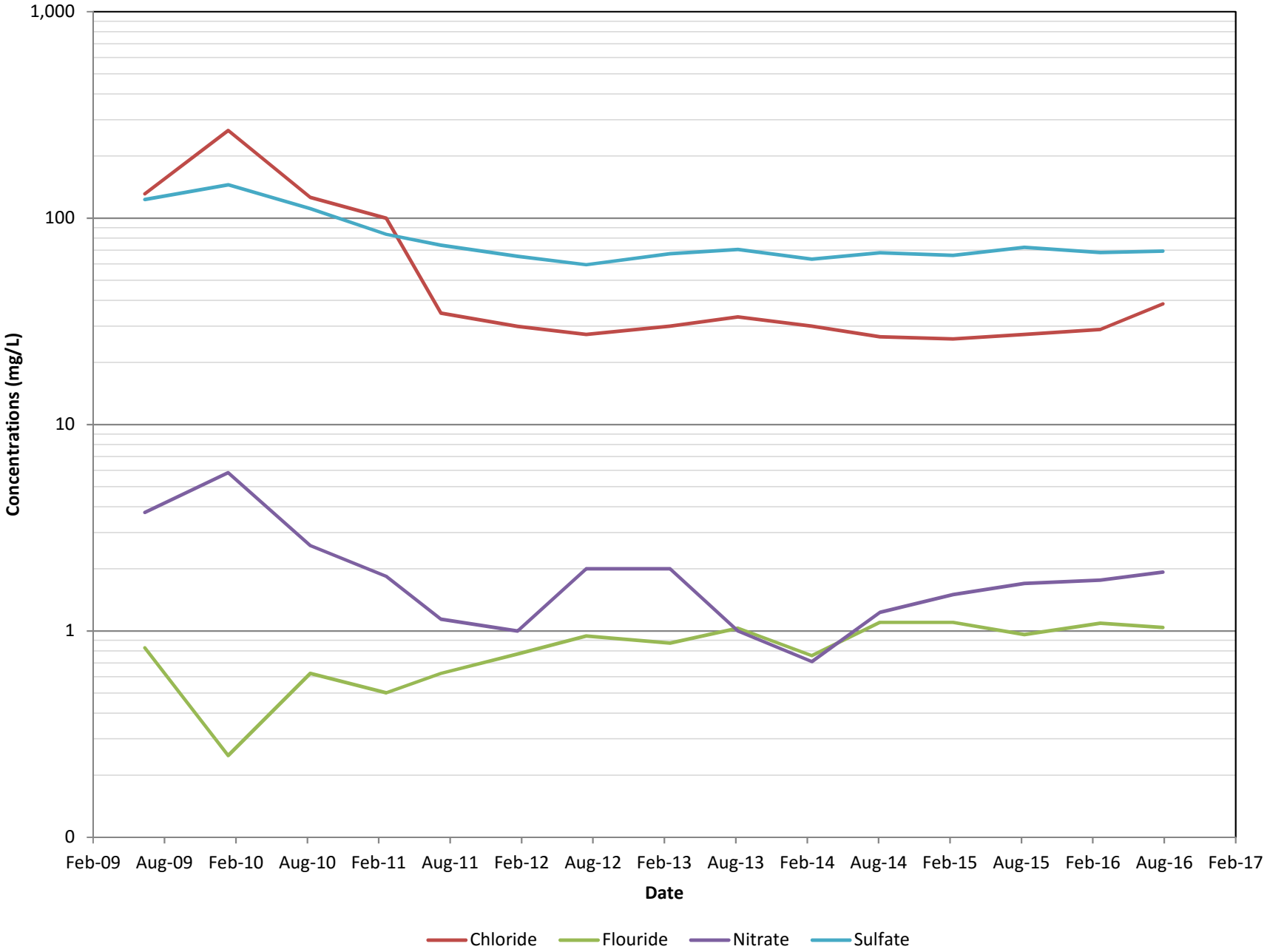
ESC Lab Sciences has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. **ESC Lab Sciences performs all testing at our central laboratory.**



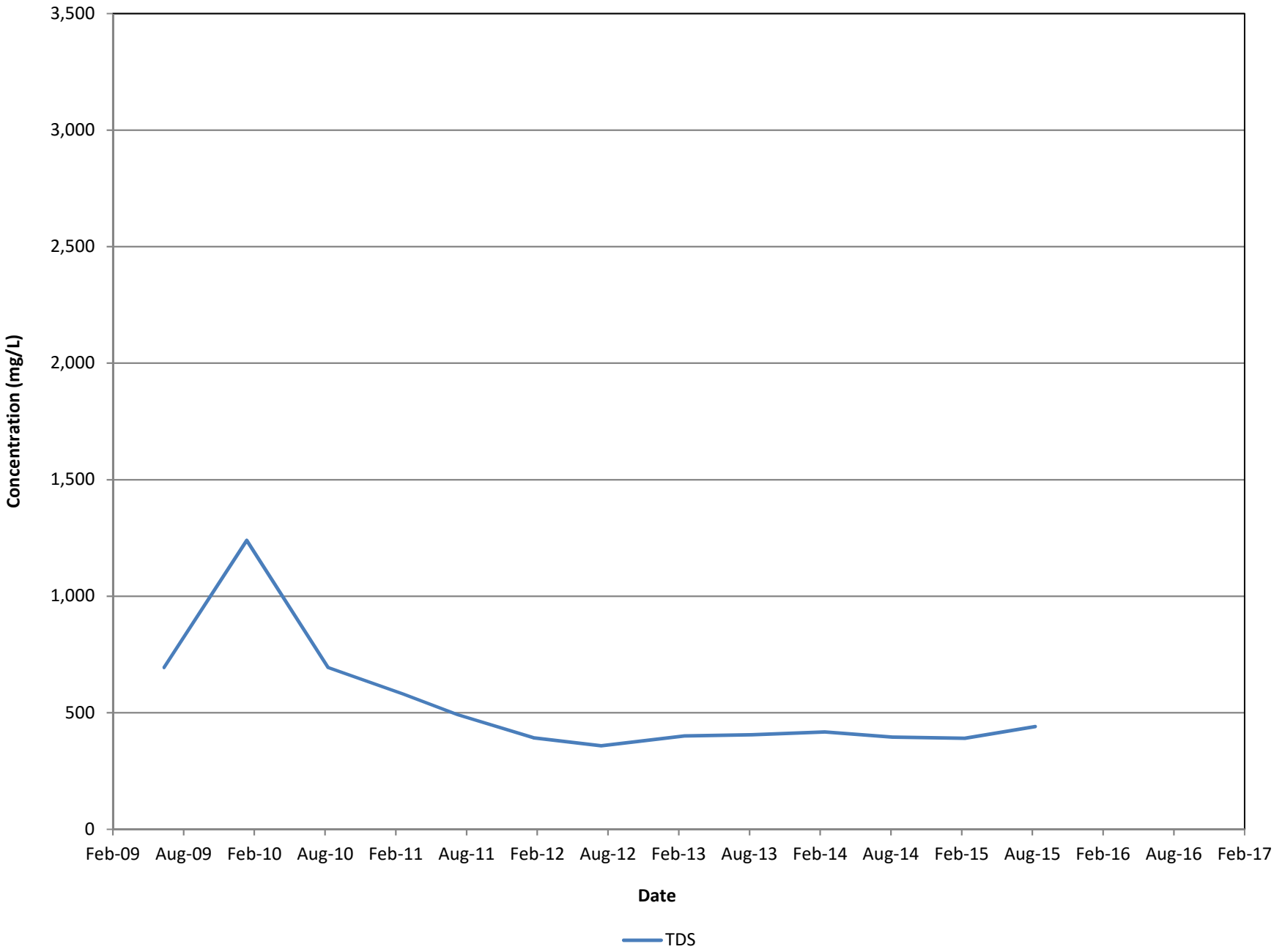
APPENDIX C

PLOTS OF GROUNDWATER CONCENTRATIONS OVER TIME

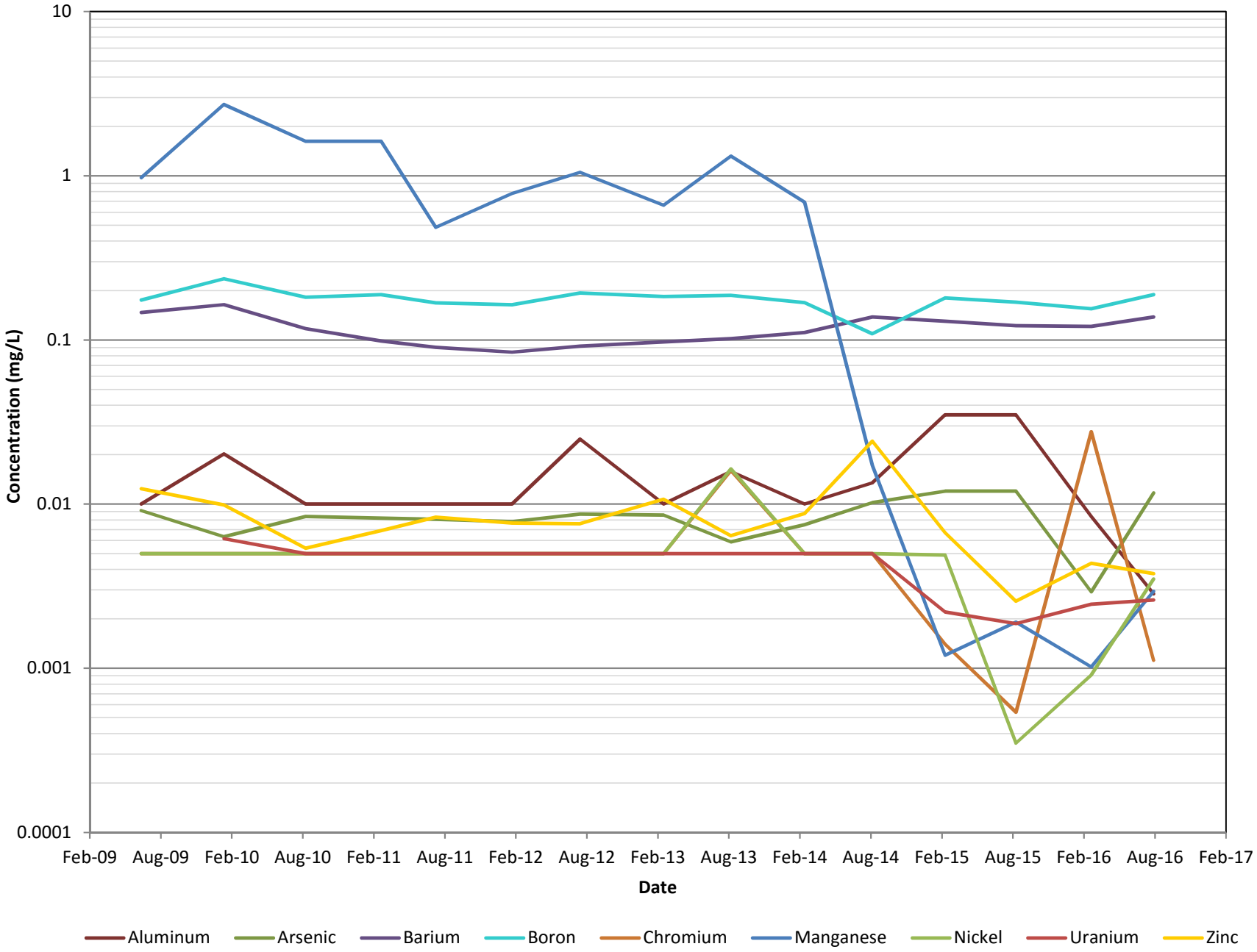
MW-1: ANION CONCENTRATIONS OVER TIME



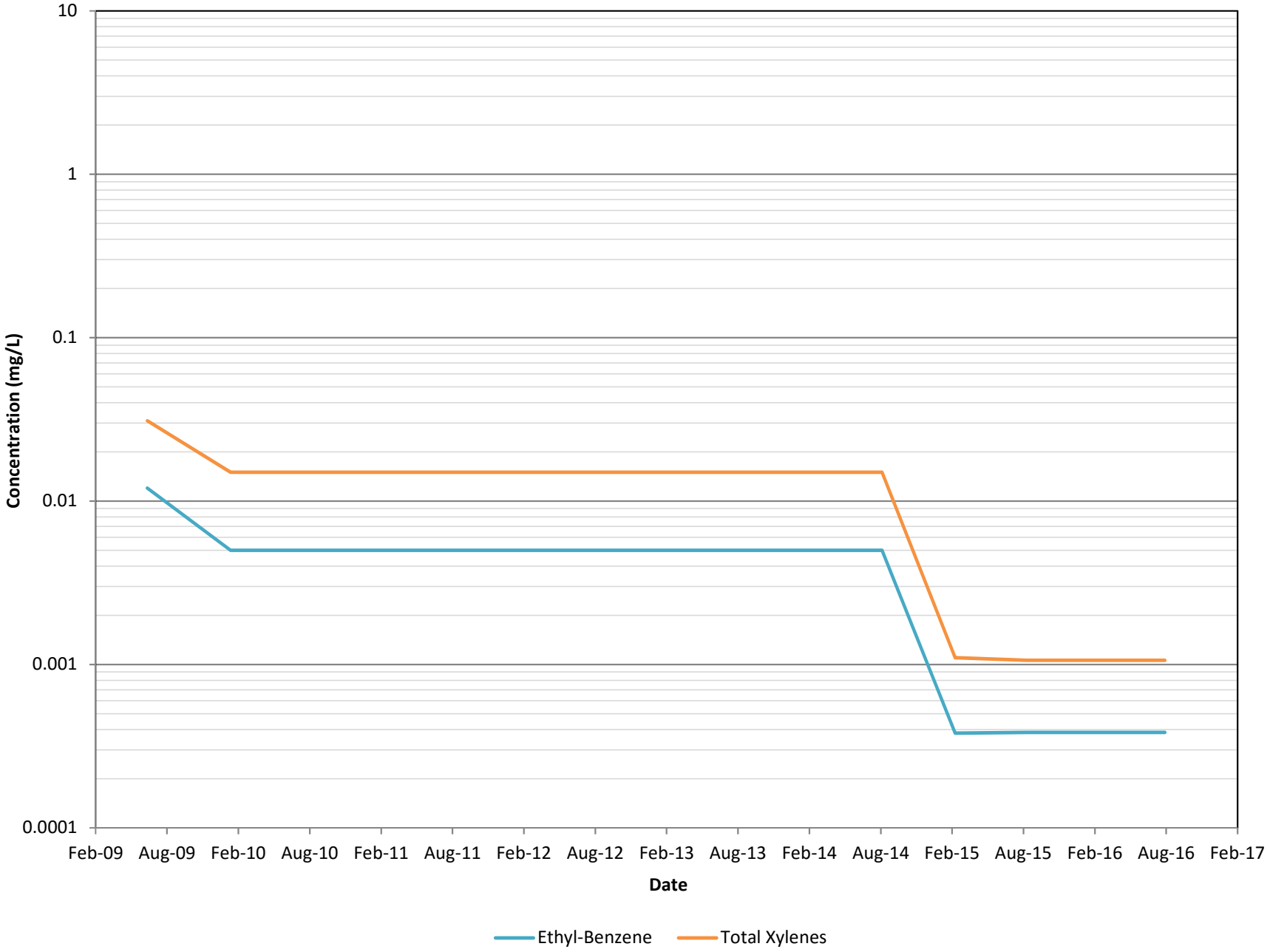
MW-1: TDS CONCENTRATIONS OVER TIME



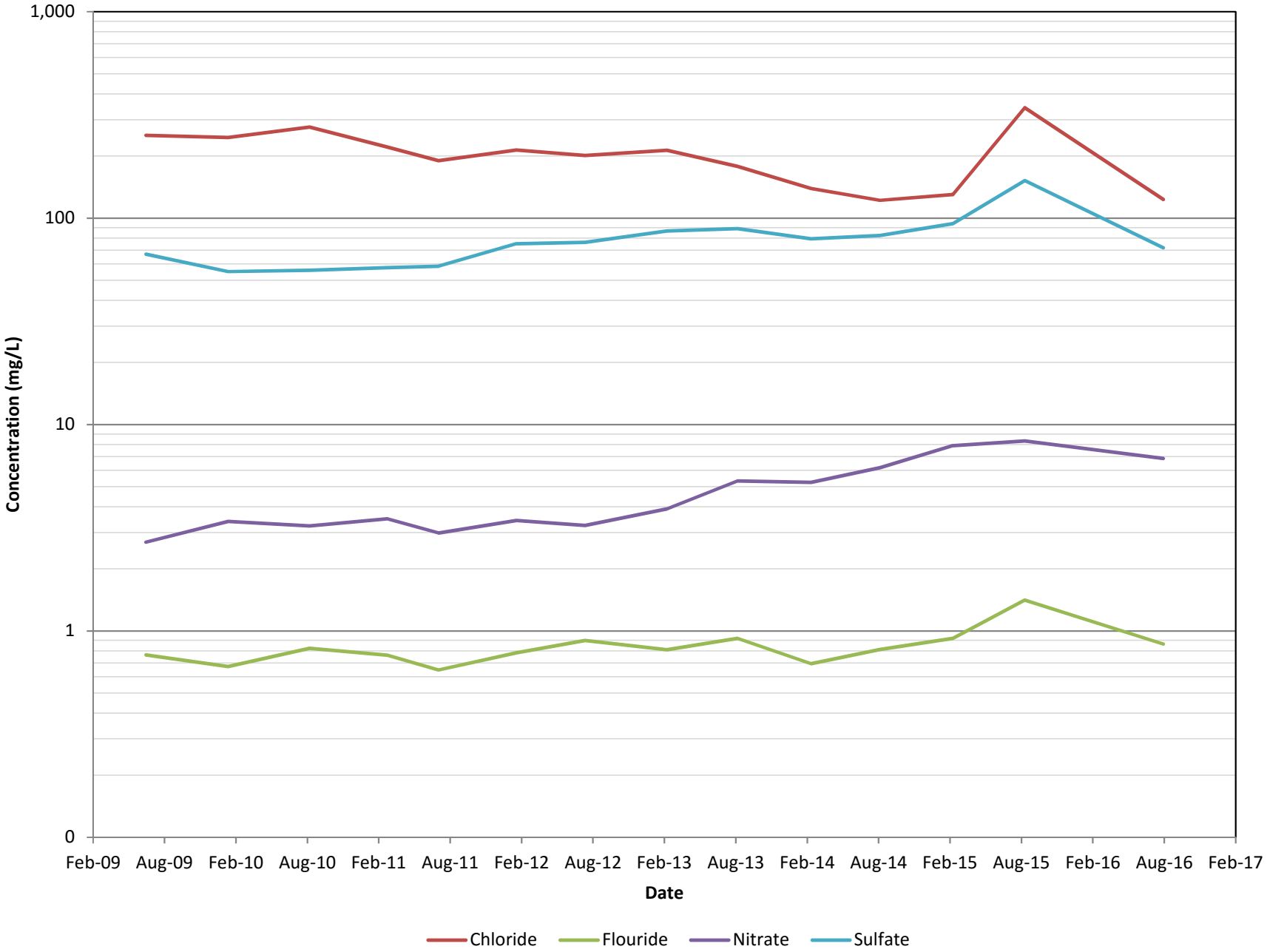
MW-1: METAL CONCENTRATIONS OVER TIME



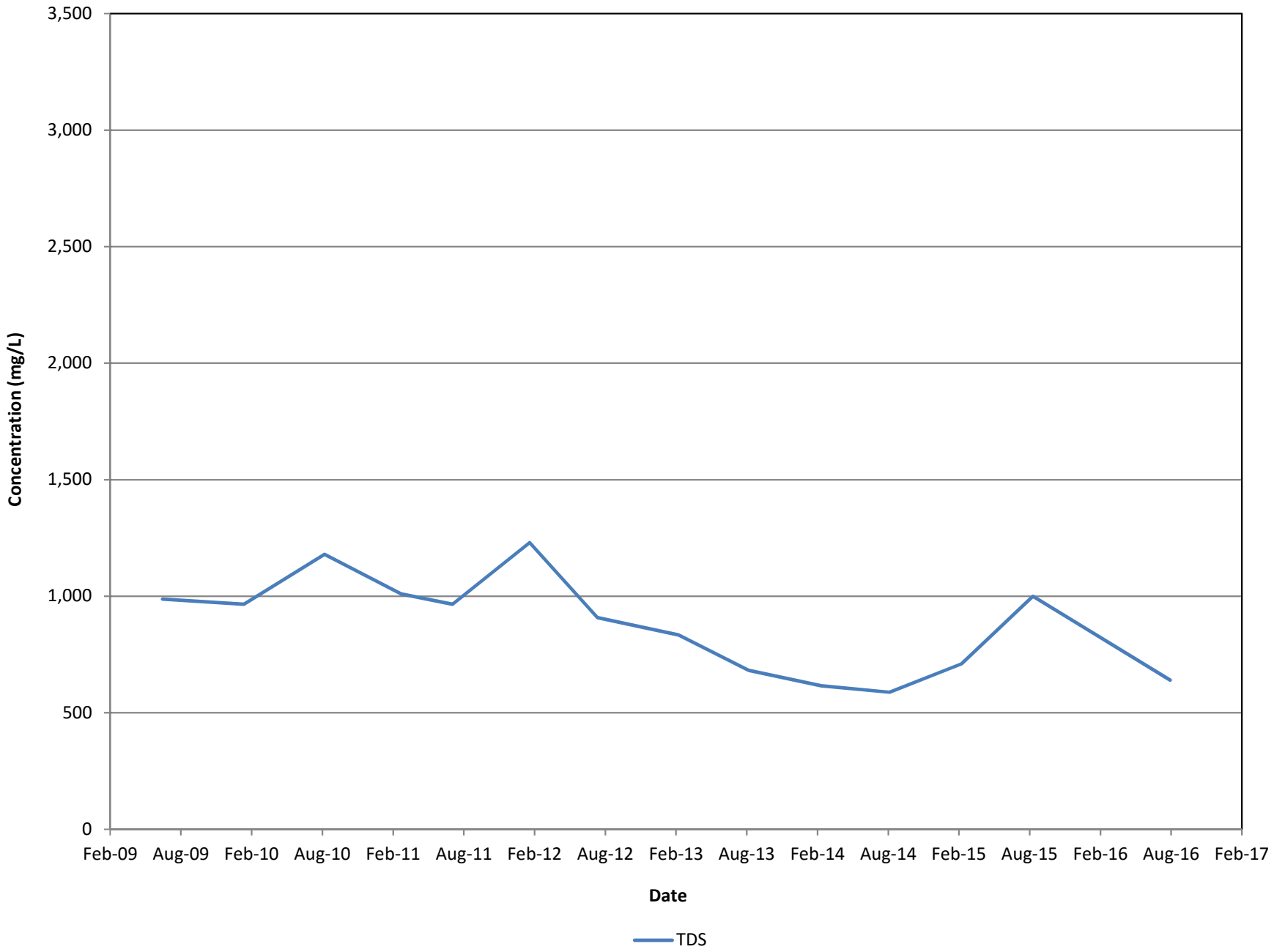
MW-1: VOC CONCENTRATIONS OVER TIME



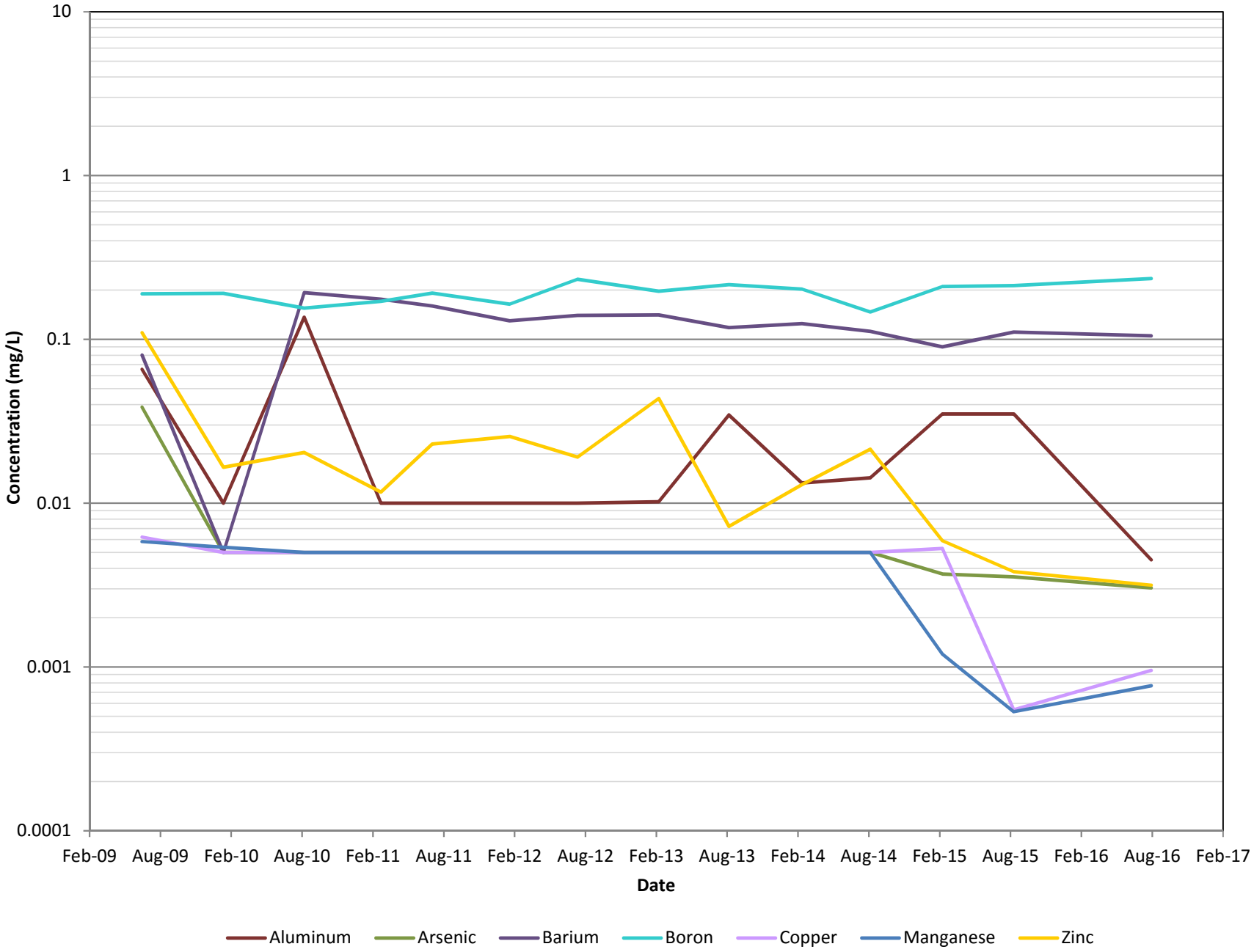
MW-2: ANION CONCENTRATIONS OVER TIME



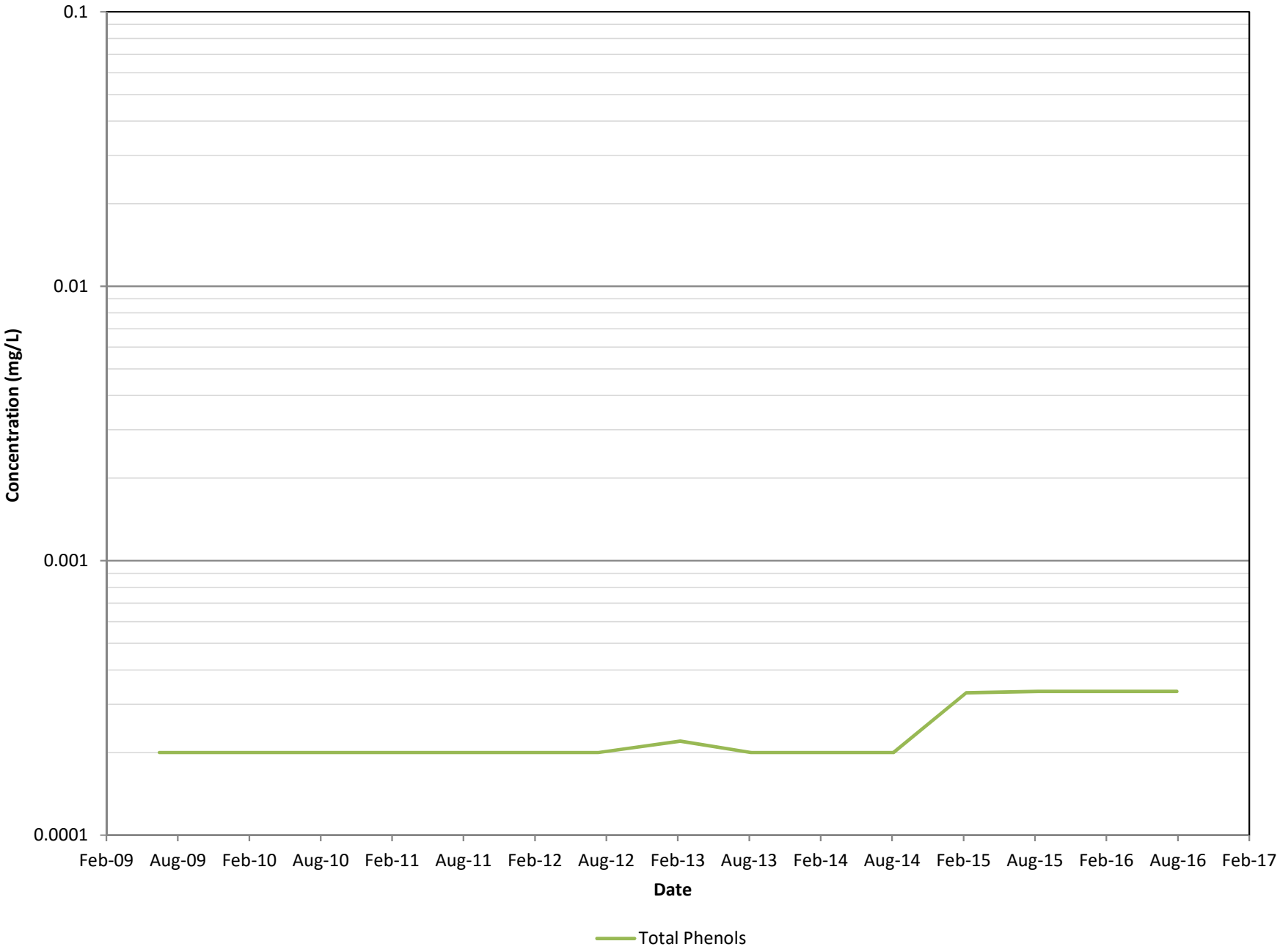
MW-2: TDS CONCENTRATIONS OVER TIME



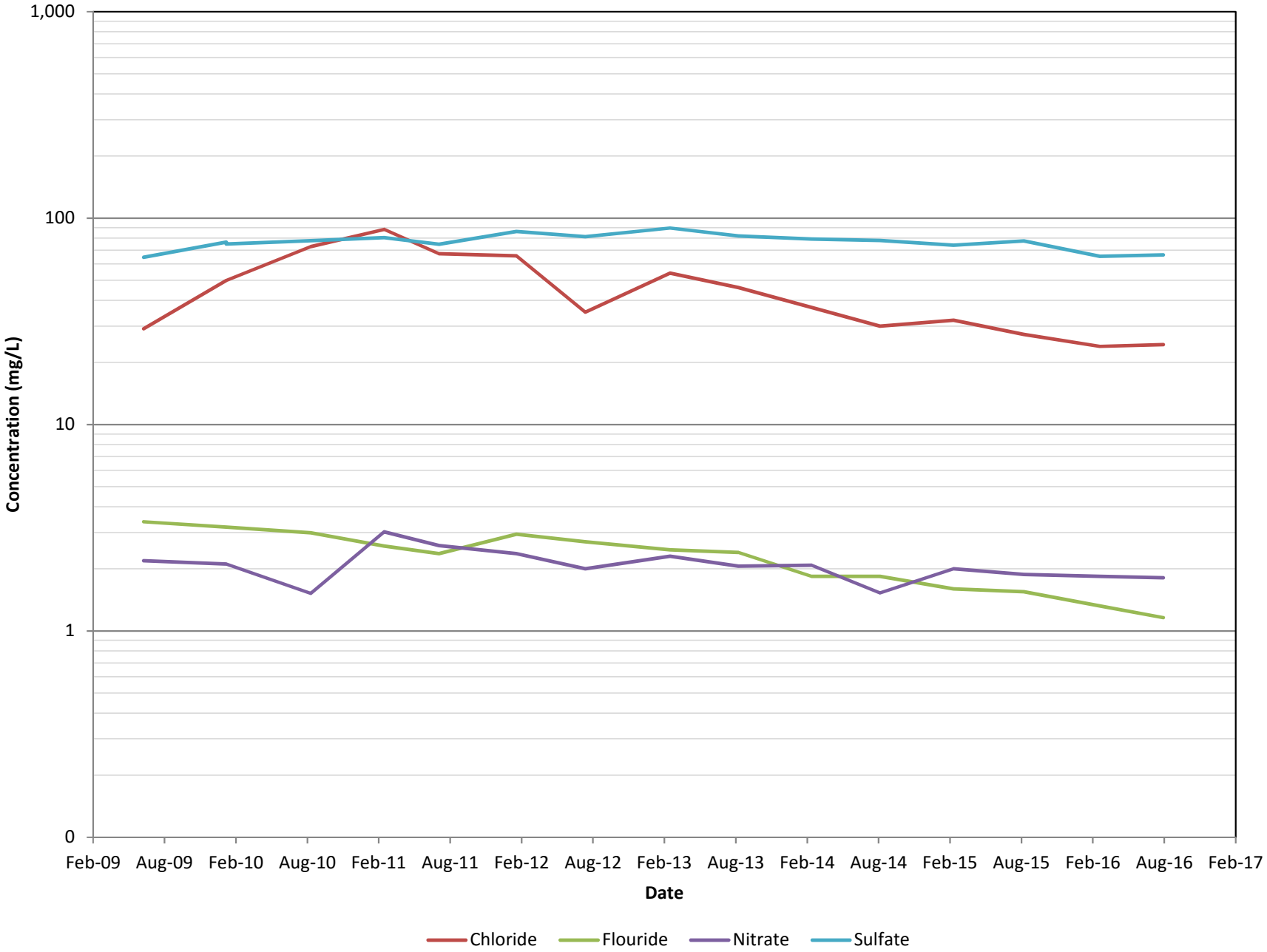
MW-2: METAL CONCENTRATIONS OVER TIME



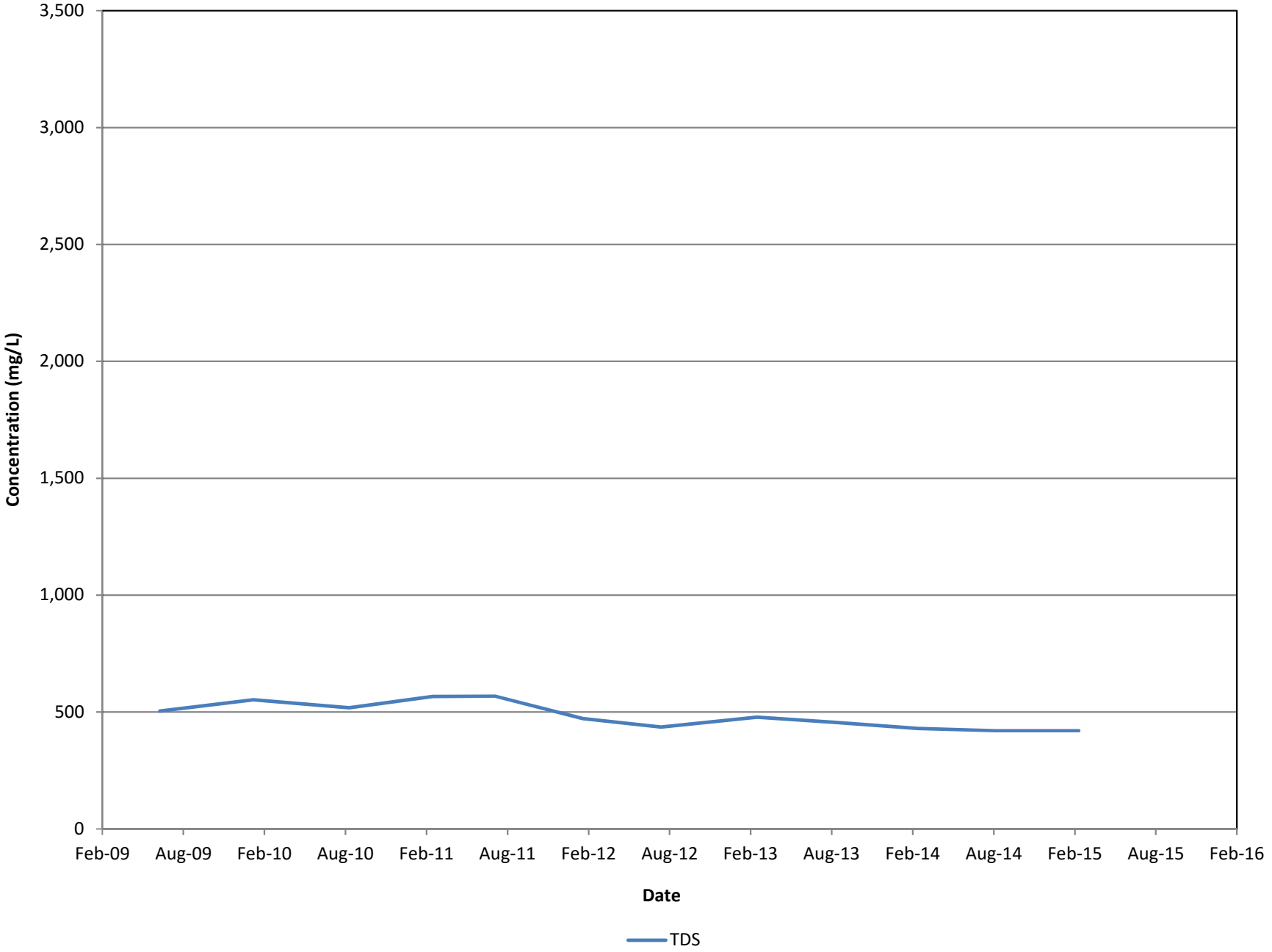
MW-2: SVOC CONCENTRATIONS OVER TIME



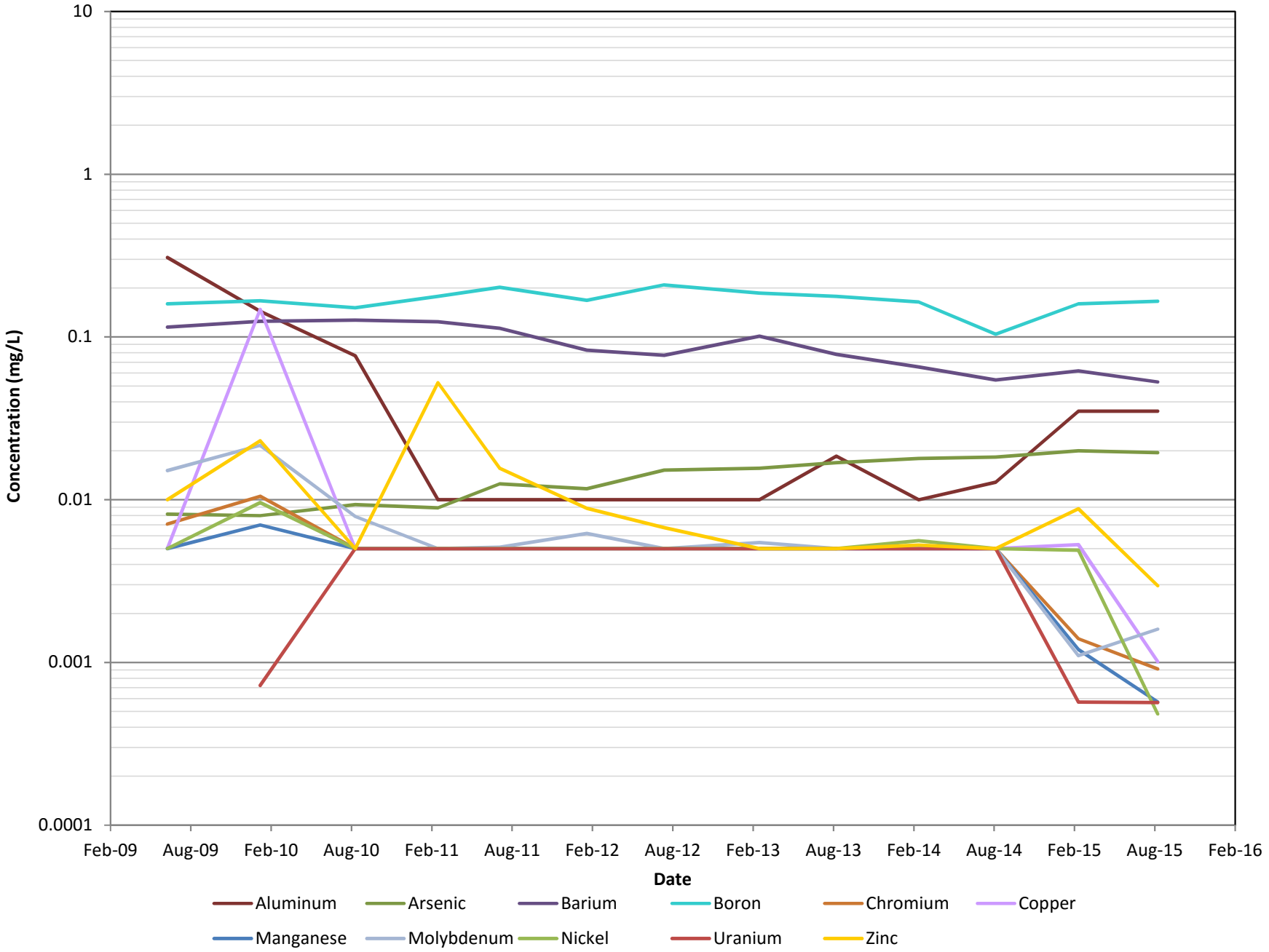
MW-3: ANION CONCENTRATIONS OVER TIME



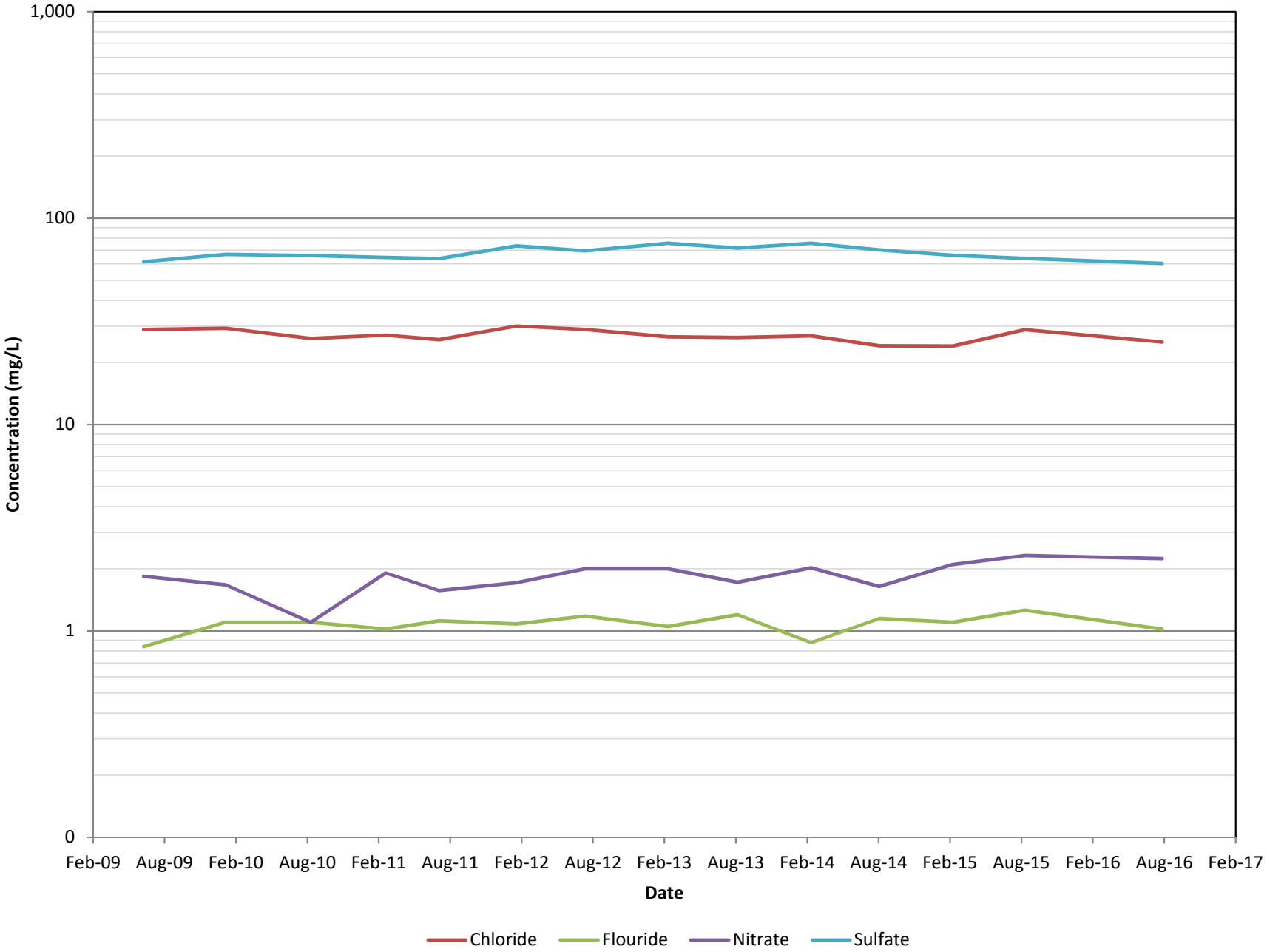
MW-3: TDS CONCENTRATIONS OVER TIME



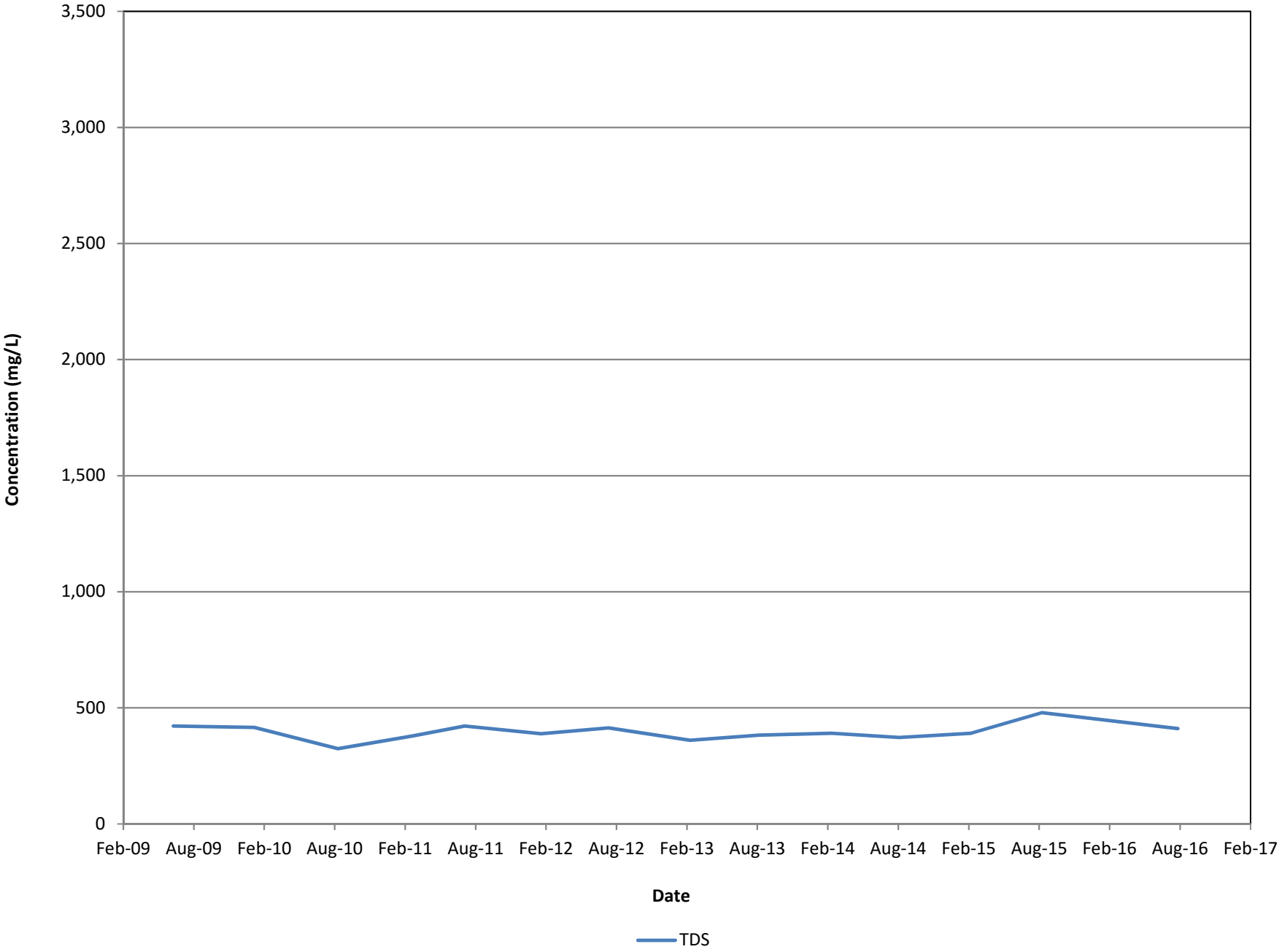
MW-3: METAL CONCENTRATIONS OVER TIME



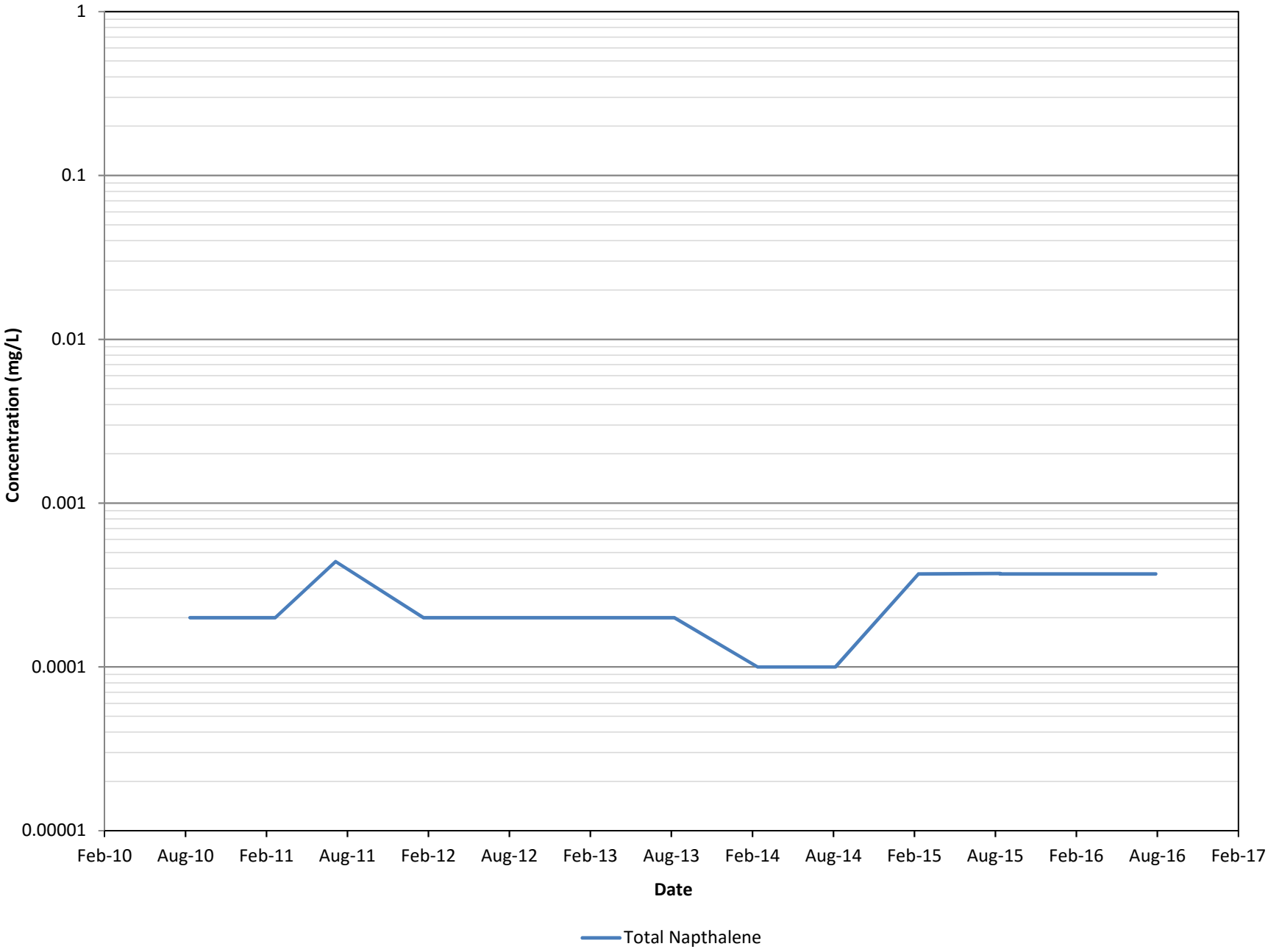
MW-4: ANION CONCENTRATIONS OVER TIME



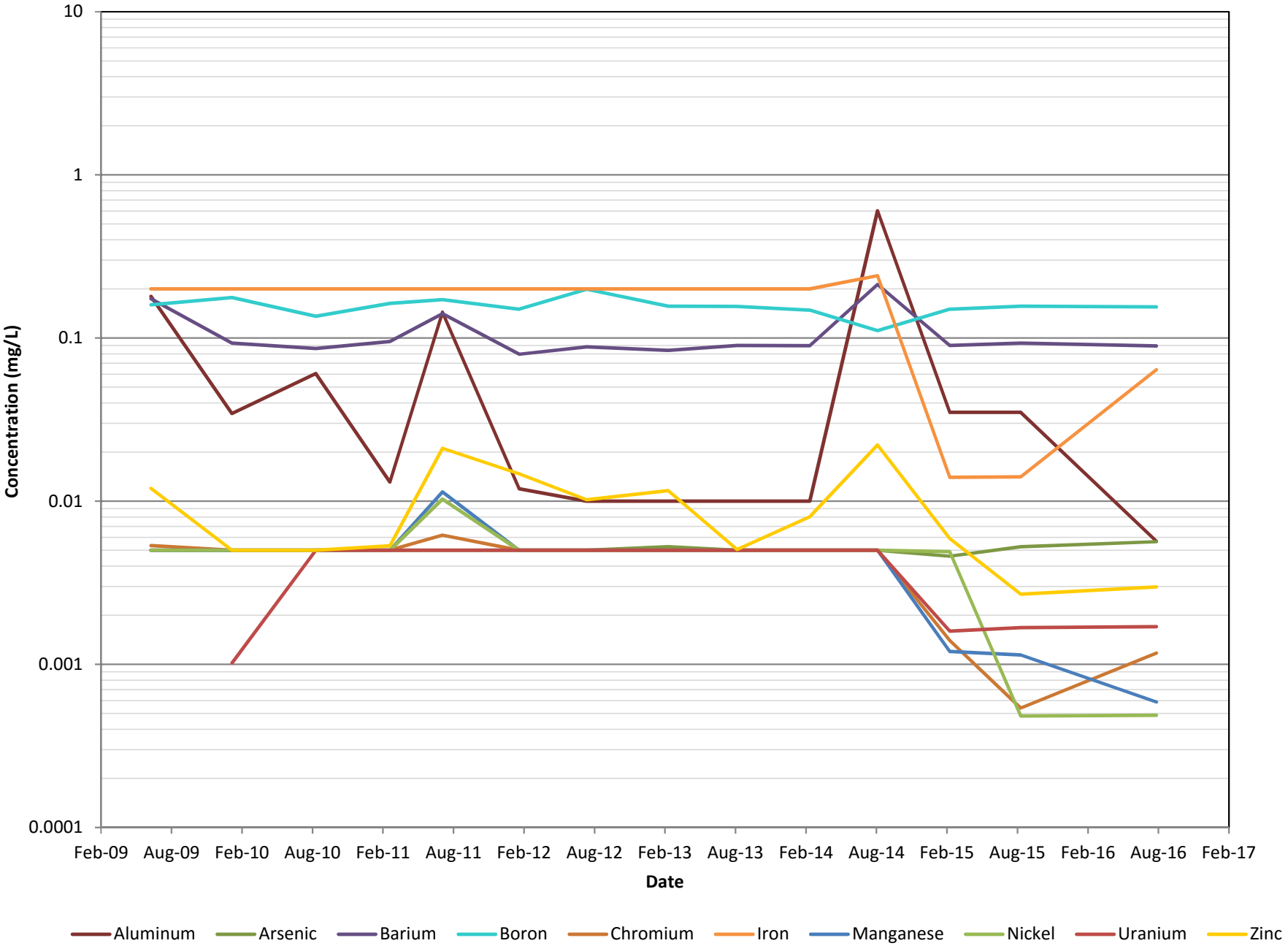
MW-4: TDS CONCENTRATIONS OVER TIME



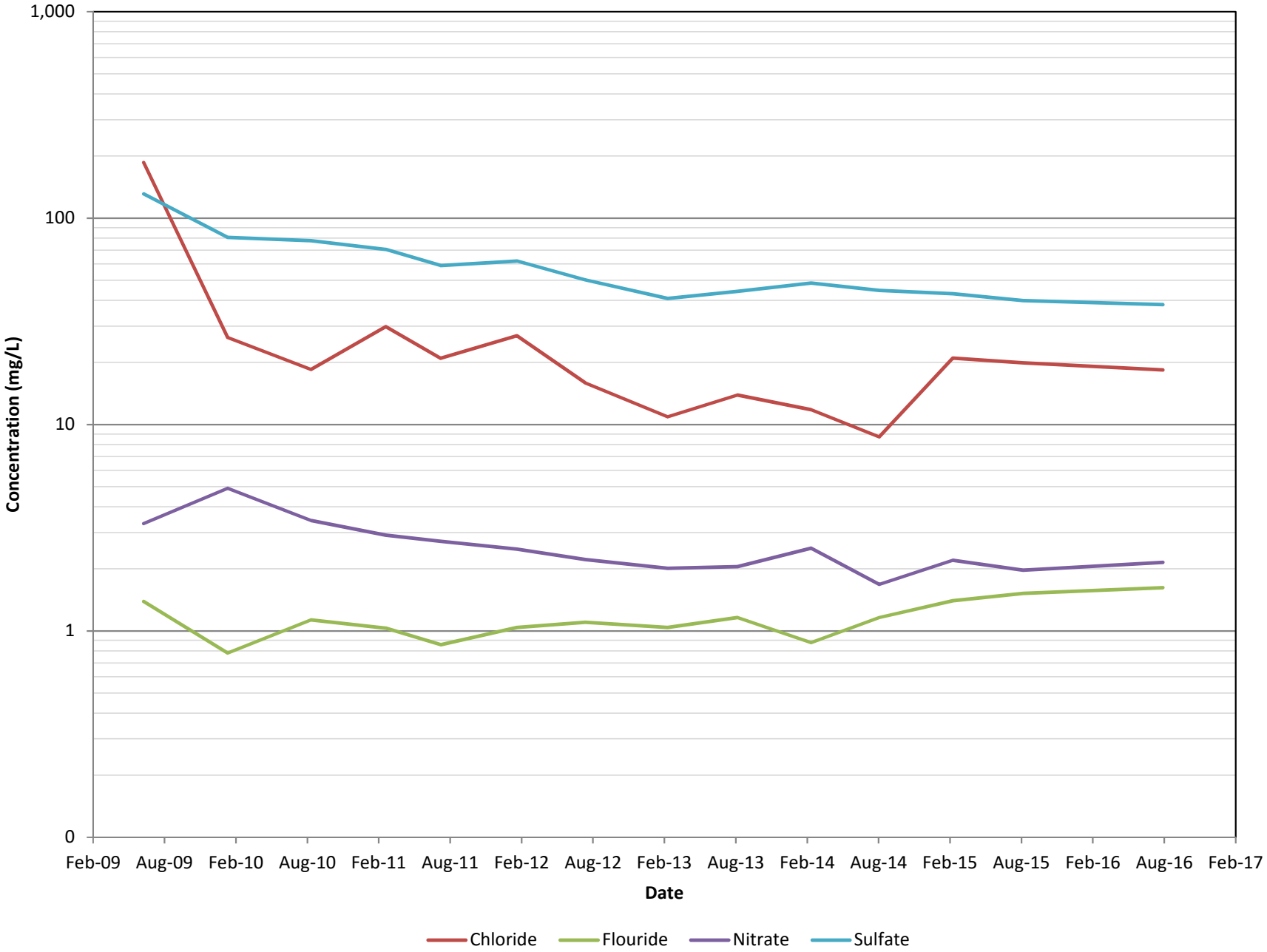
MW-4: SVOC CONCENTRATIONS OVER TIME



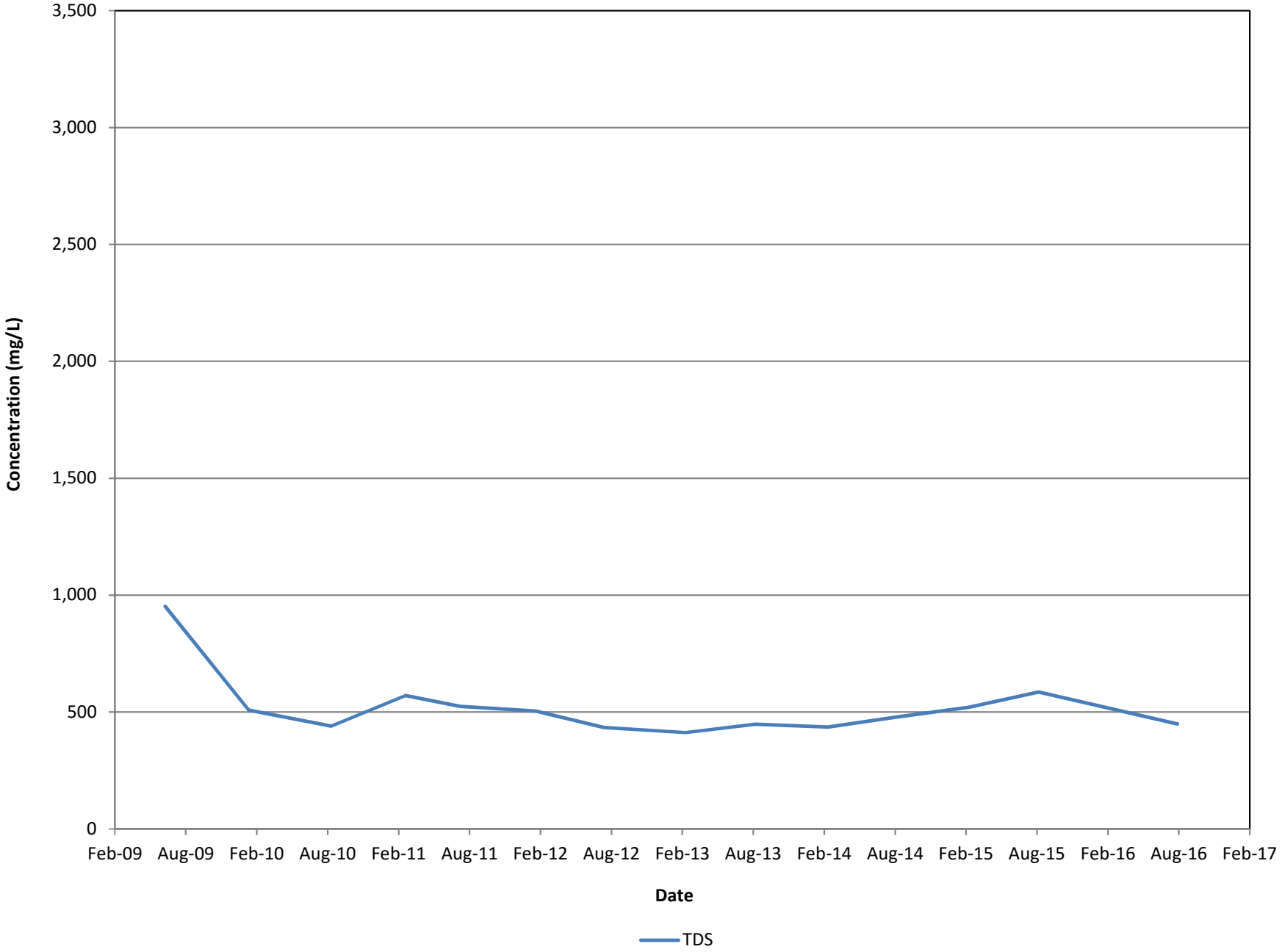
MW-4: METAL CONCENTRATIONS OVER TIME



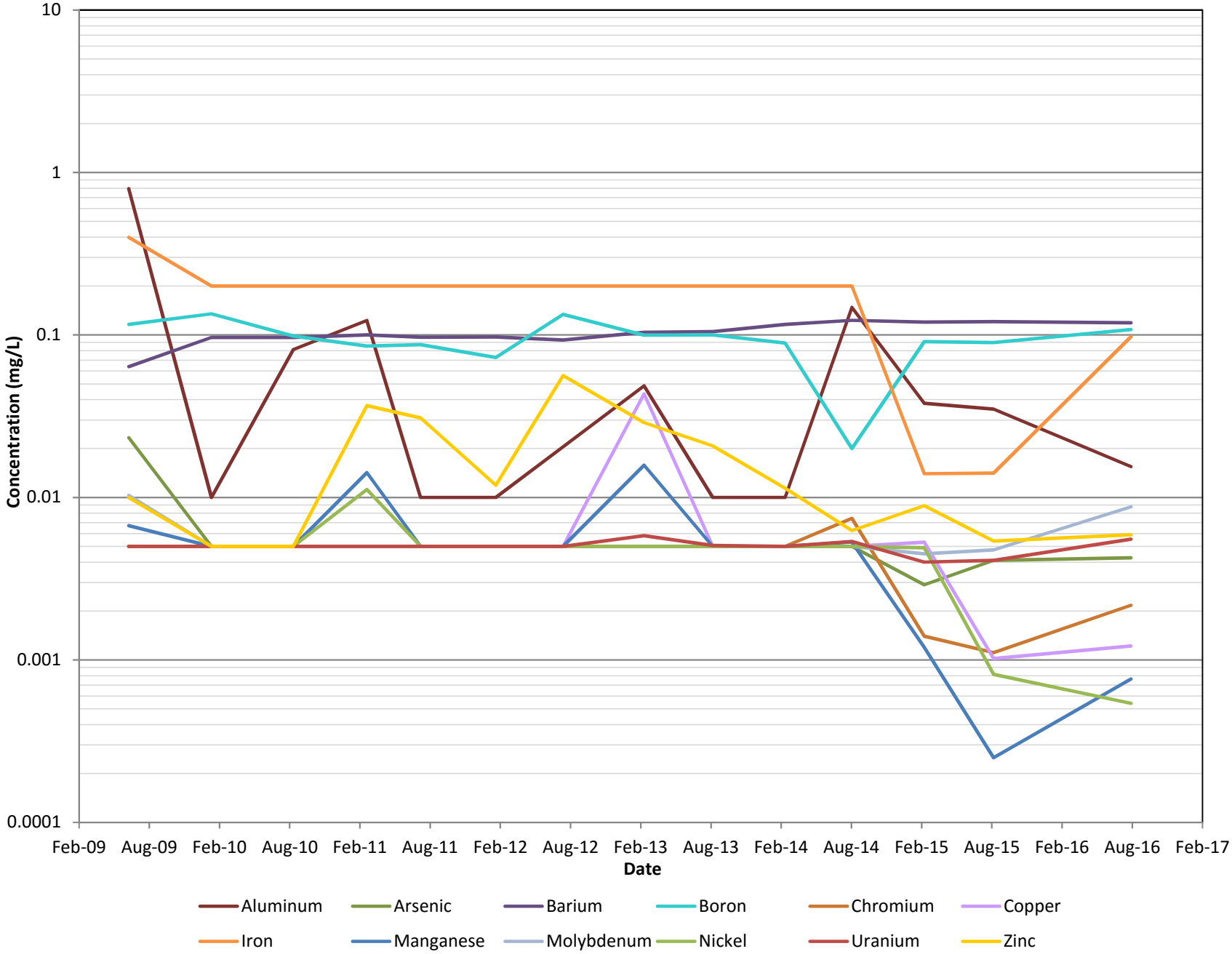
MW-5: ANION CONCENTRATIONS OVER TIME



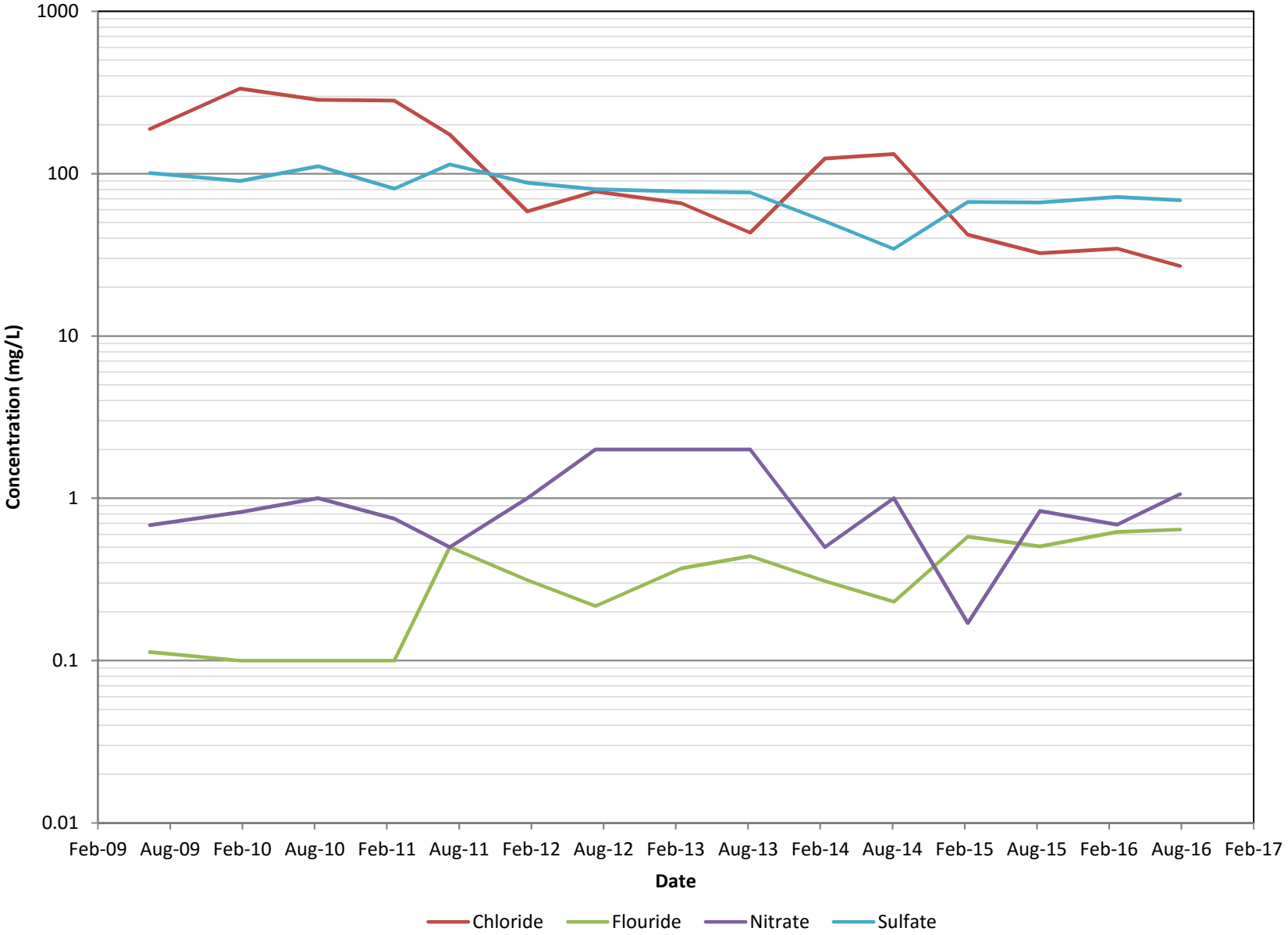
MW-5: TDS CONCENTRATIONS OVER TIME



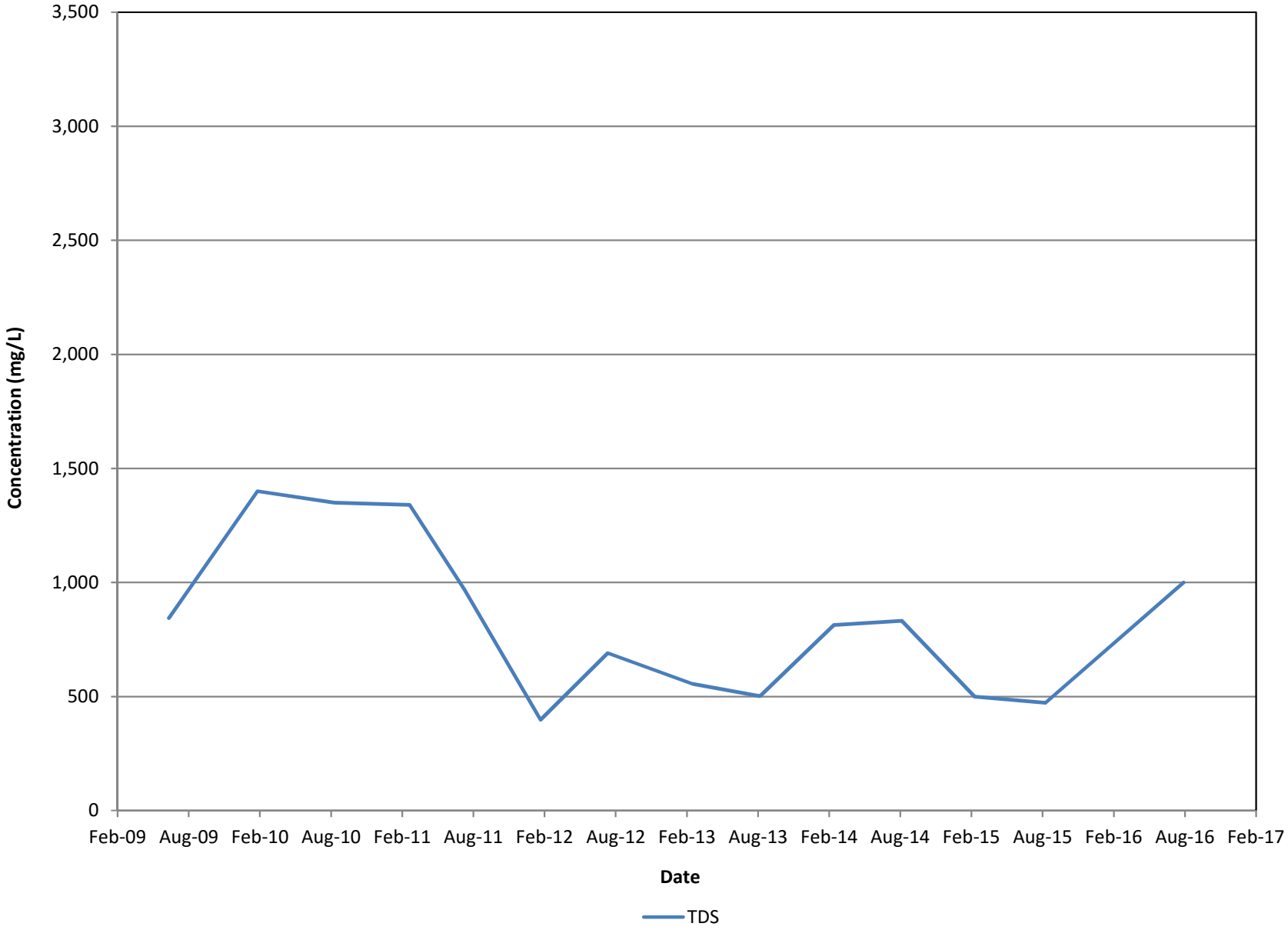
MW-5: METAL CONCENTRATIONS OVER TIME



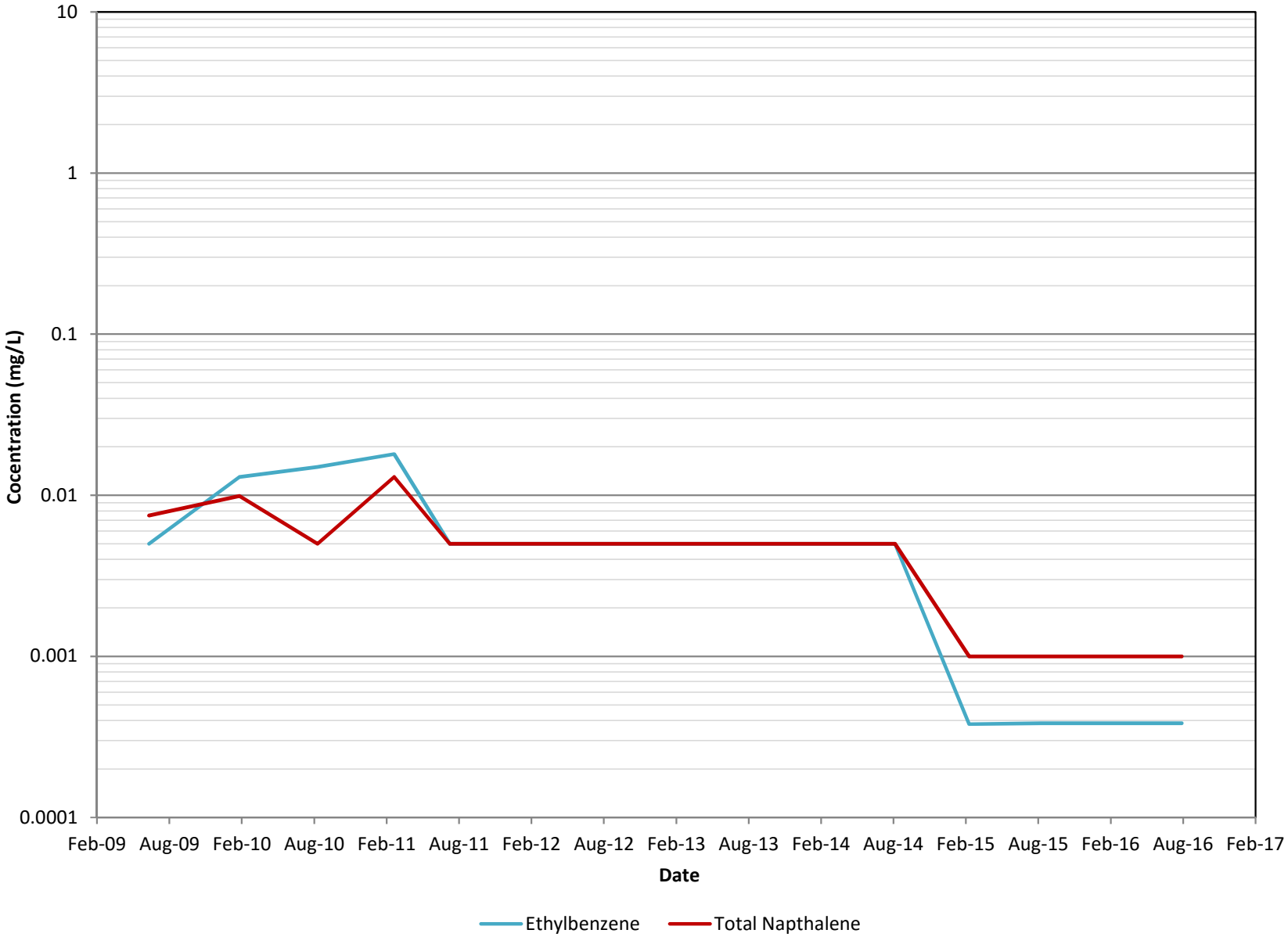
MW-6: ANION CONCENTRATIONS OVER TIME



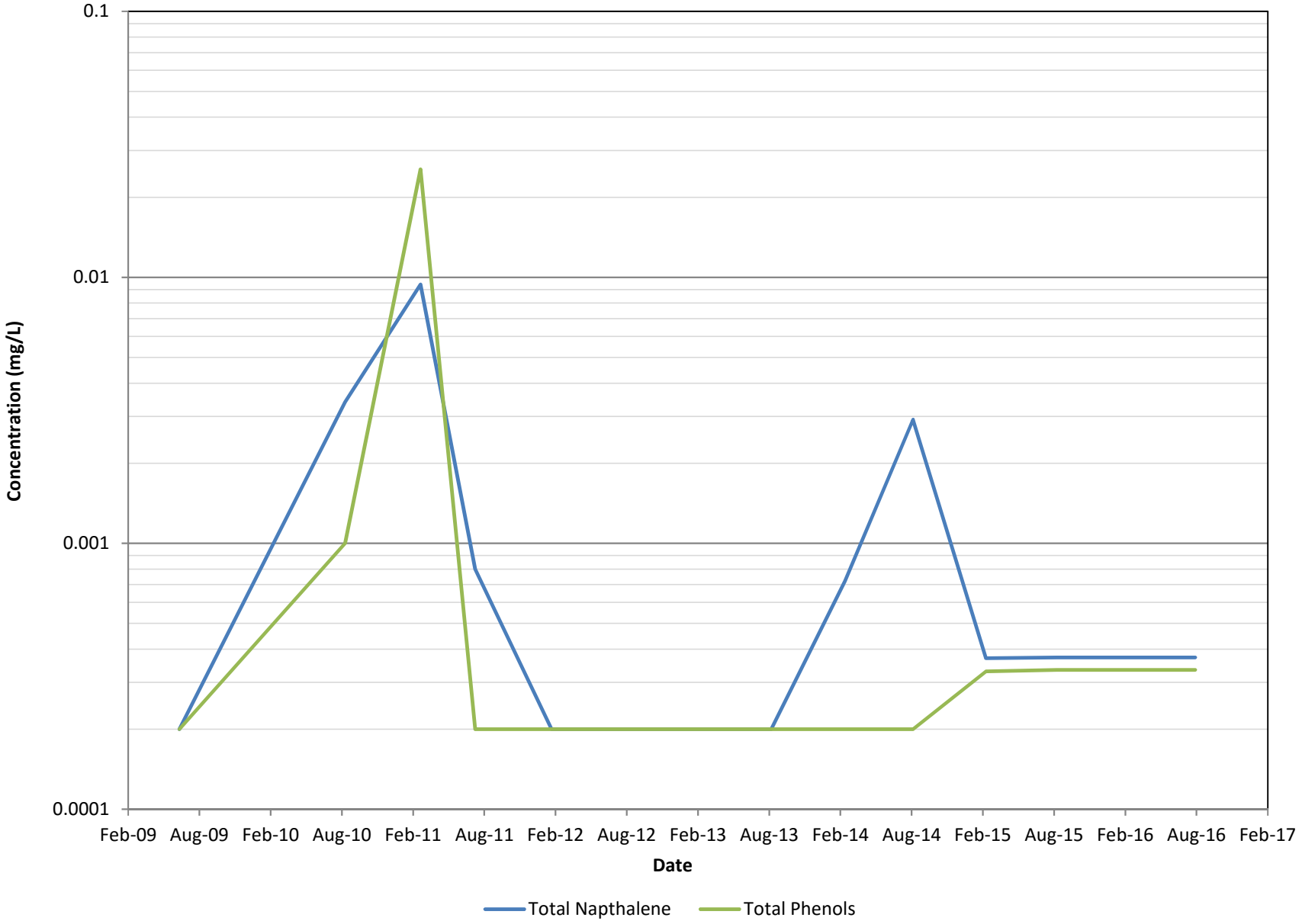
MW-6: TDS CONCENTRATIONS OVER TIME



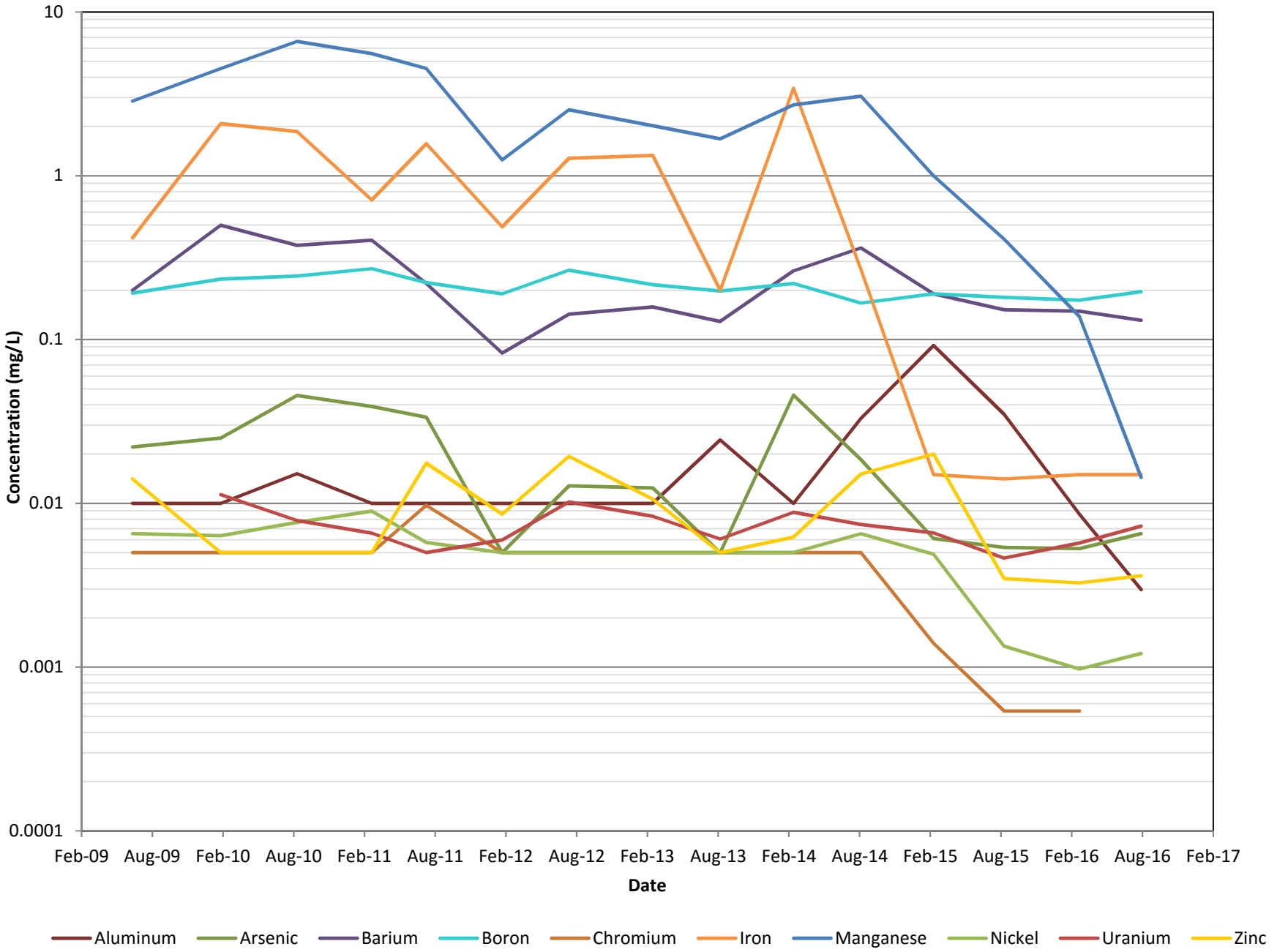
MW-6: VOC CONCENTRATIONS OVER TIME



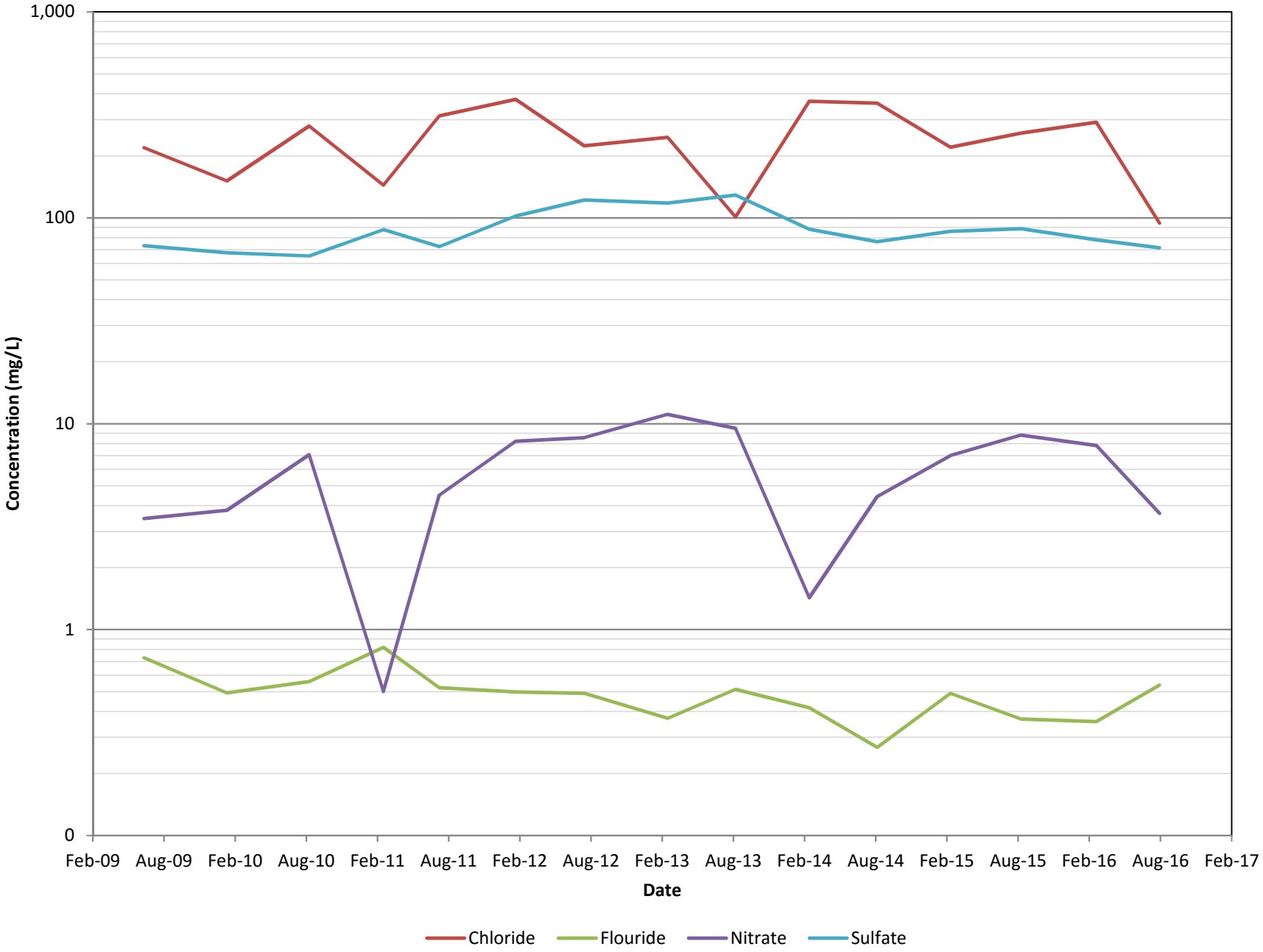
MW-6: SVOC CONCENTRATIONS OVER TIME



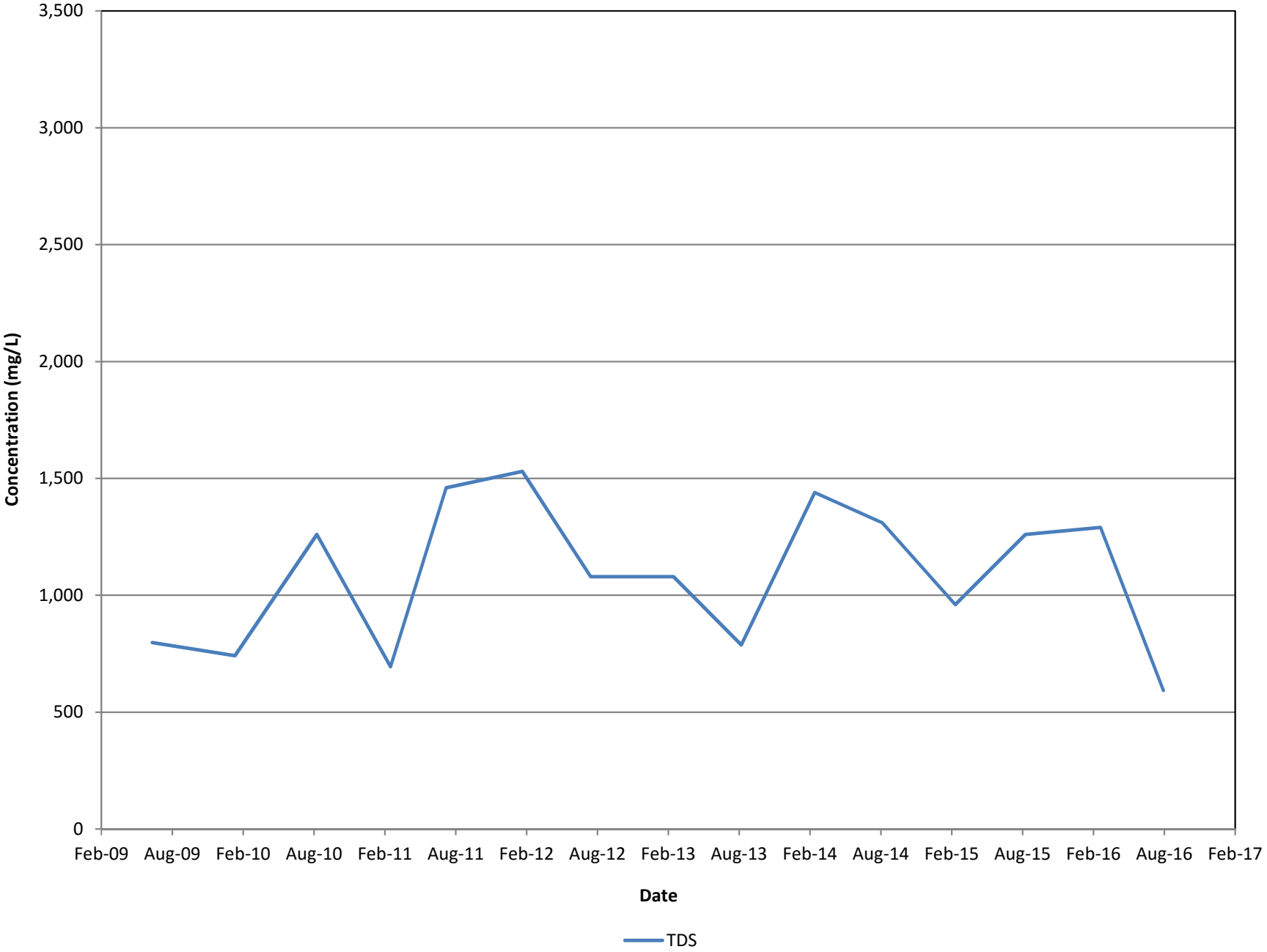
MW-6: METAL CONCENTRATIONS OVER TIME



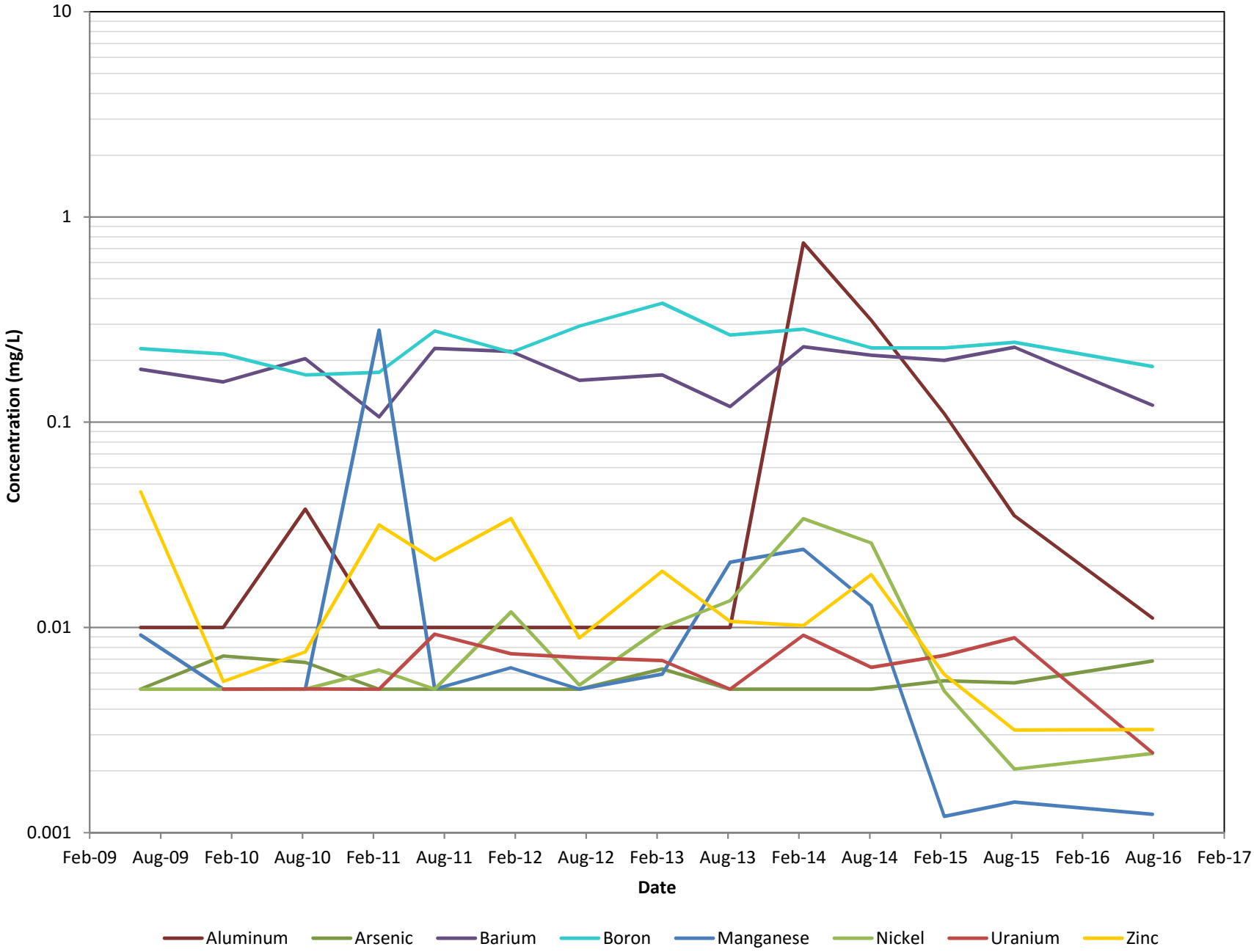
MW-8: ANION CONCENTRATIONS OVER TIME



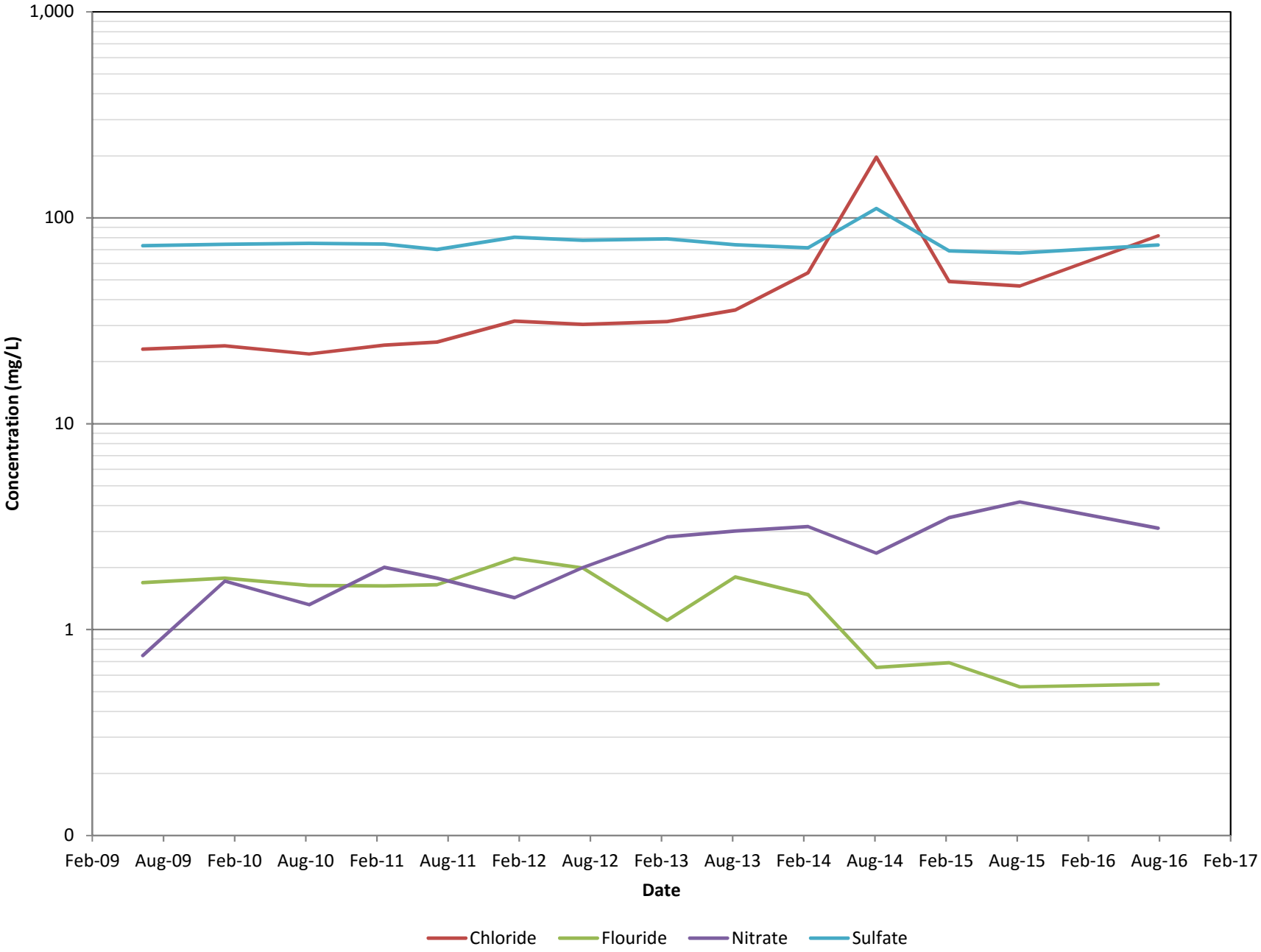
MW-8: TDS CONCENTRATIONS OVER TIME



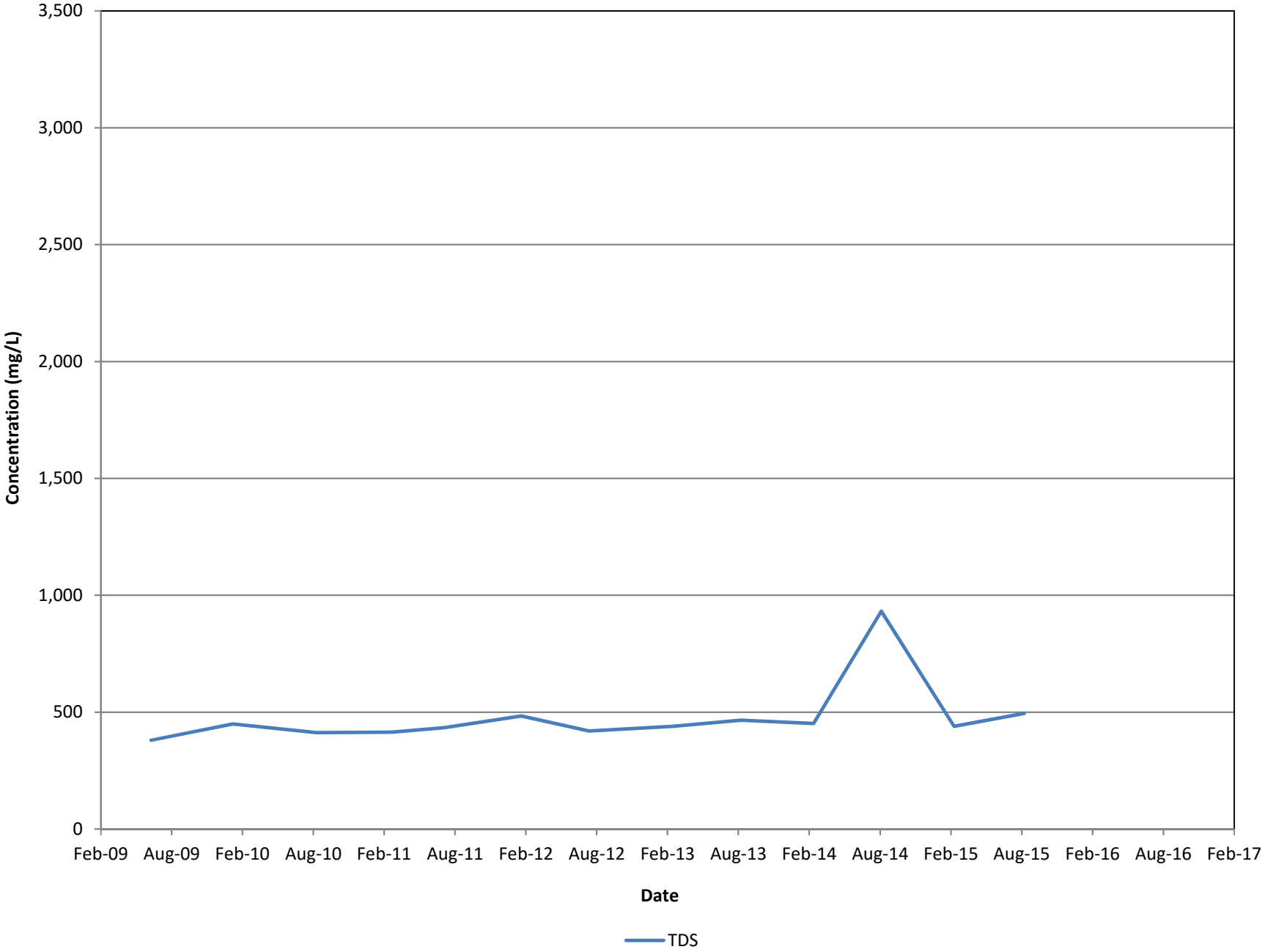
MW-8: METAL CONCENTRATIONS OVER TIME



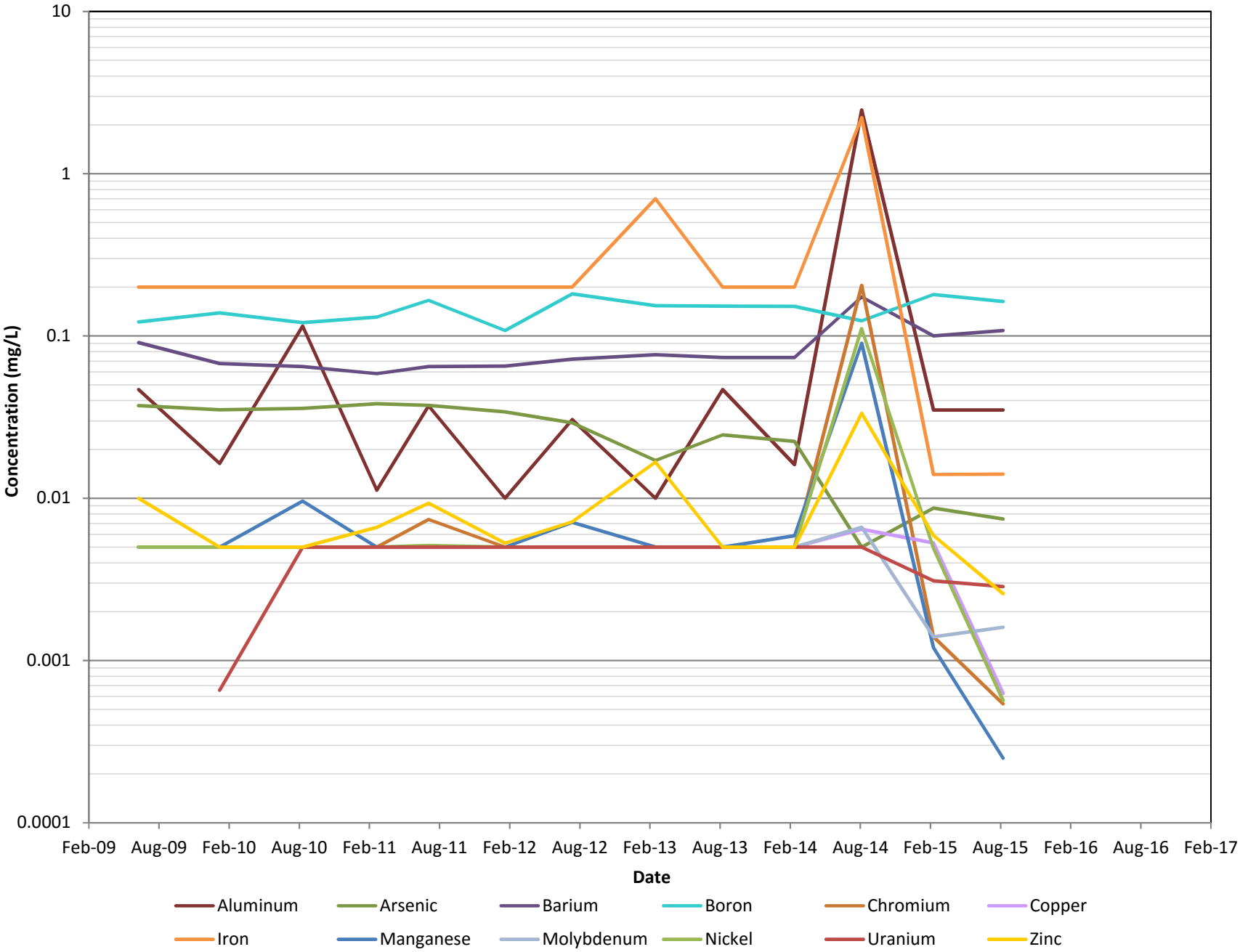
MW-9: ANION CONCENTRATIONS OVER TIME



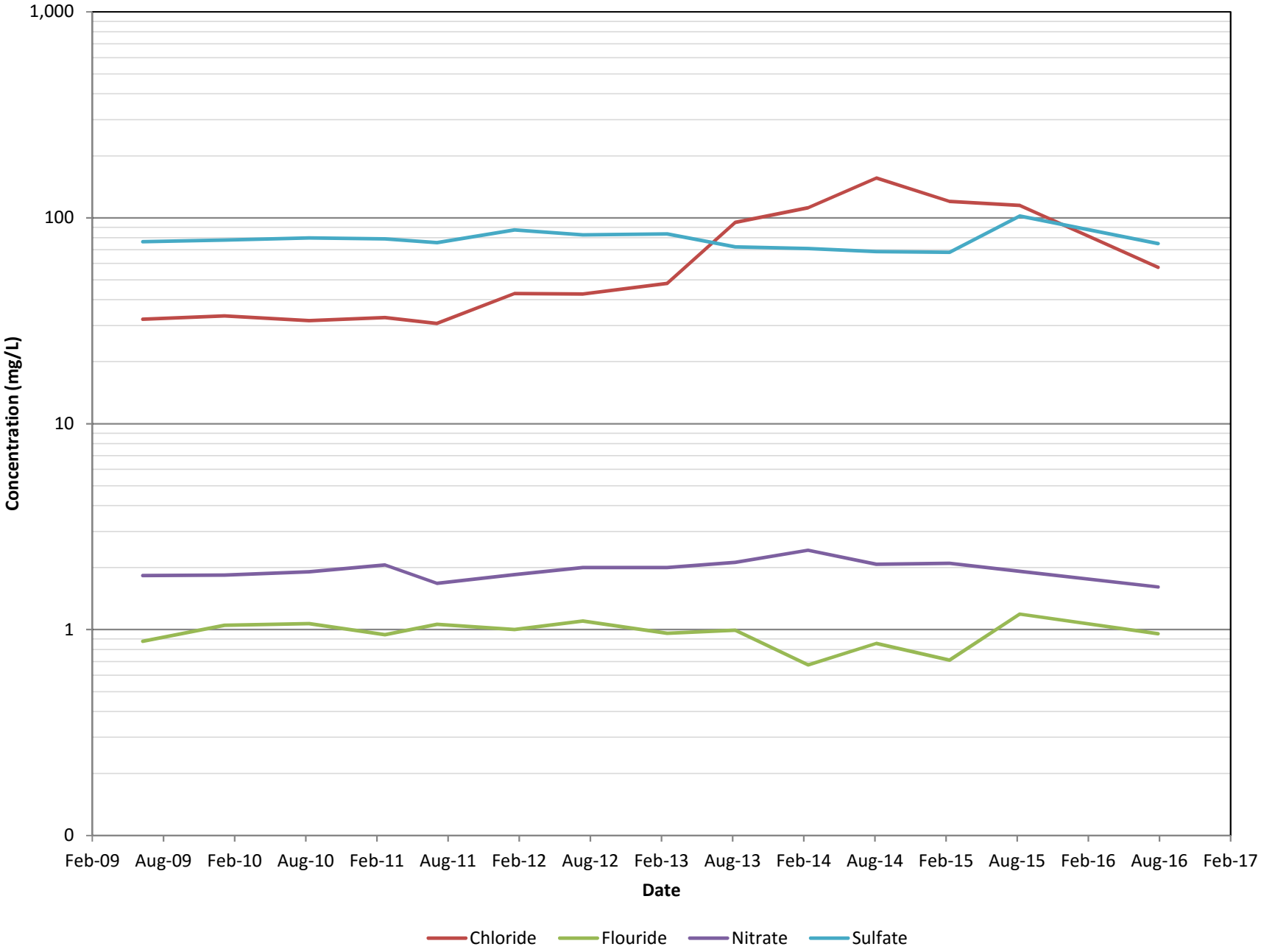
MW-9: TDS CONCENTRATIONS OVER TIME



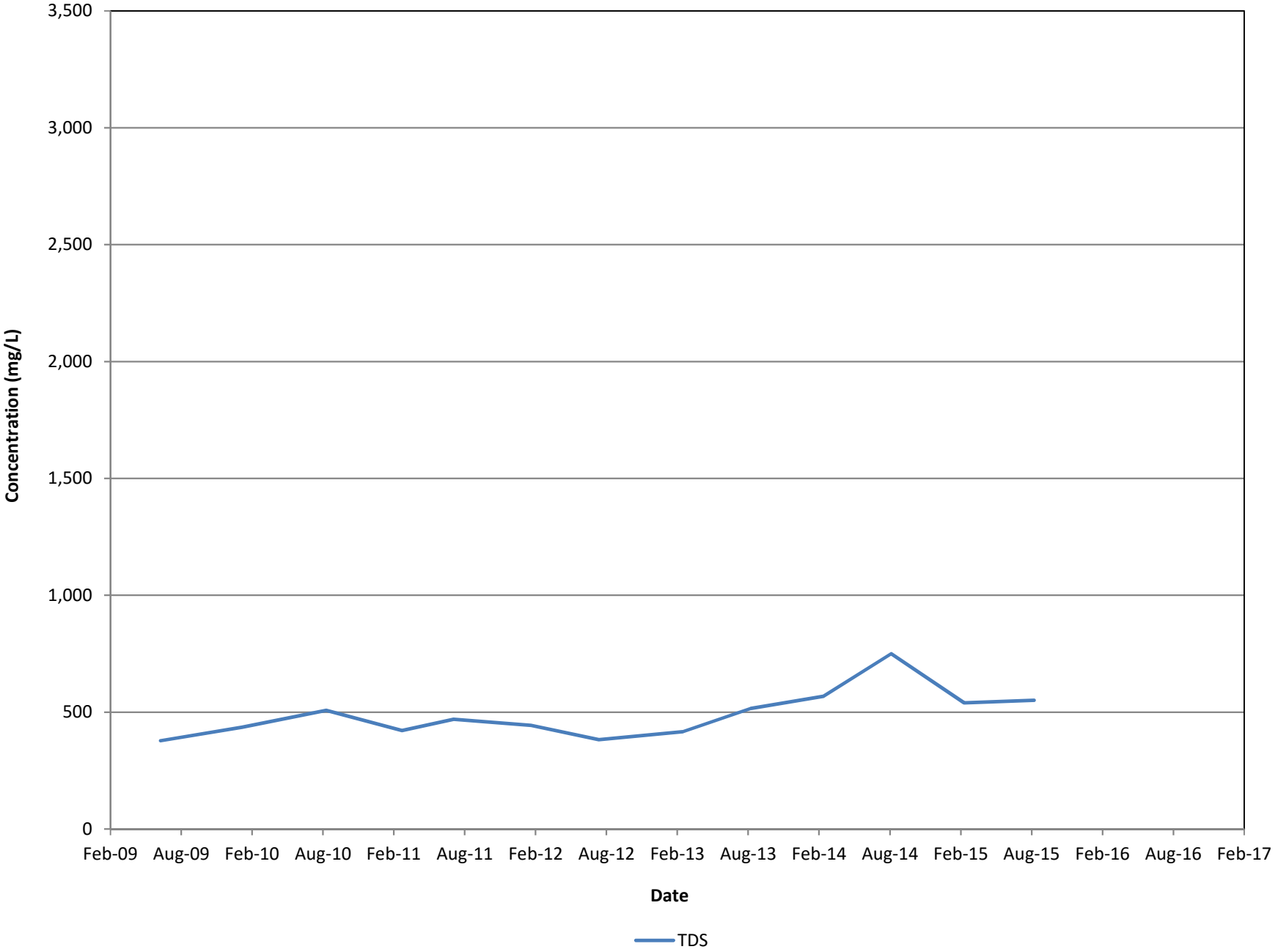
MW-9: METAL CONCENTRATIONS OVER TIME



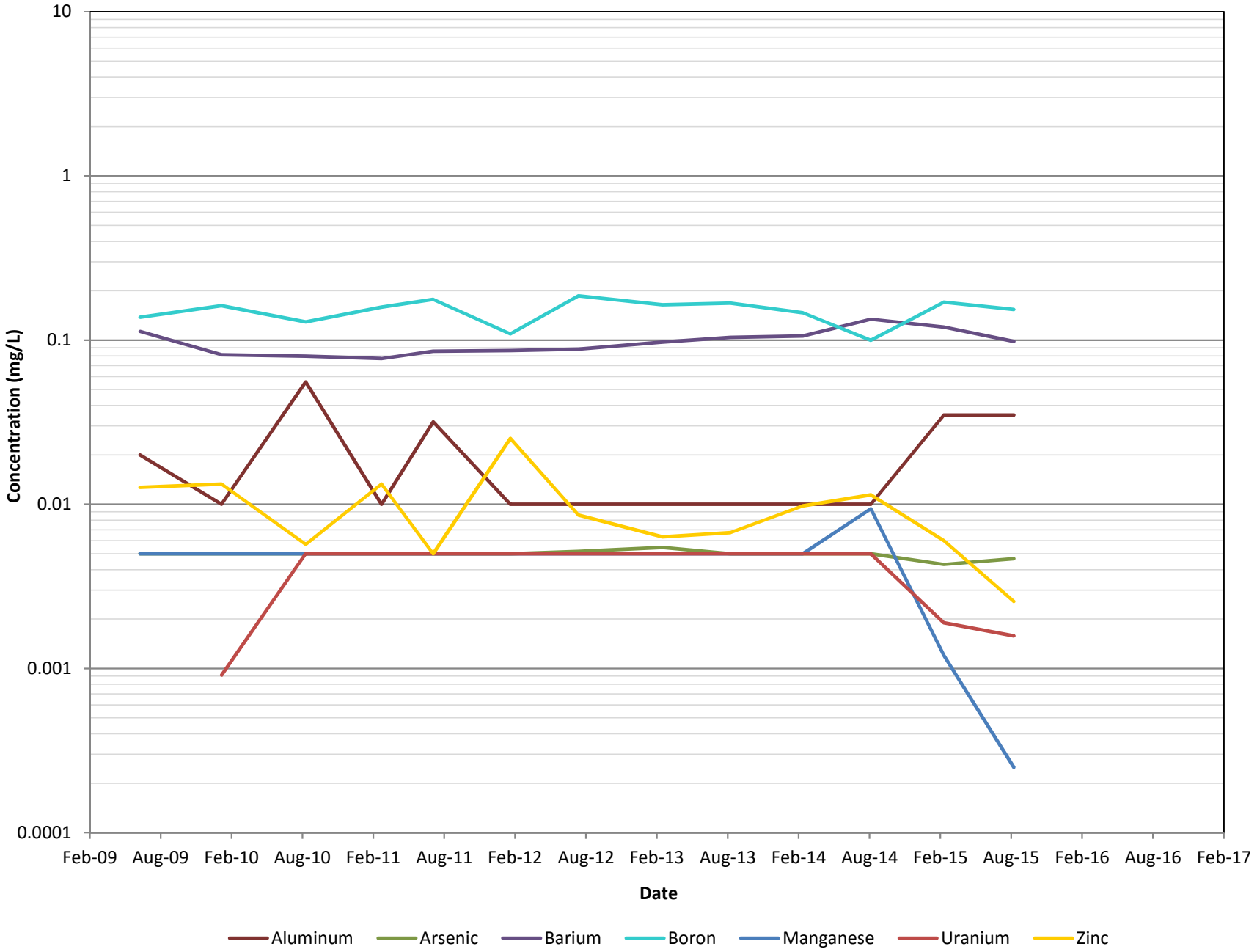
MW-10: ANION CONCENTRATIONS OVER TIME



MW-10: TDS CONCENTRATIONS OVER TIME

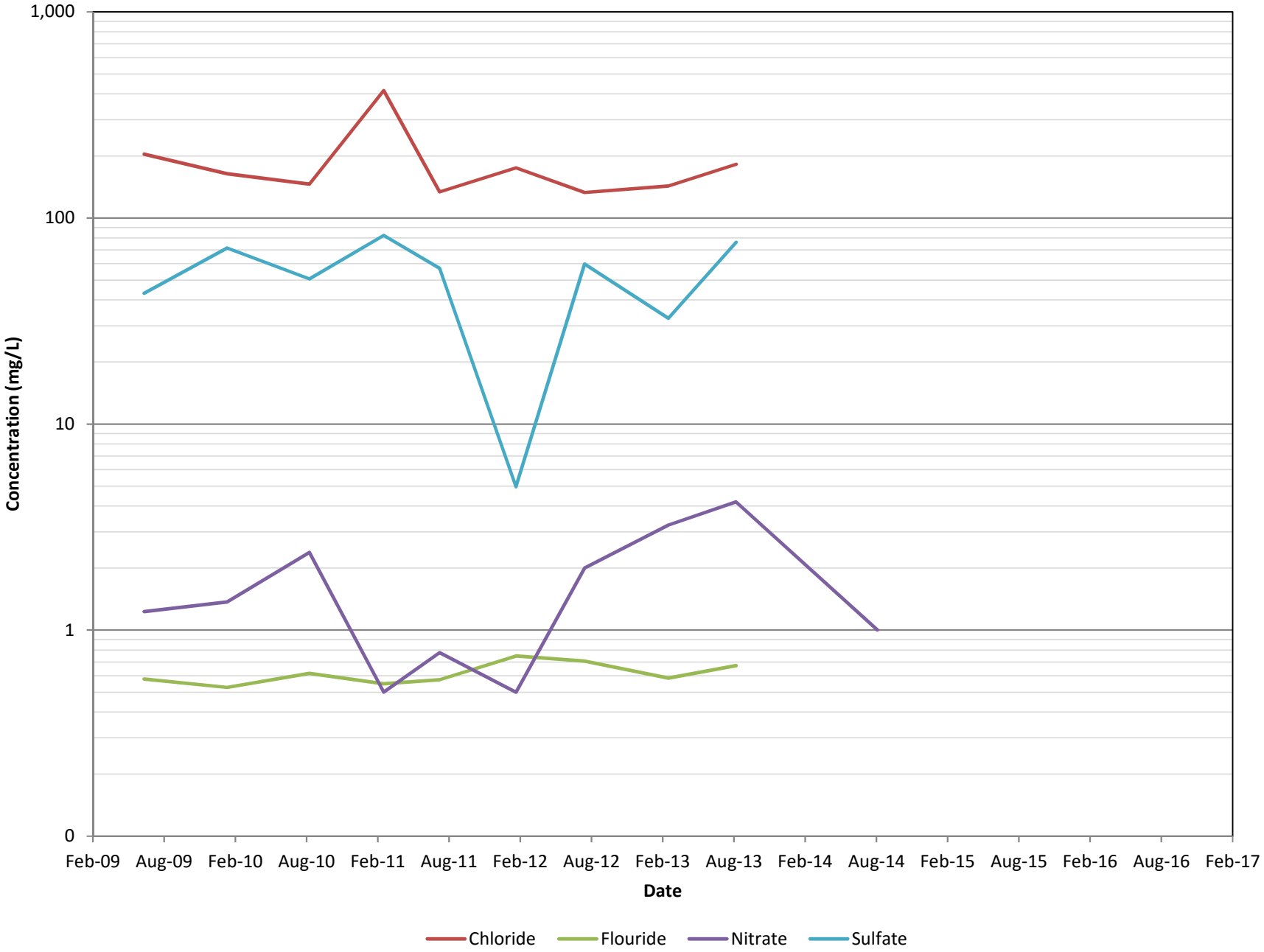


MW-10: METAL CONCENTRATIONS OVER TIME

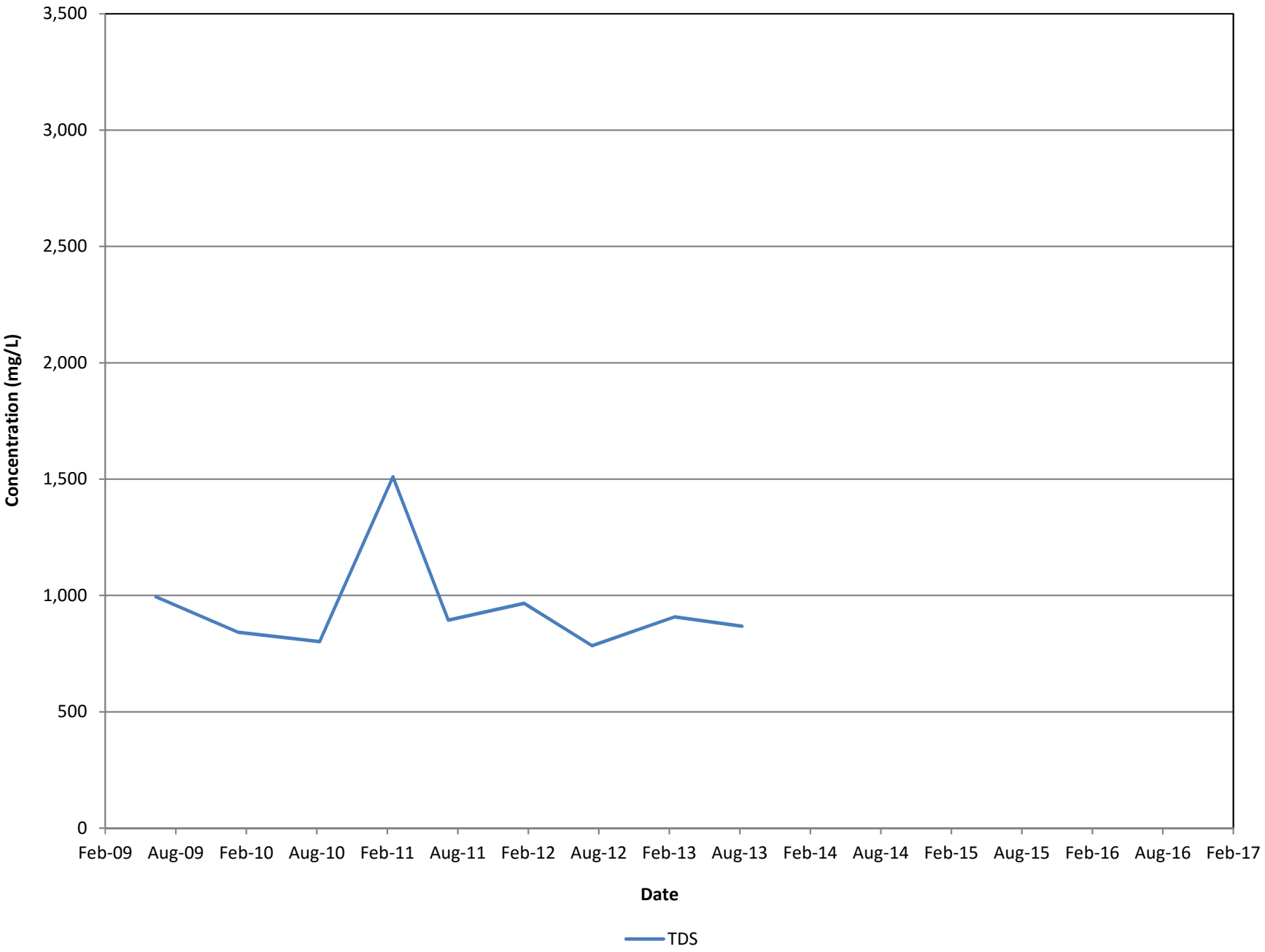


MW-10: SVOC CONCENTRATIONS OVER TIME

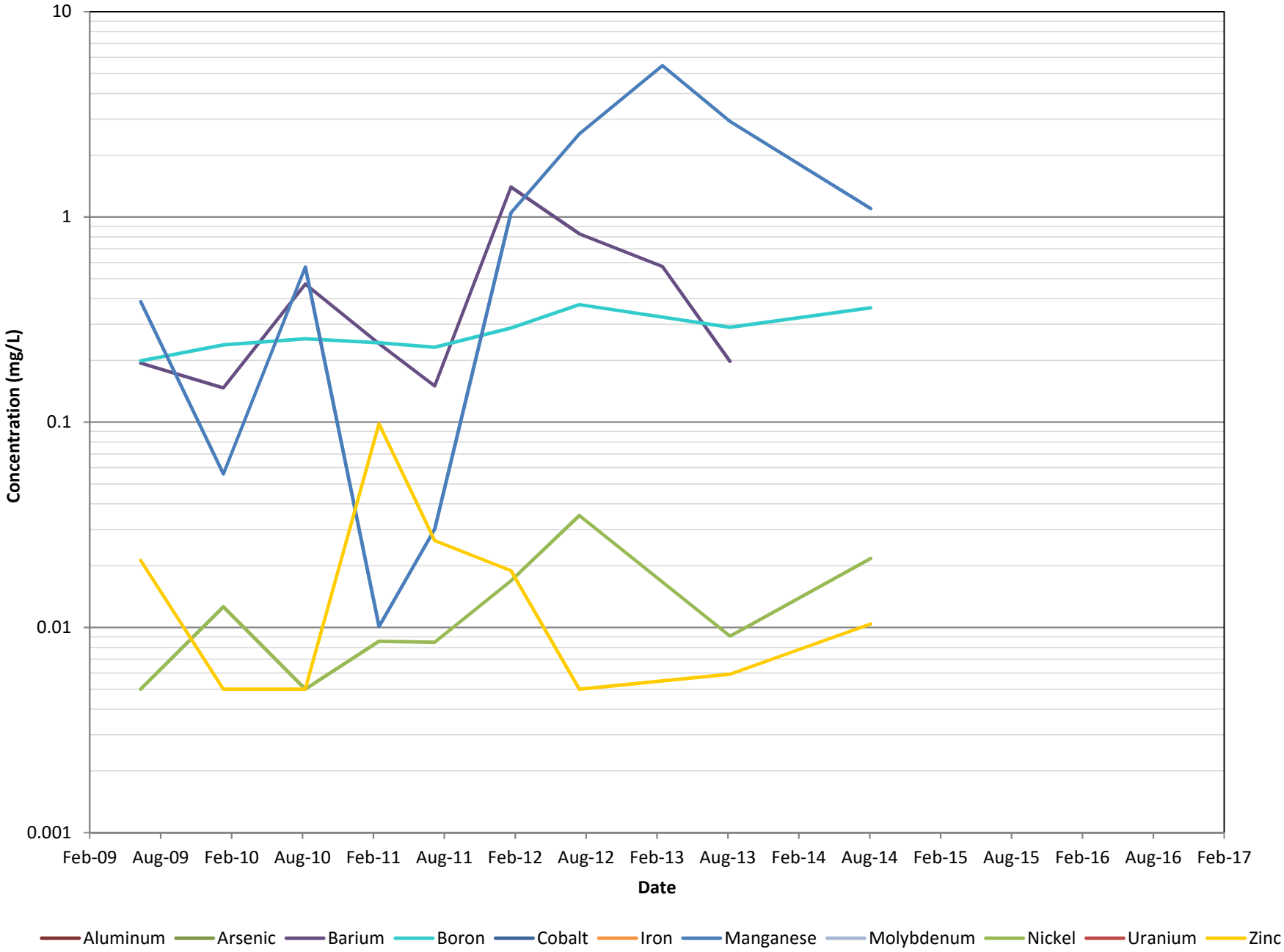
MW-11: ANION CONCENTRATIONS OVER TIME



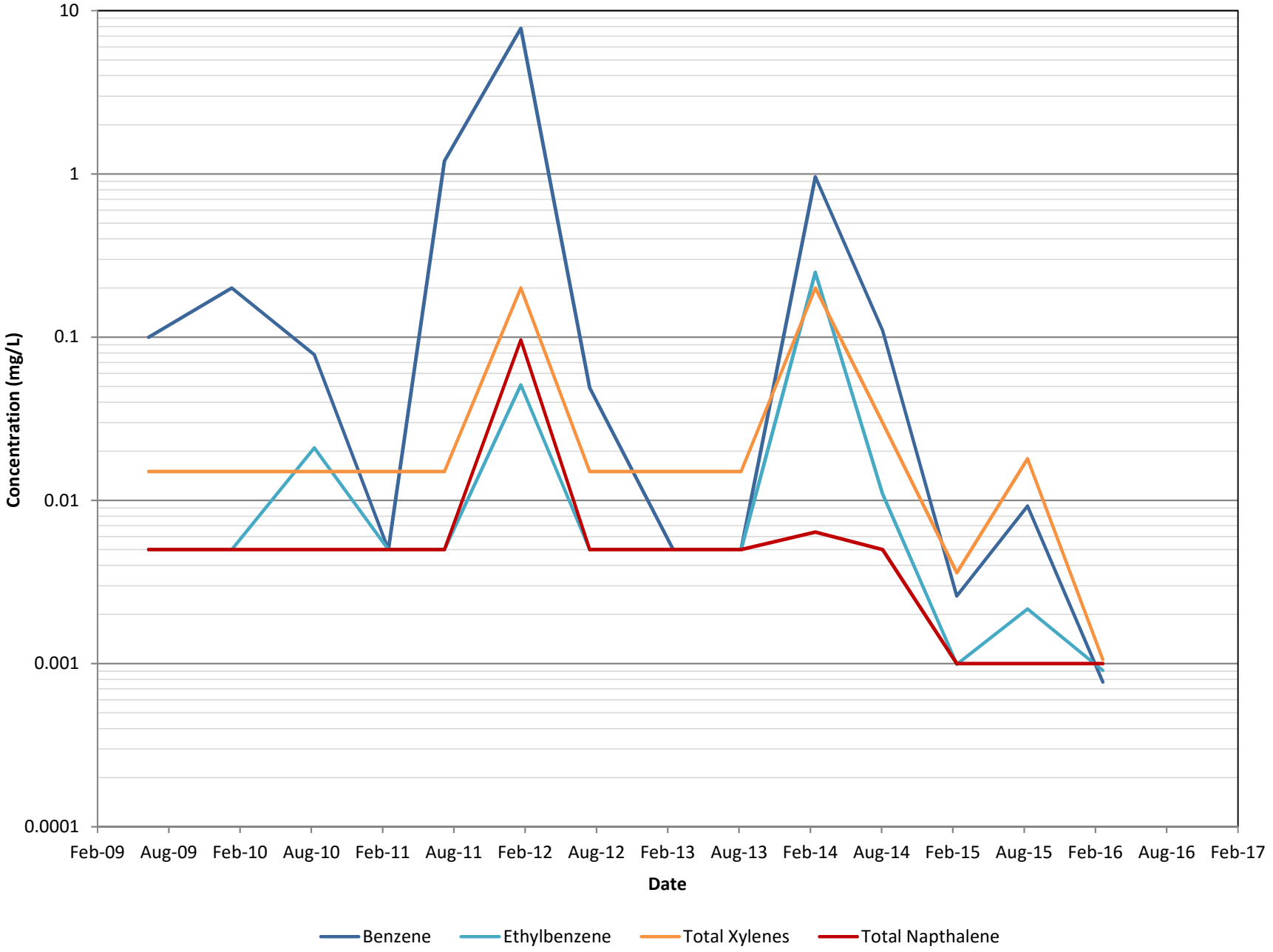
MW-11: TDS CONCENTRATIONS OVER TIME



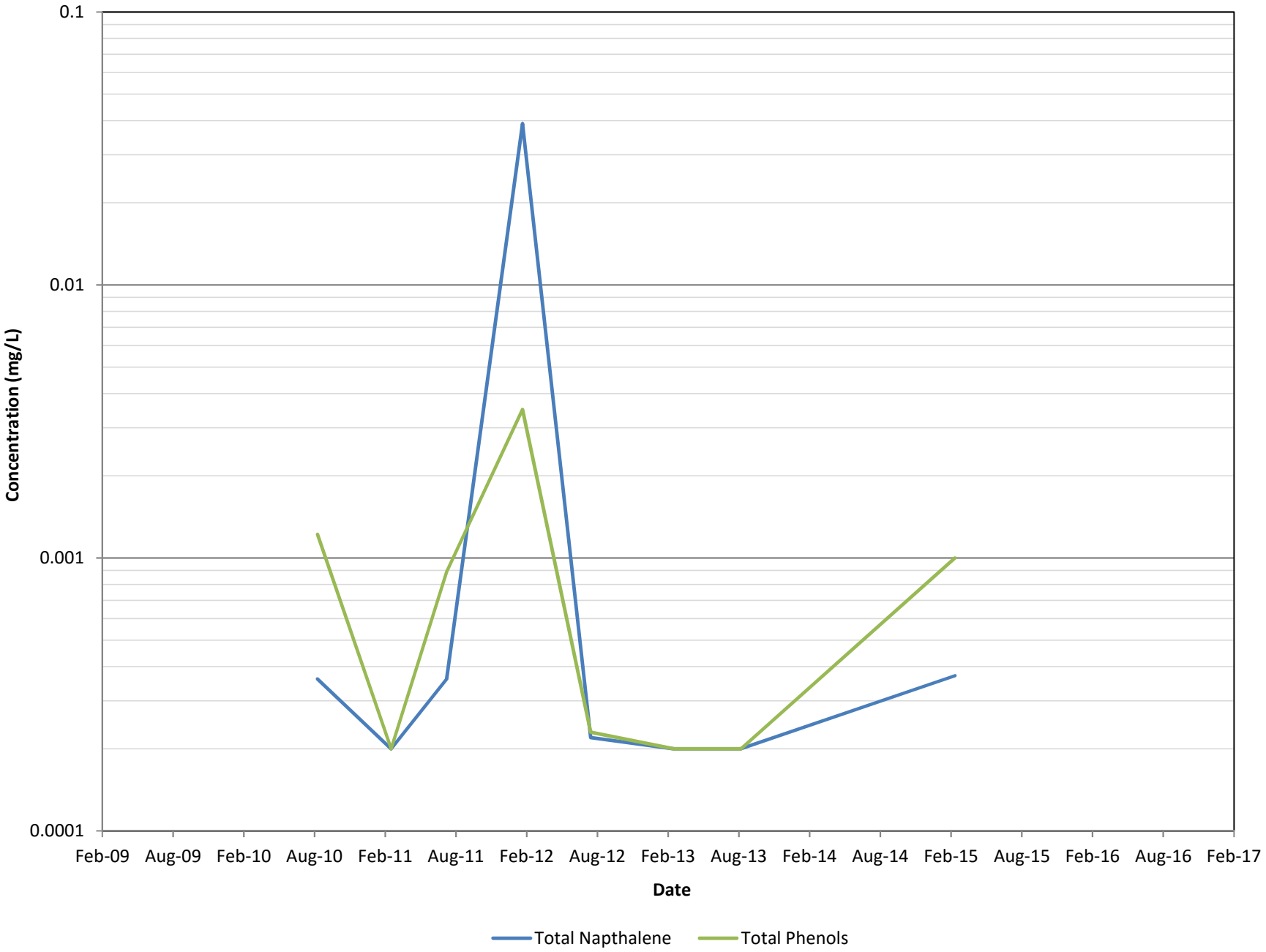
MW-11: METAL CONCENTRATIONS OVER TIME



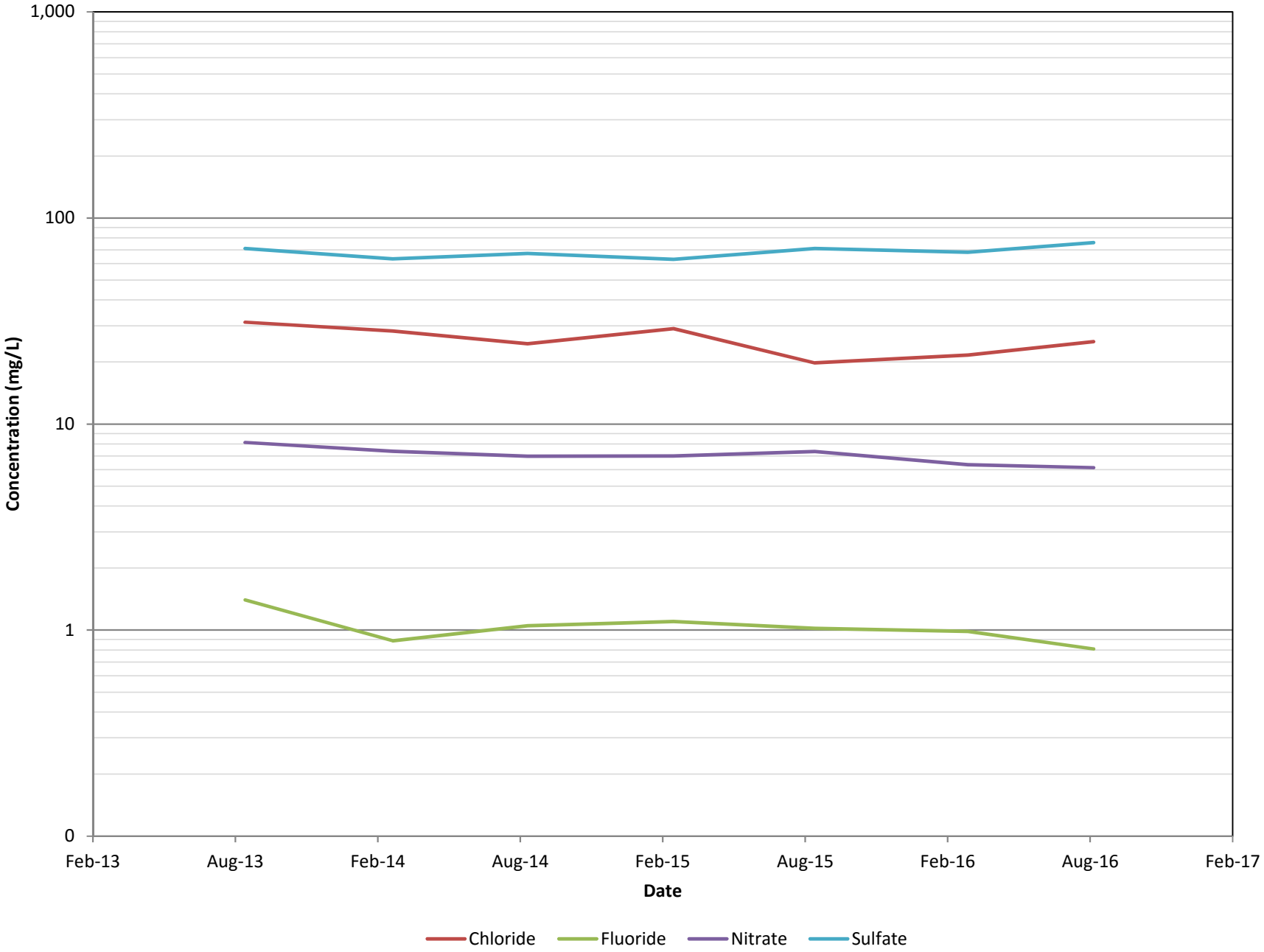
MW-11: VOC CONCENTRATIONS OVER TIME



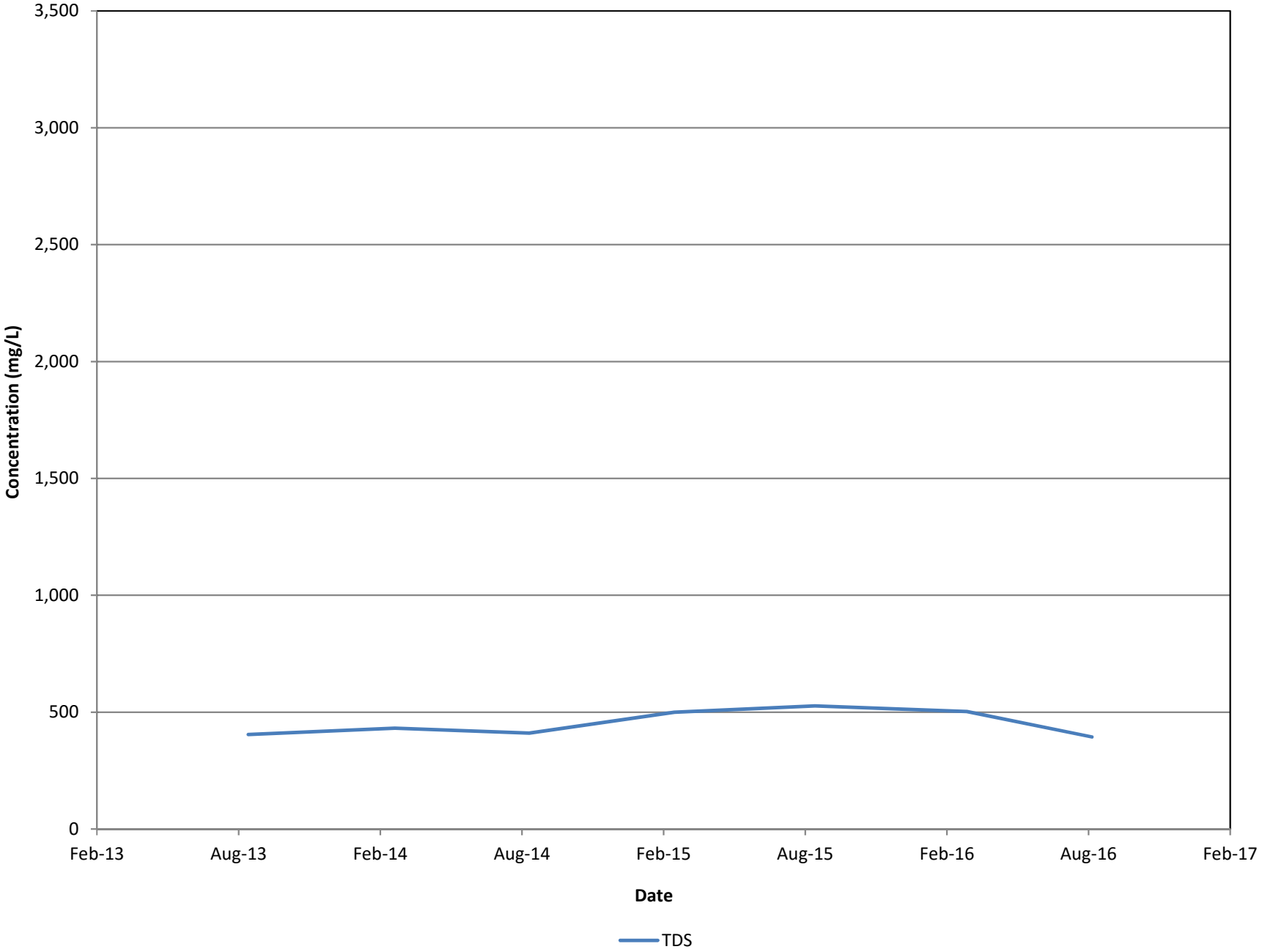
MW-11: SVOC CONCENTRATIONS OVER TIME



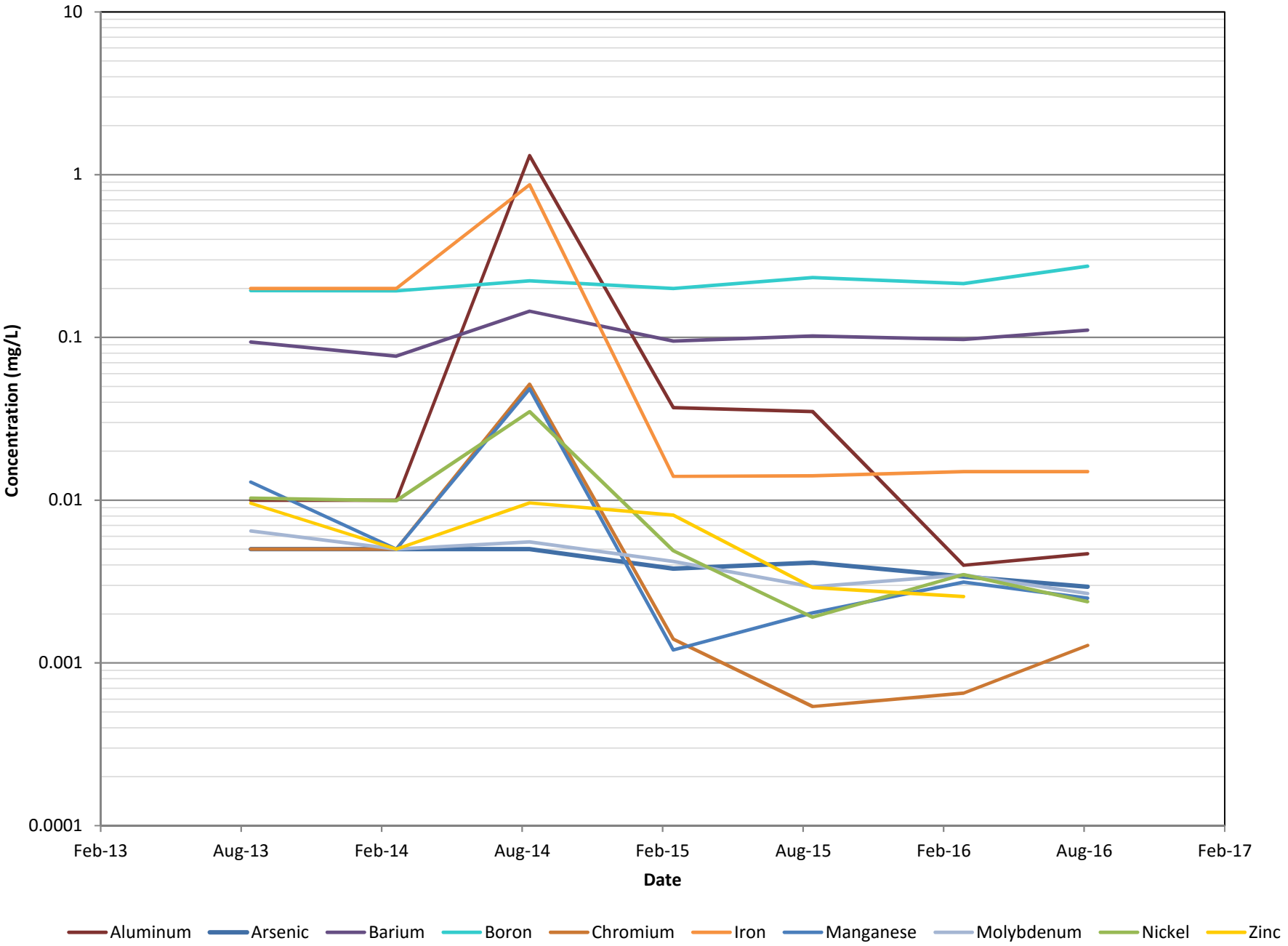
MW-12R: ANION CONCENTRATIONS OVER TIME



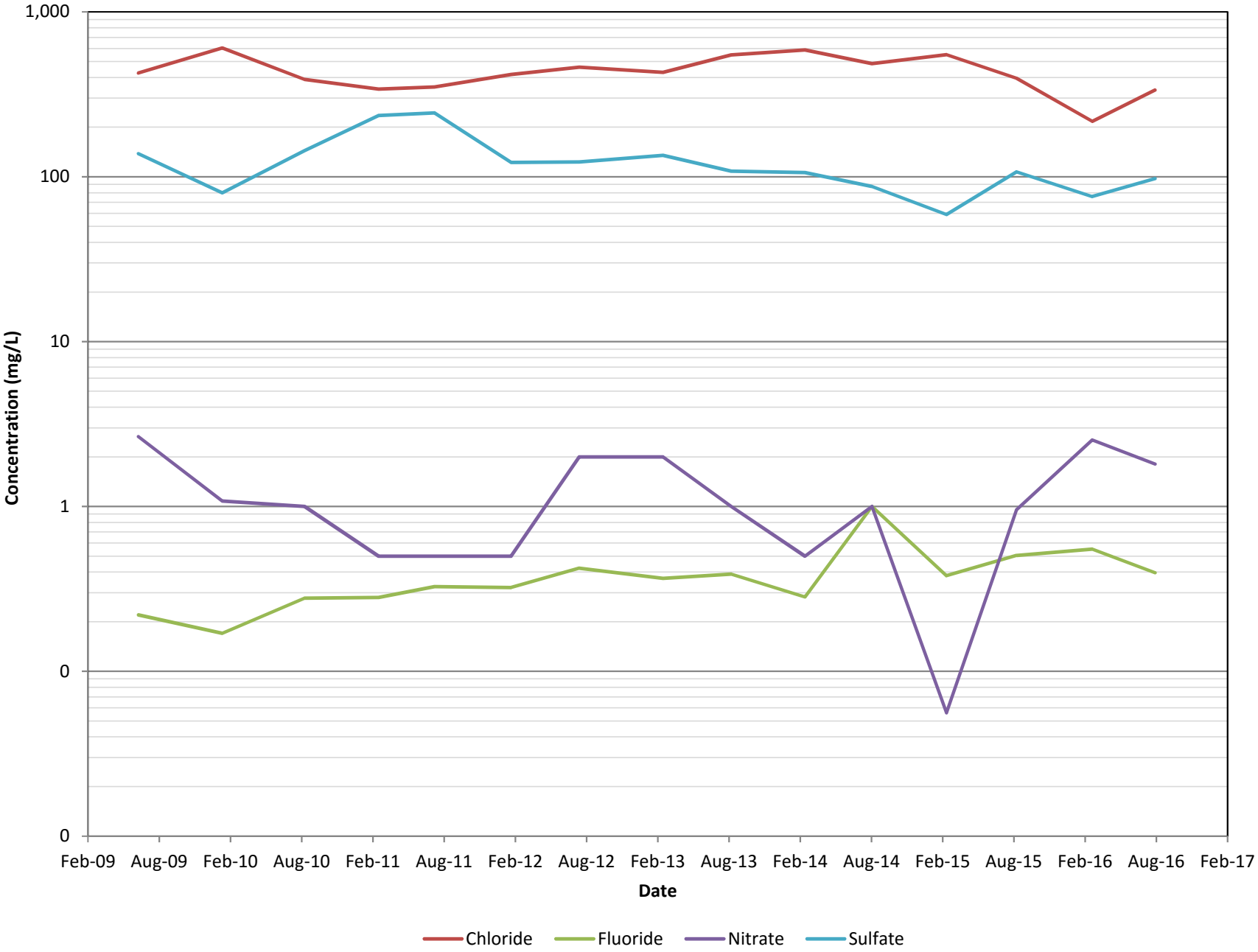
MW-12R: TDS CONCENTRATIONS OVER TIME



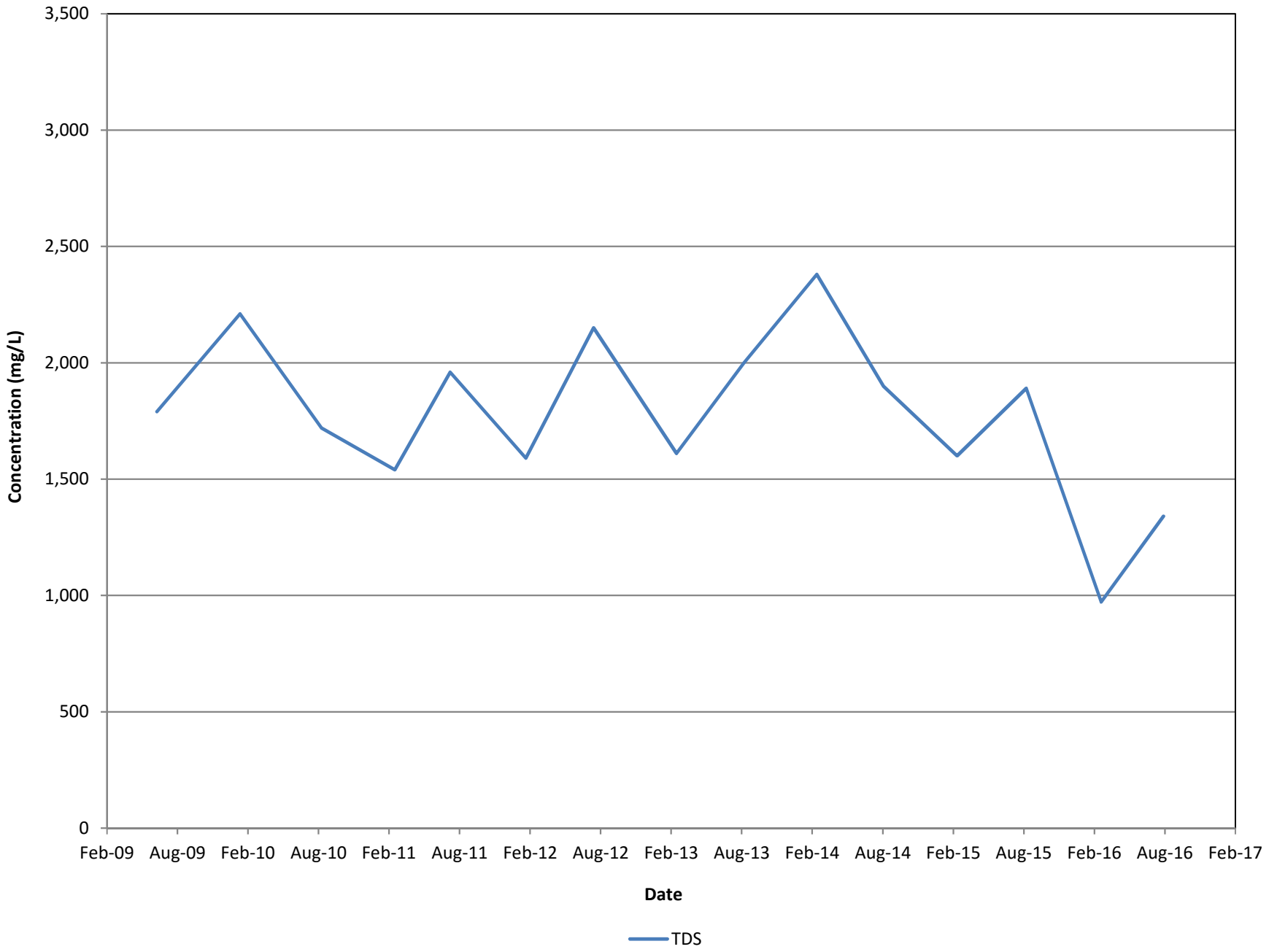
MW-12R: METAL CONCENTRATIONS OVER TIME



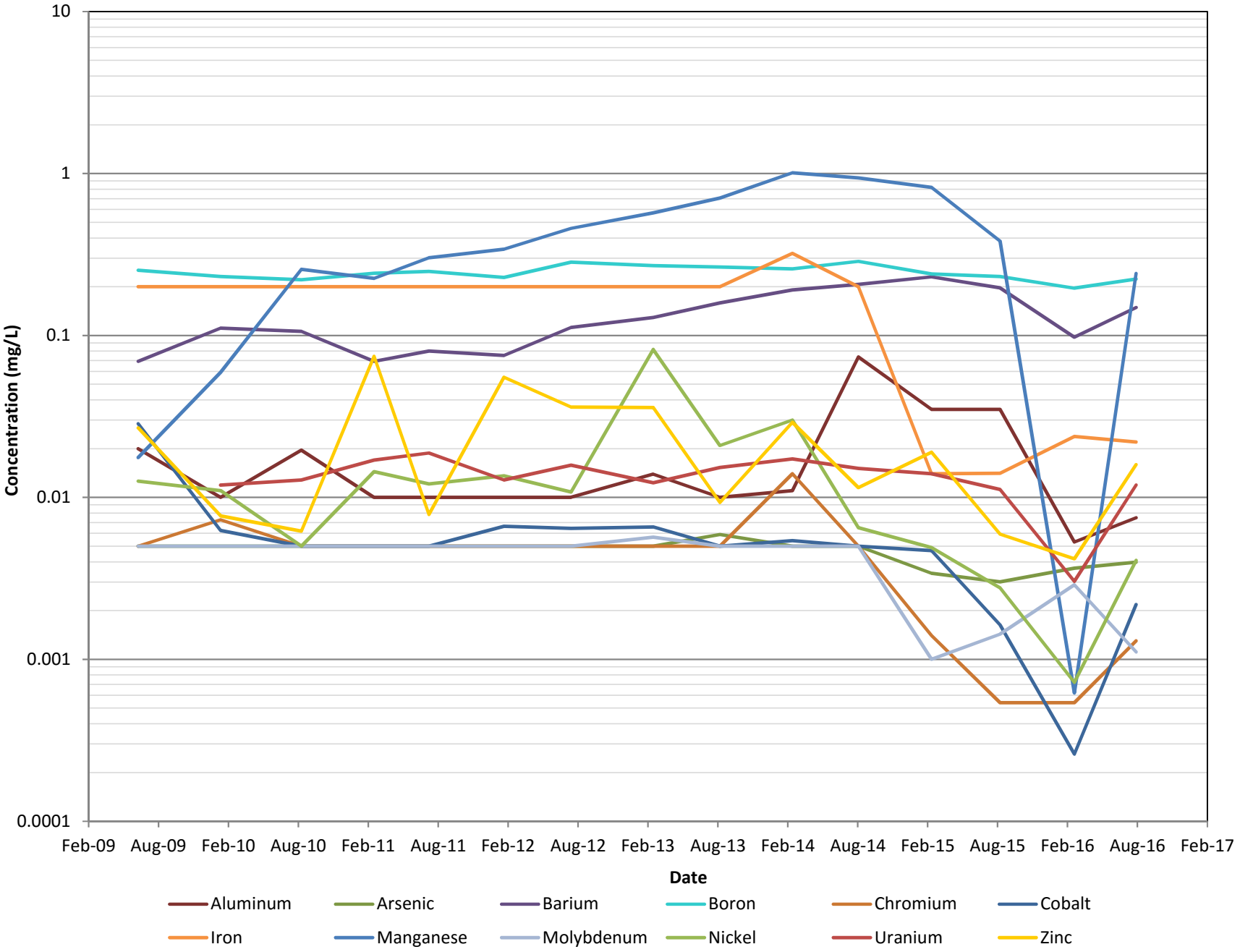
MW-13: ANION CONCENTRATIONS OVER TIME



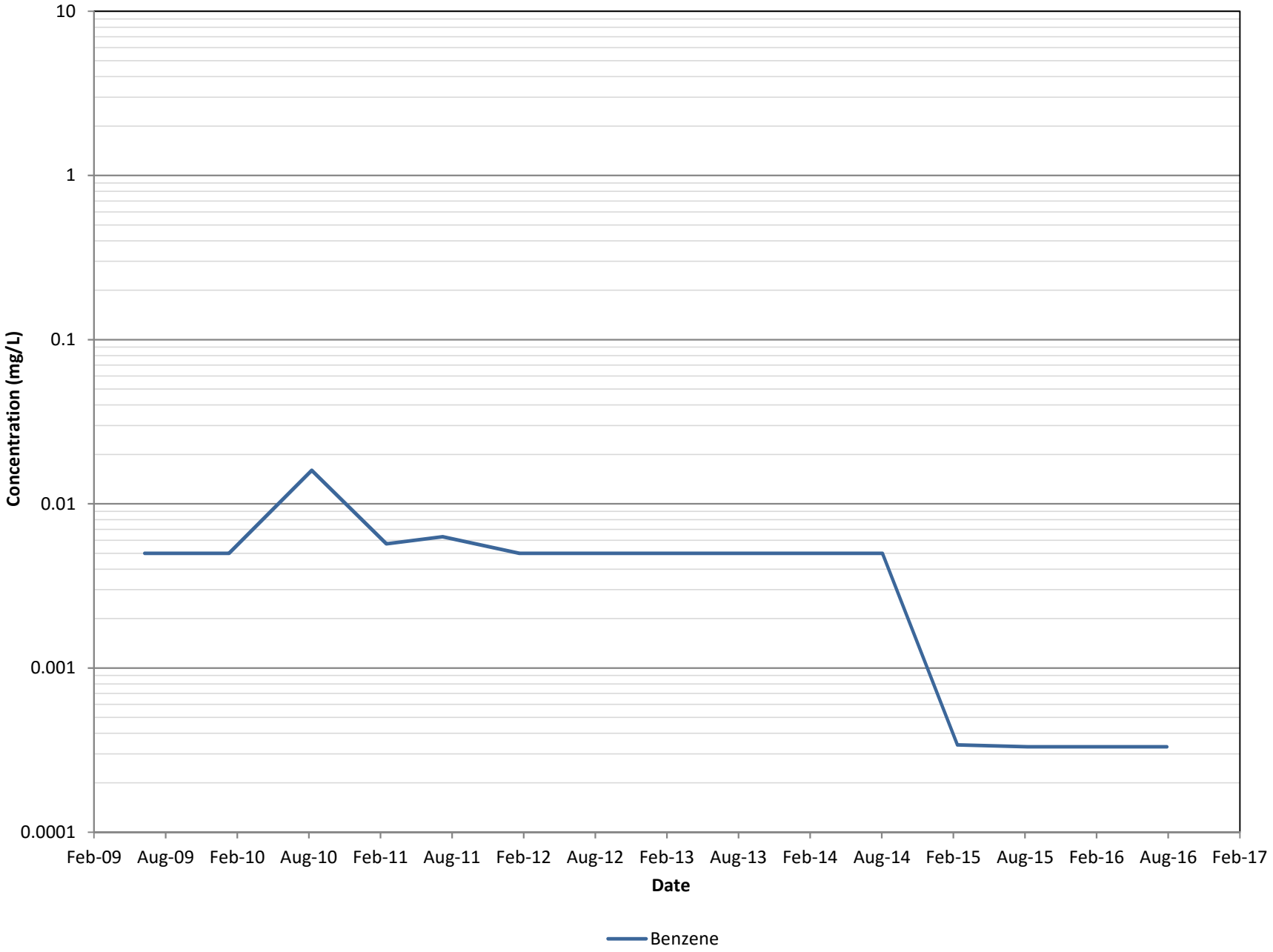
MW-13: TDS CONCENTRATIONS OVER TIME



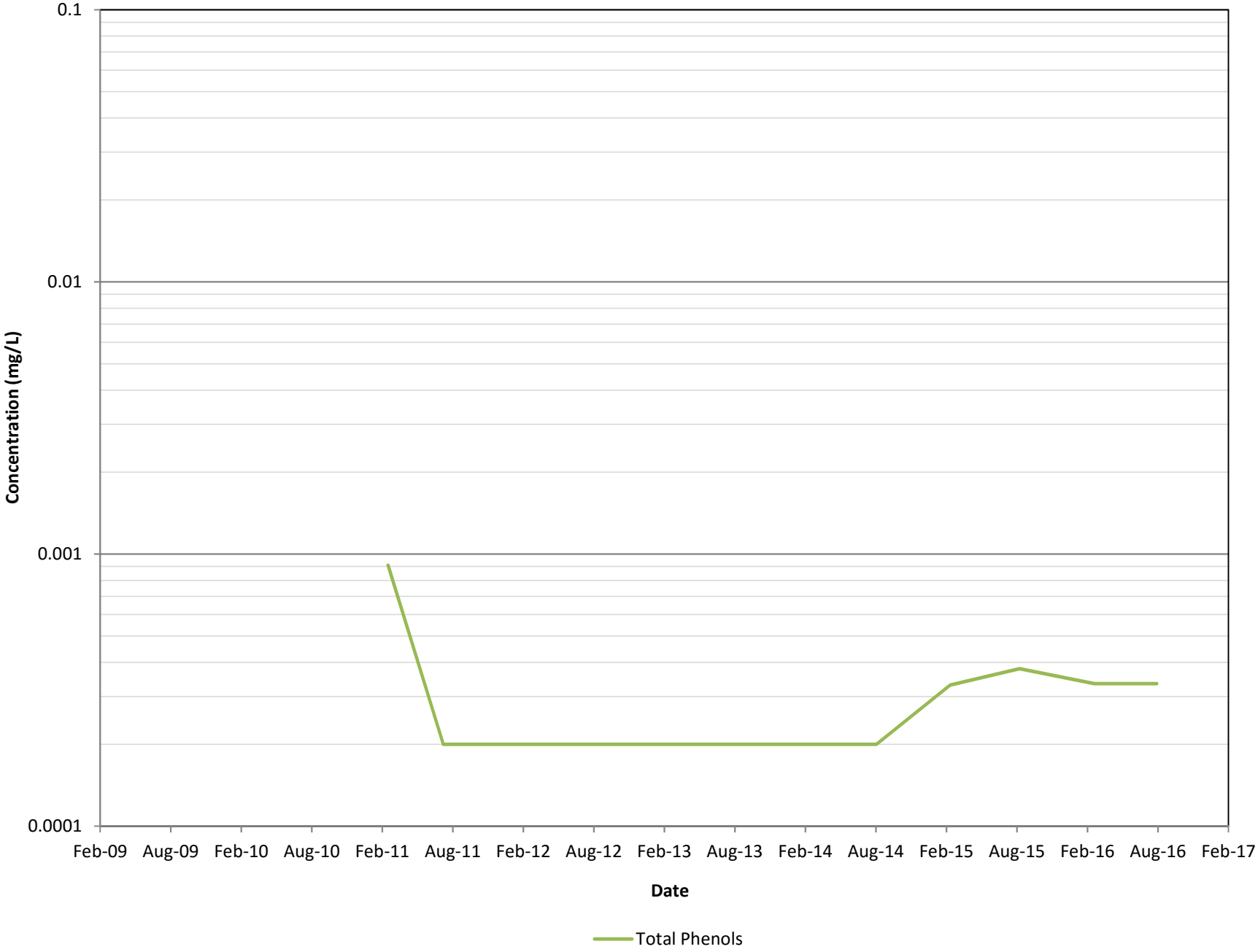
MW-13: METAL CONCENTRATIONS OVER TIME



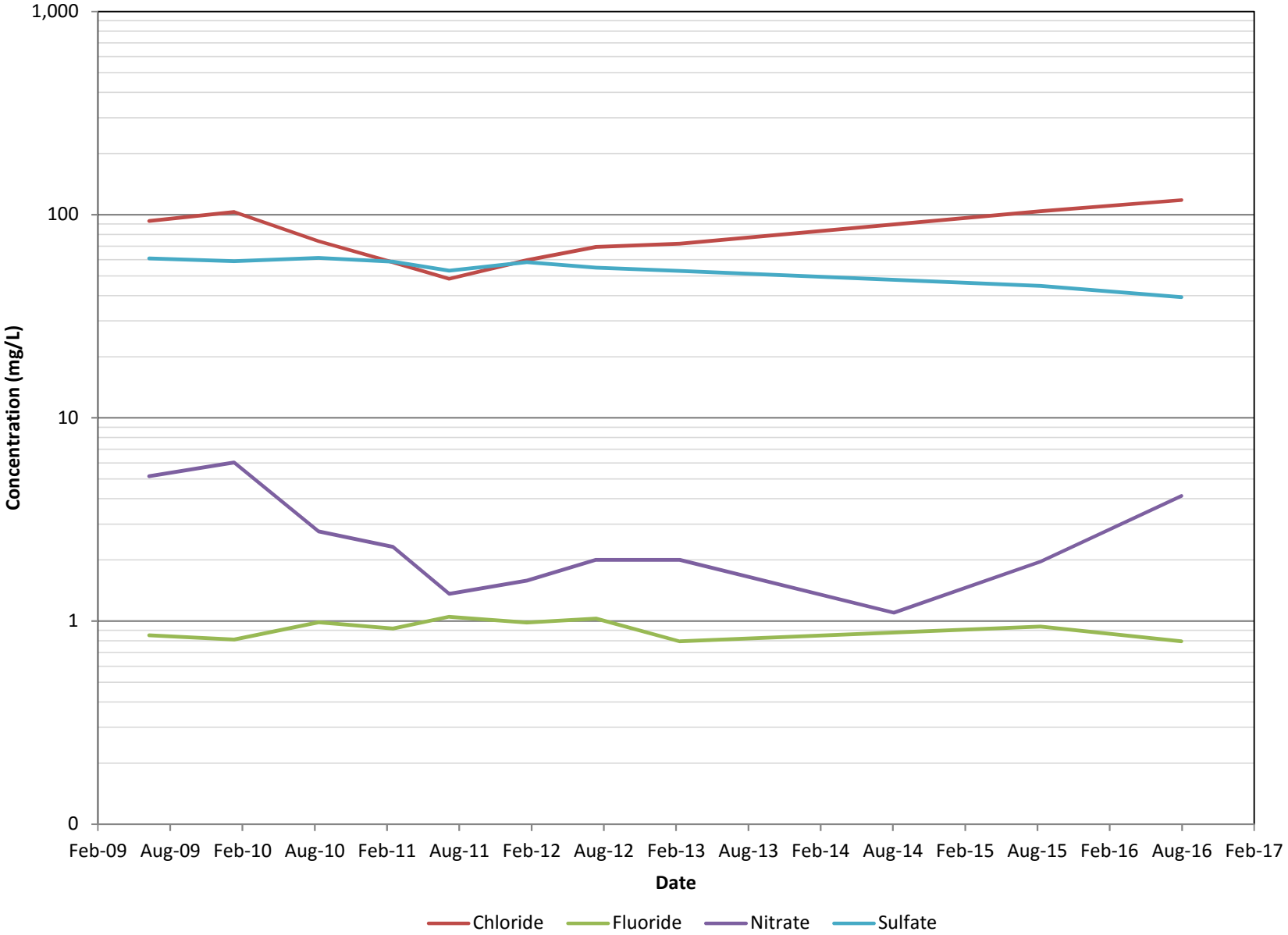
MW-13: VOC CONCENTRATIONS OVER TIME



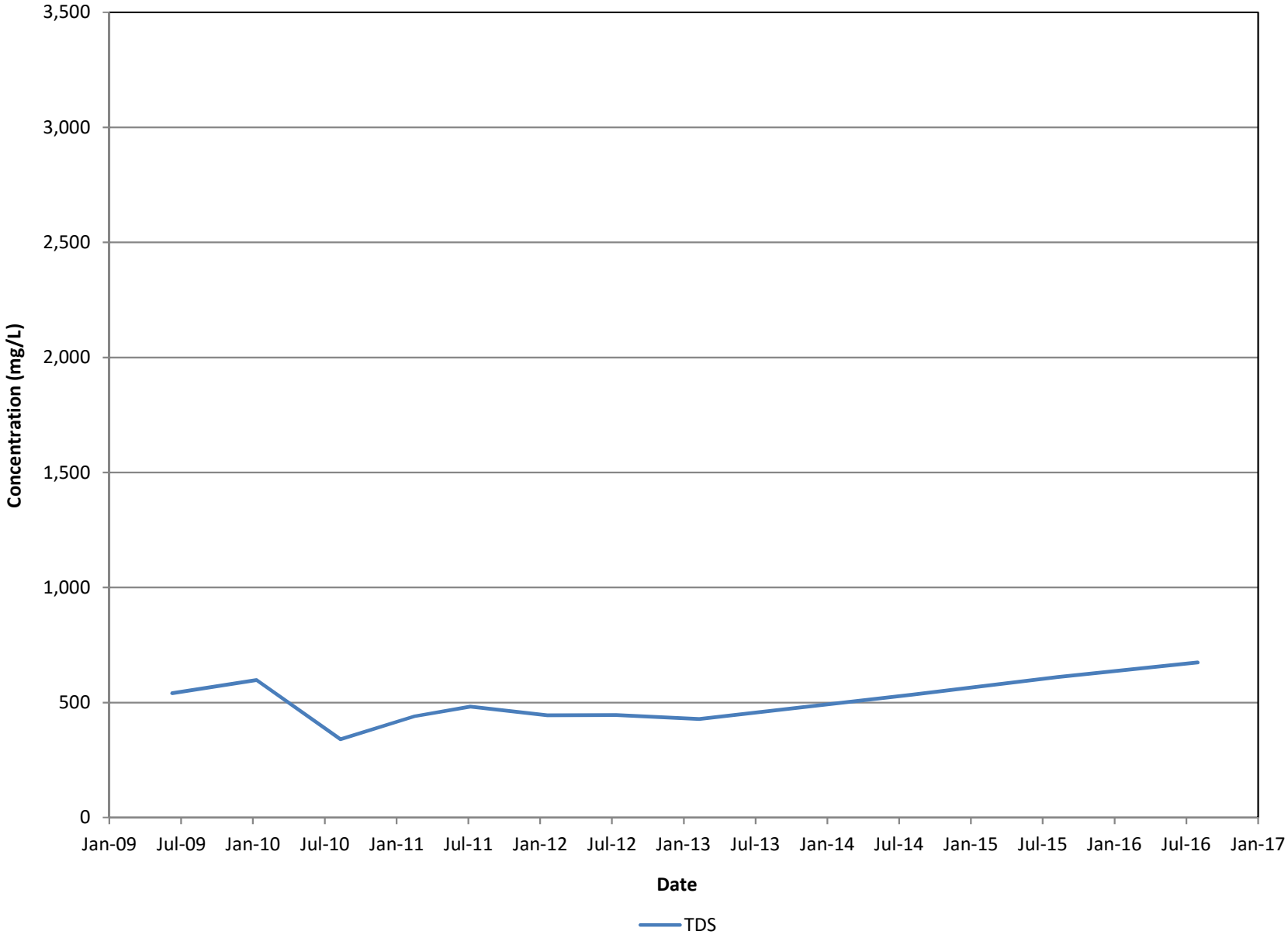
MW-13: SVOC CONCENTRATIONS OVER TIME



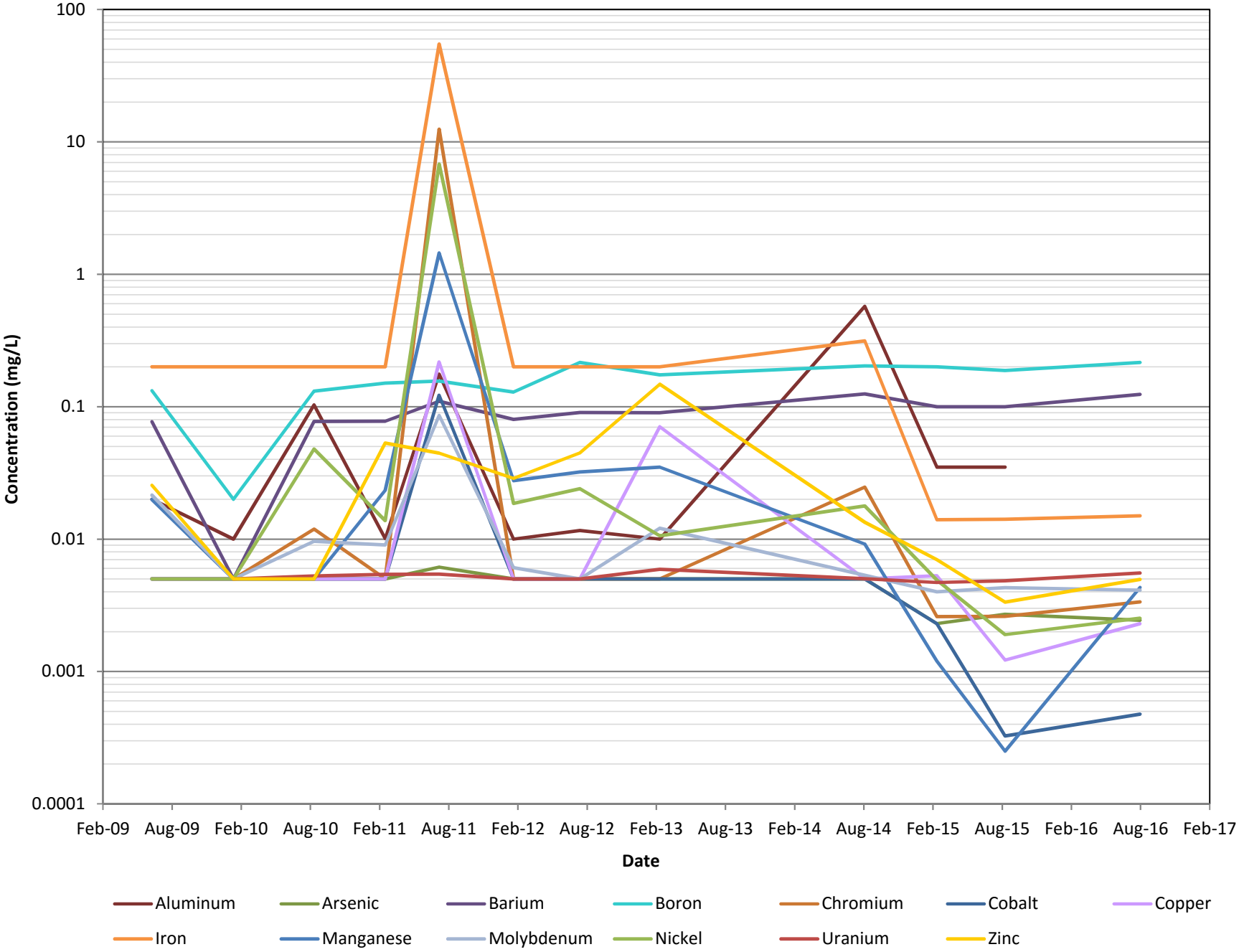
MW-14: ANION CONCENTRATIONS OVER TIME



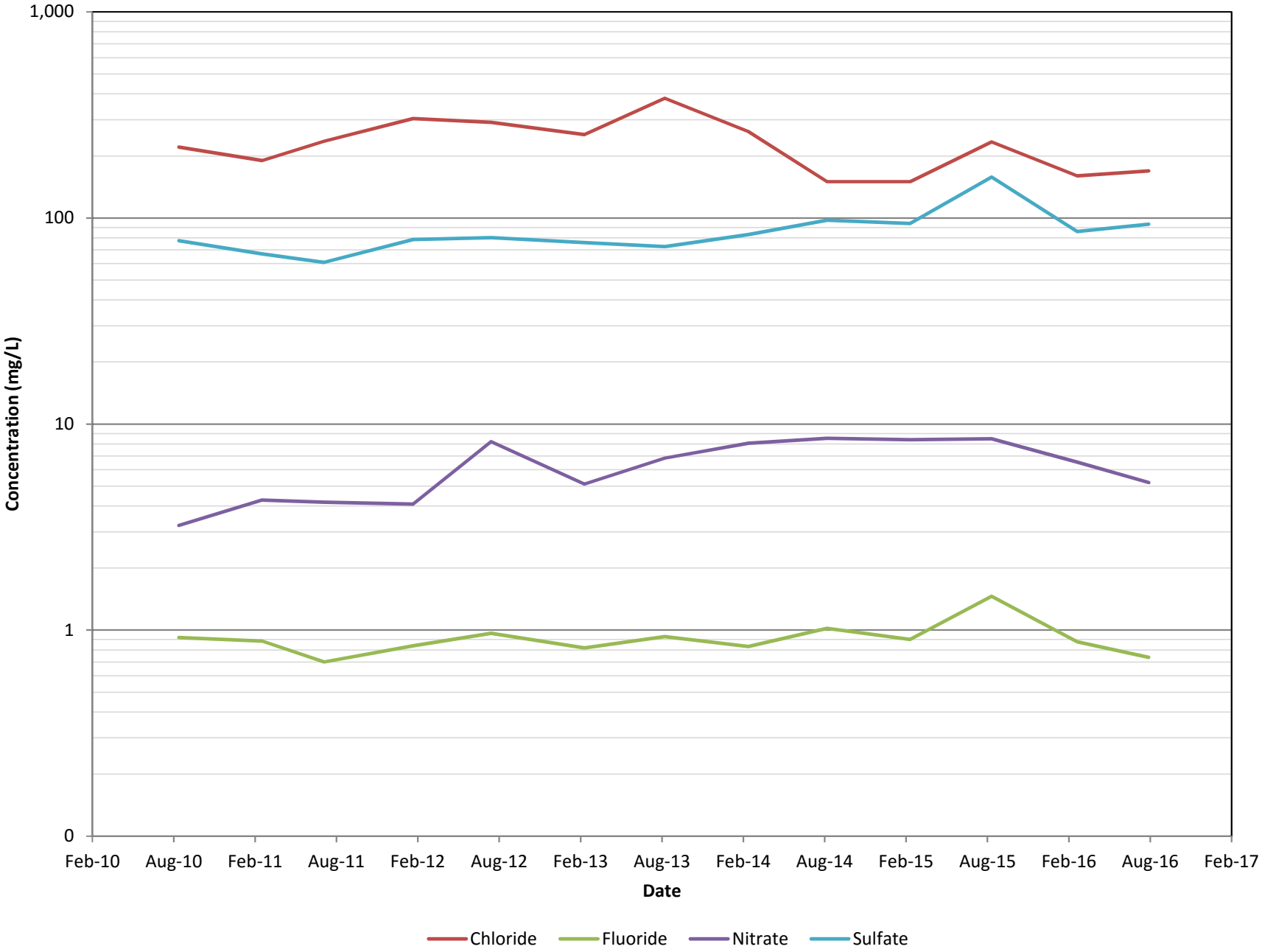
MW-14: TDS CONCENTRATIONS OVER TIME



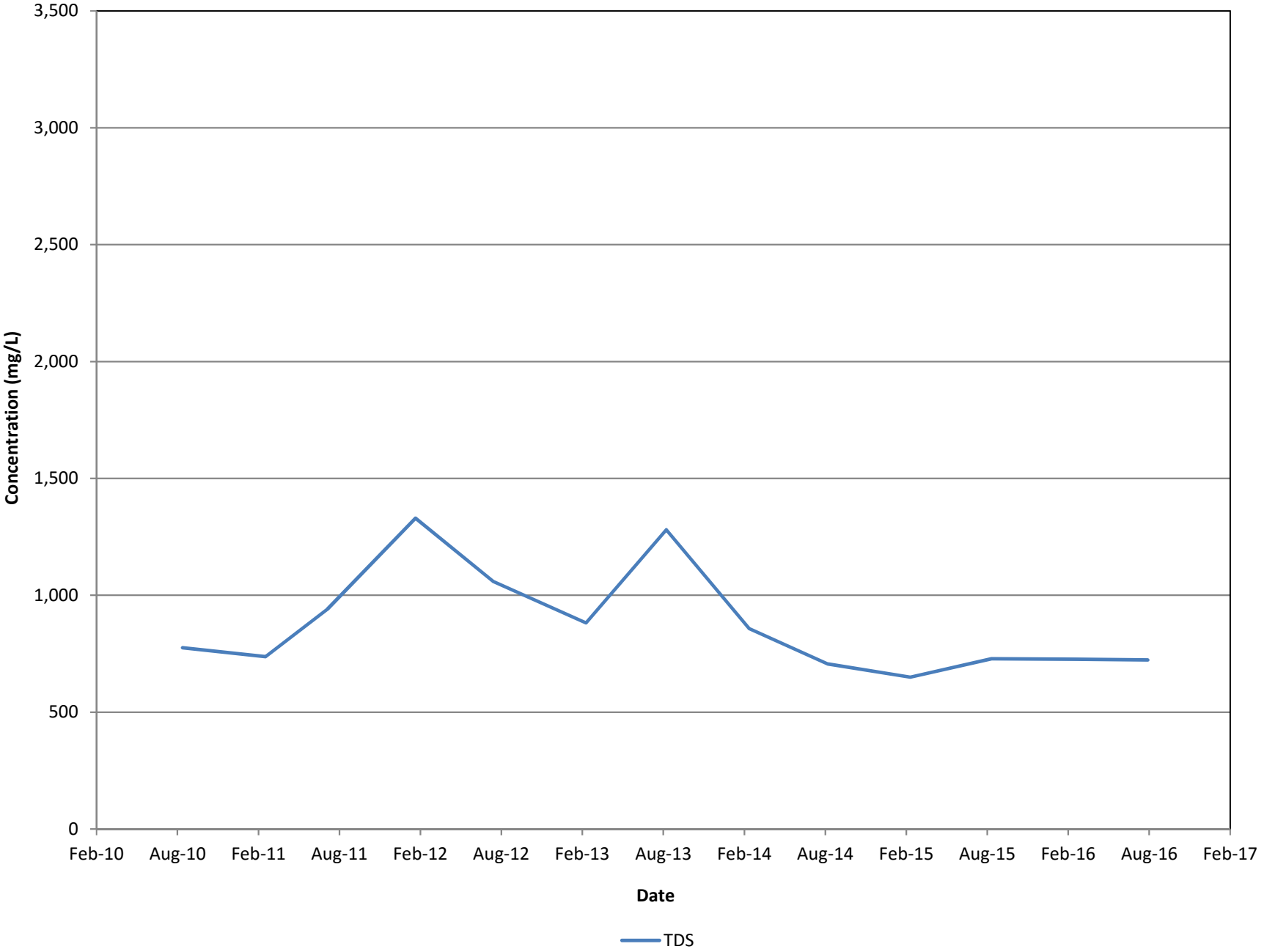
MW-14: METAL CONCENTRATIONS OVER TIME



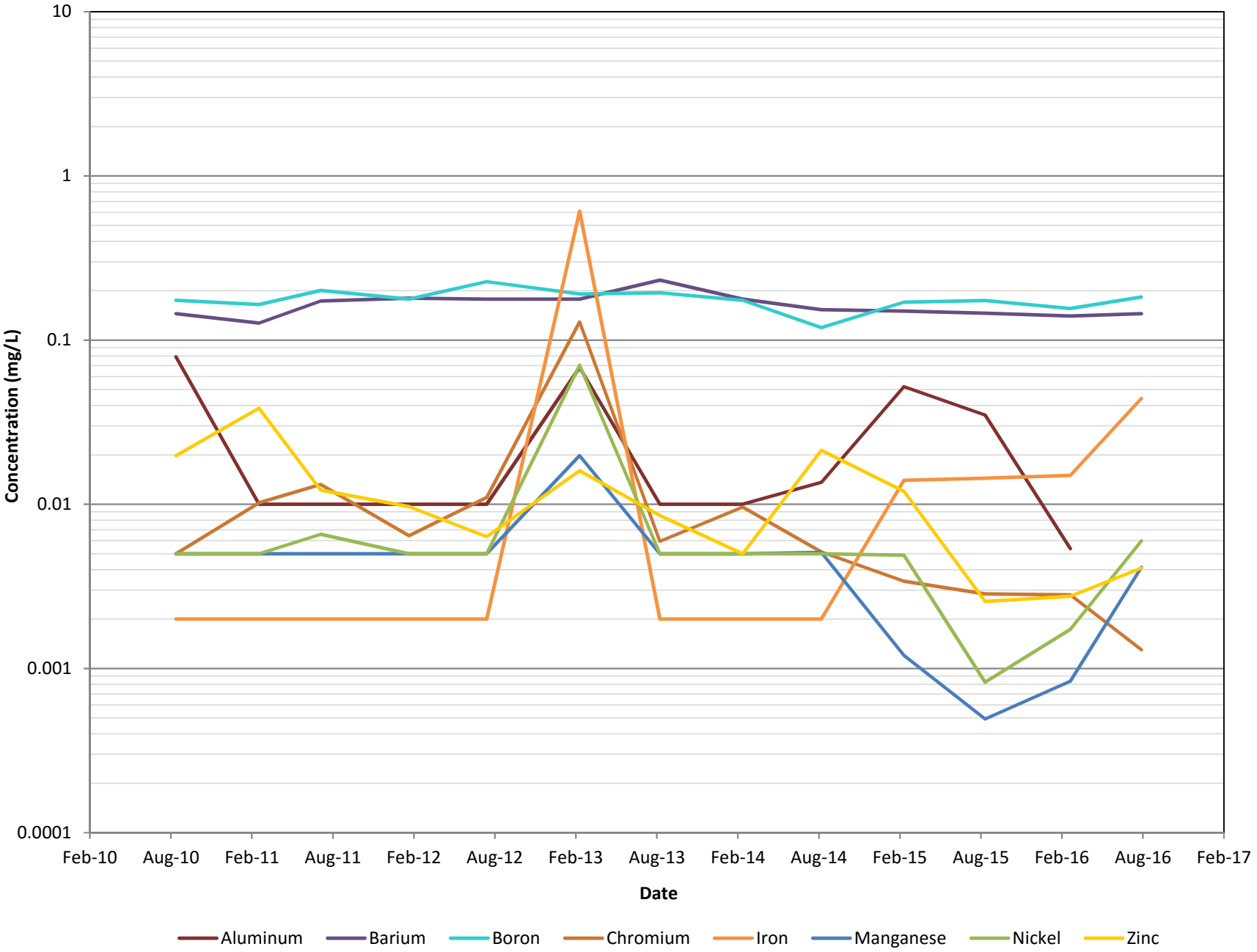
MW-15: ANION CONCENTRATIONS OVER TIME



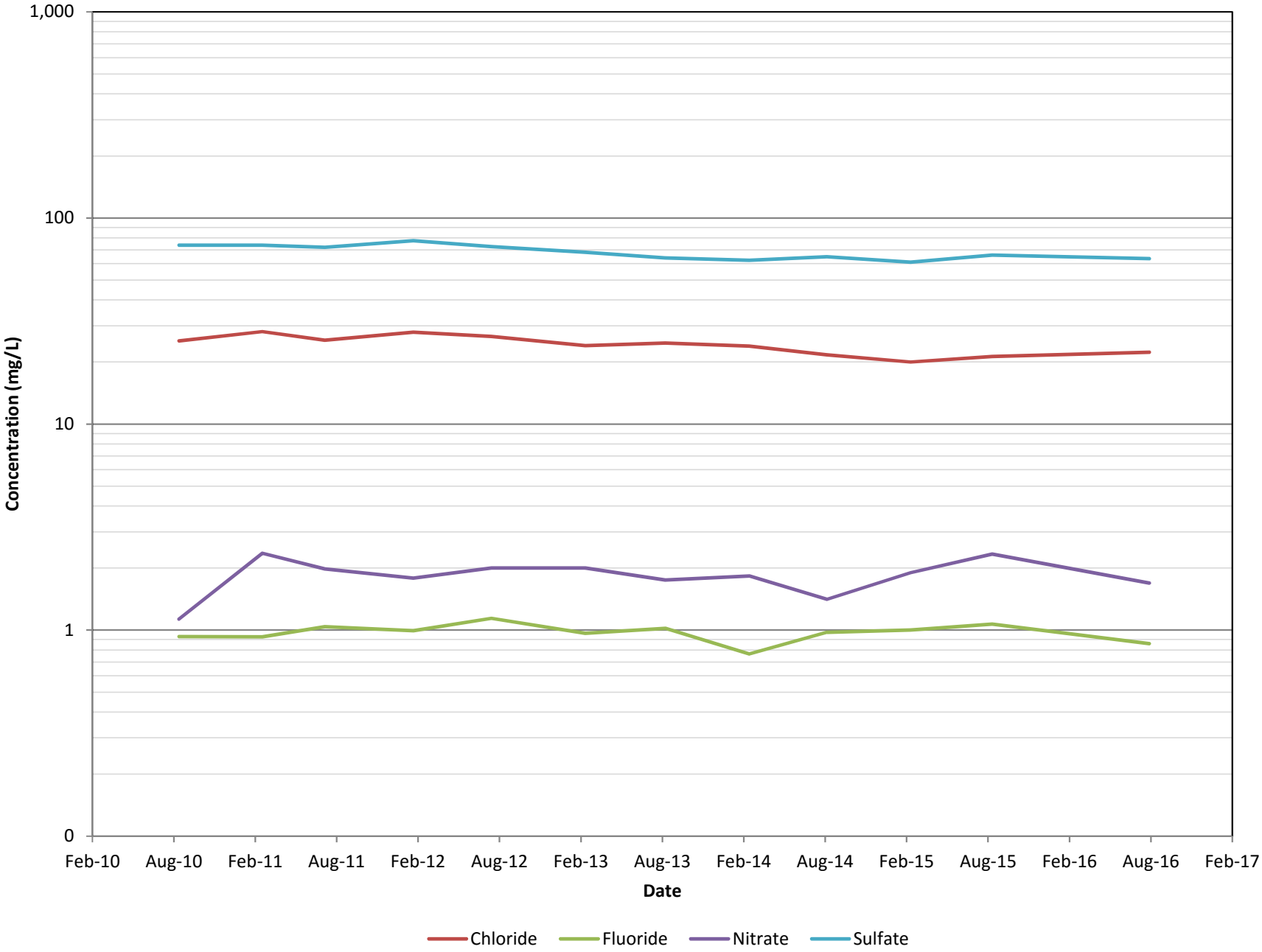
MW-15: TDS CONCENTRATIONS OVER TIME



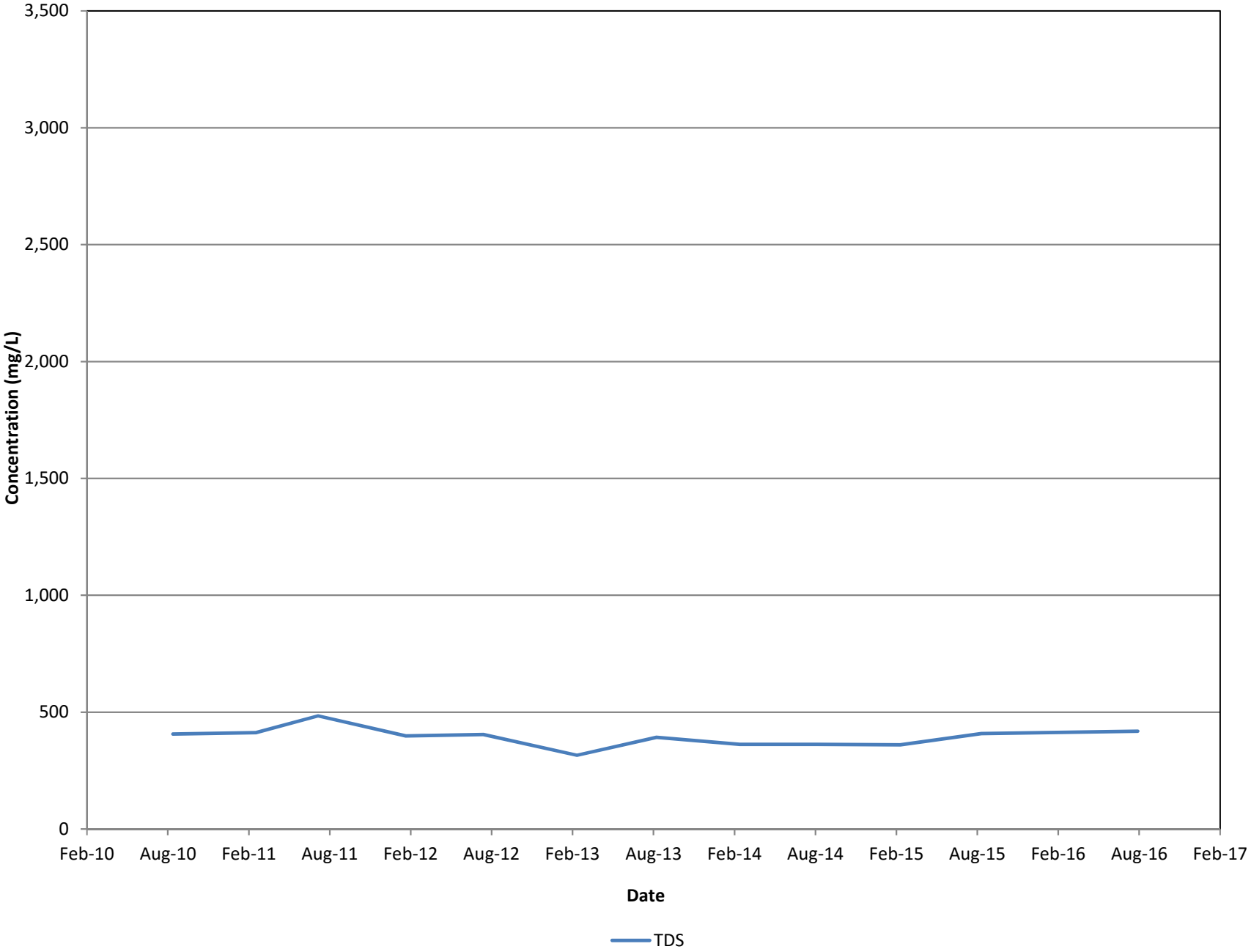
MW-15: METAL CONCENTRATIONS OVER TIME



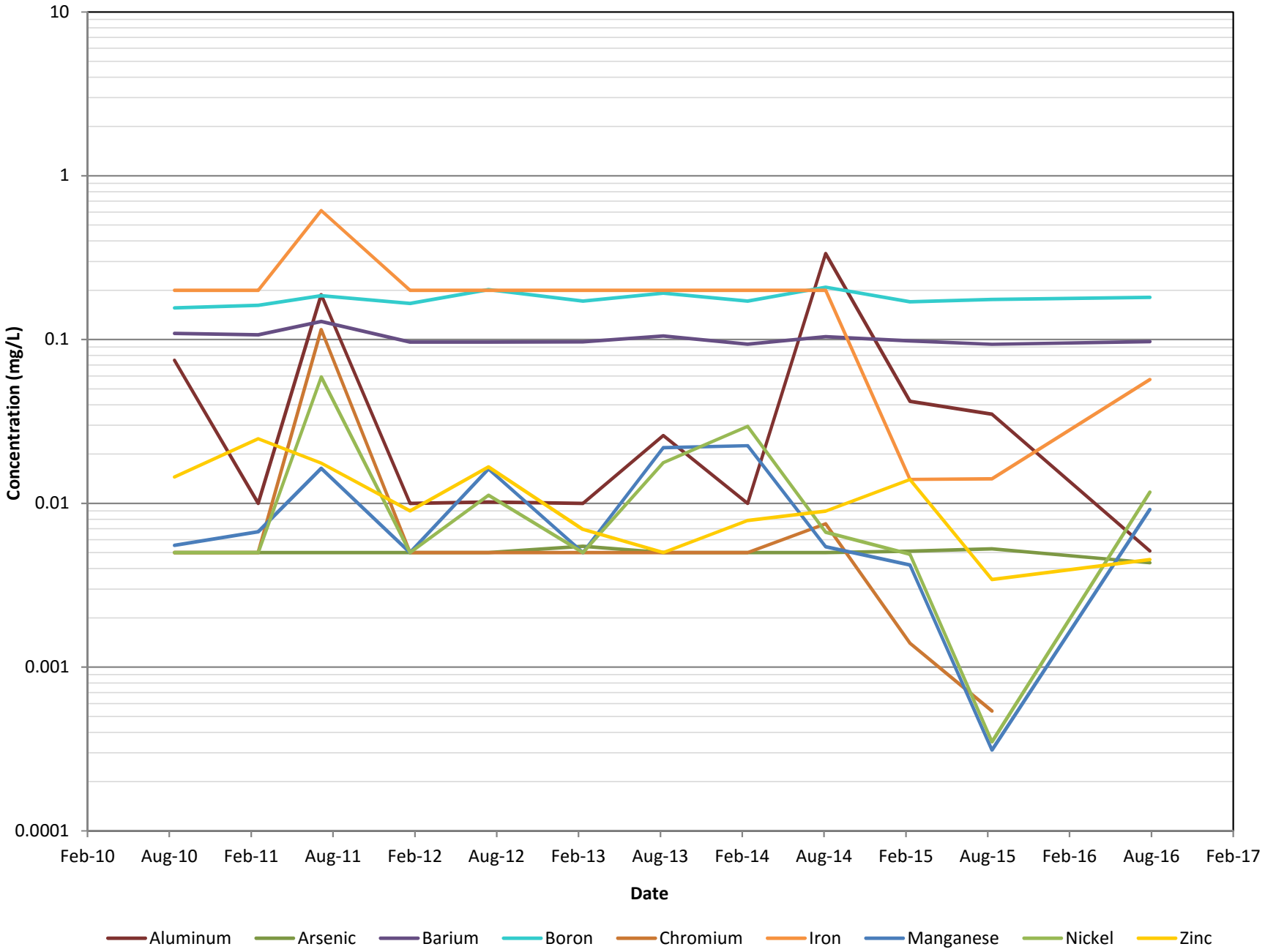
MW-16: ANION CONCENTRATIONS OVER TIME



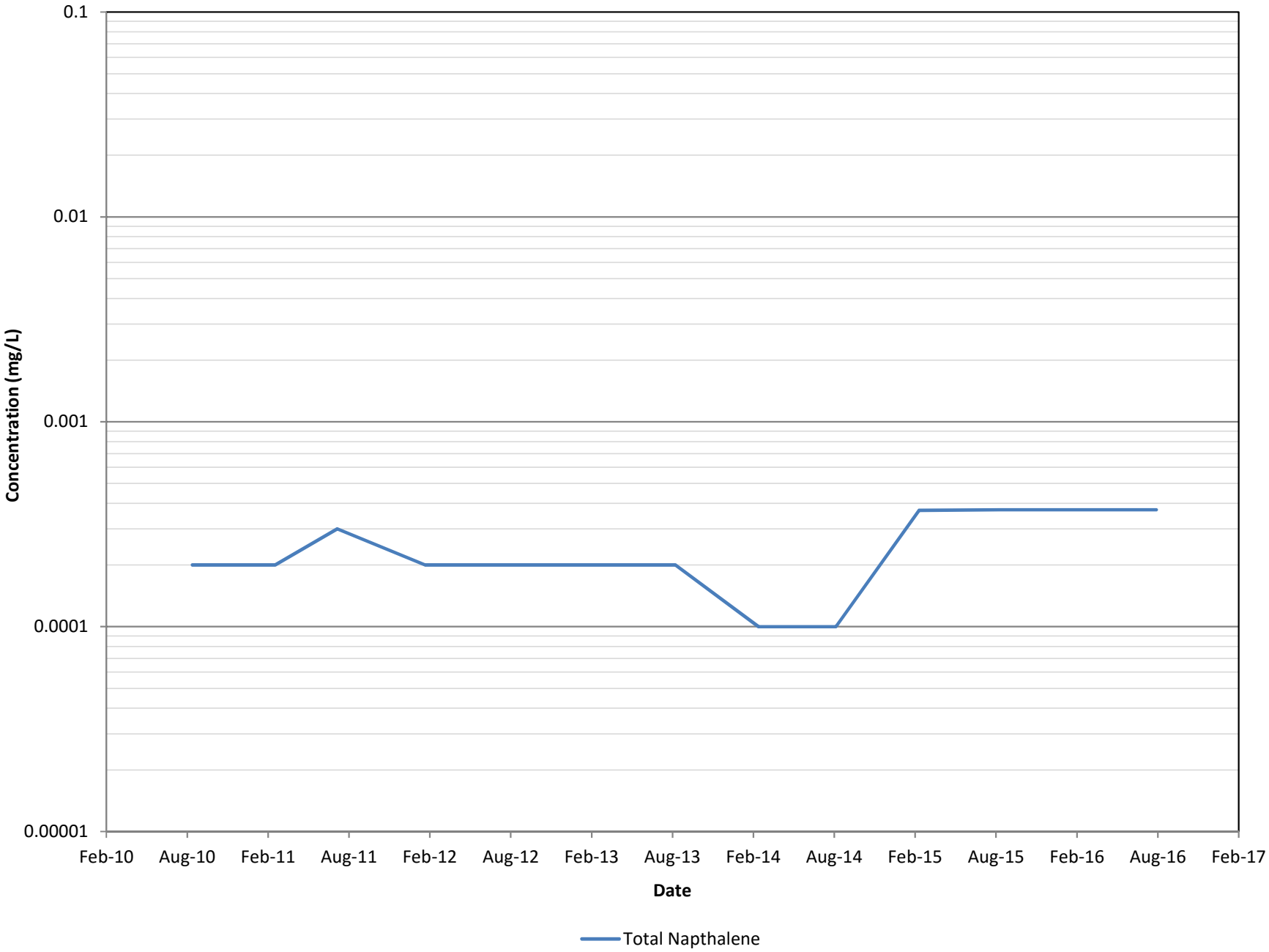
MW-16: TDS CONCENTRATIONS OVER TIME



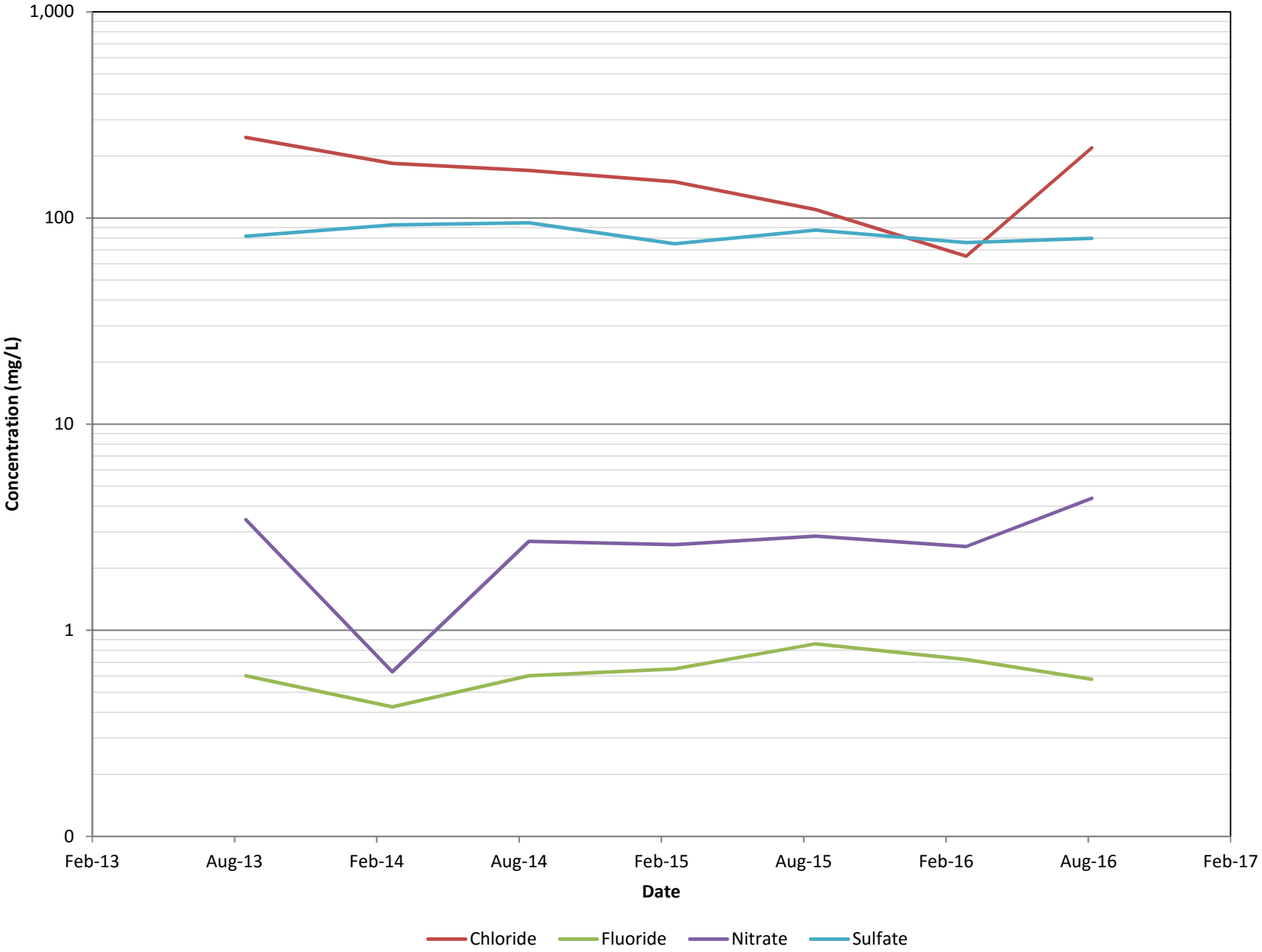
MW-16: METAL CONCENTRATIONS OVER TIME



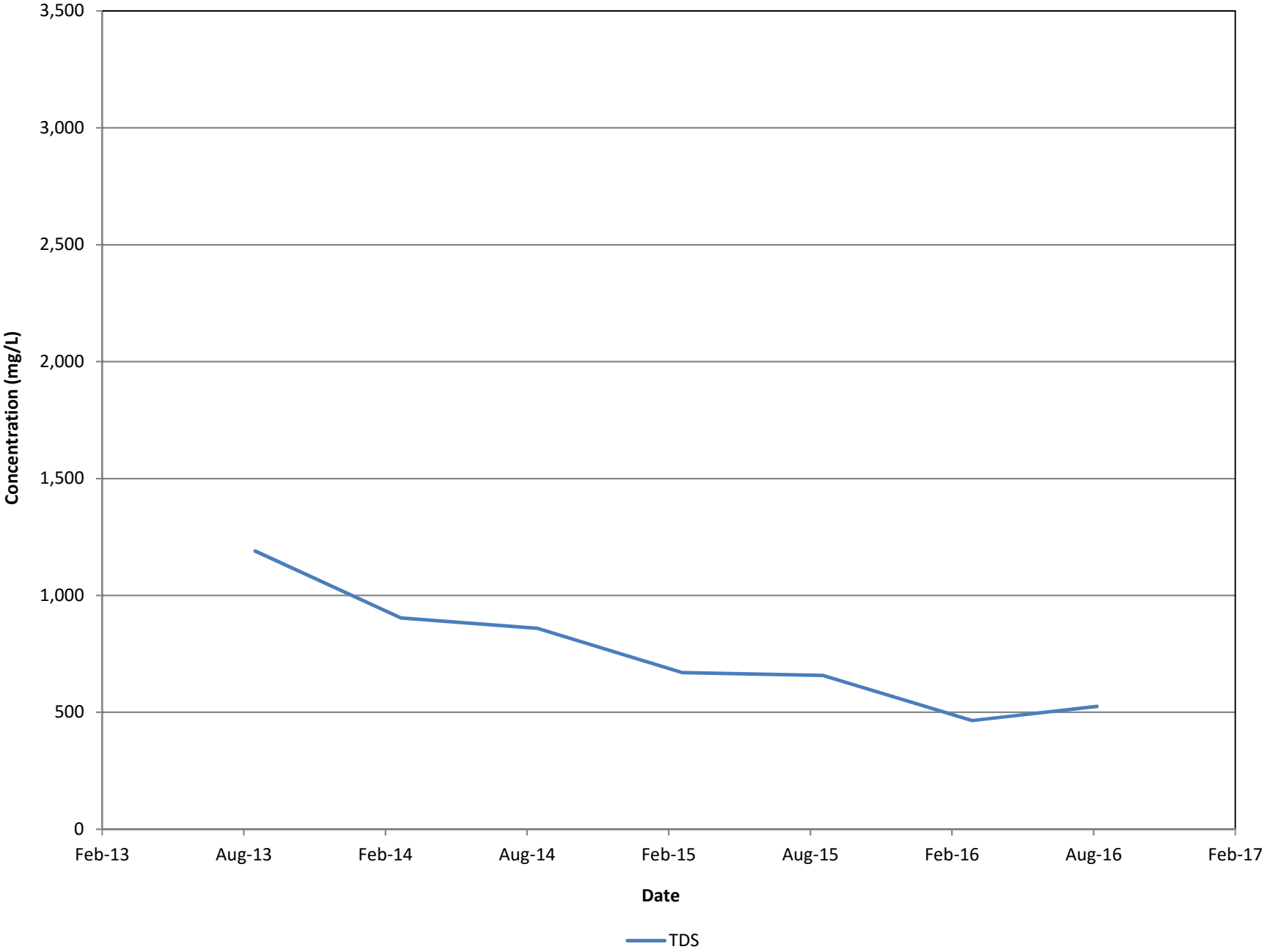
MW-16: SVOC CONCENTRATIONS OVER TIME



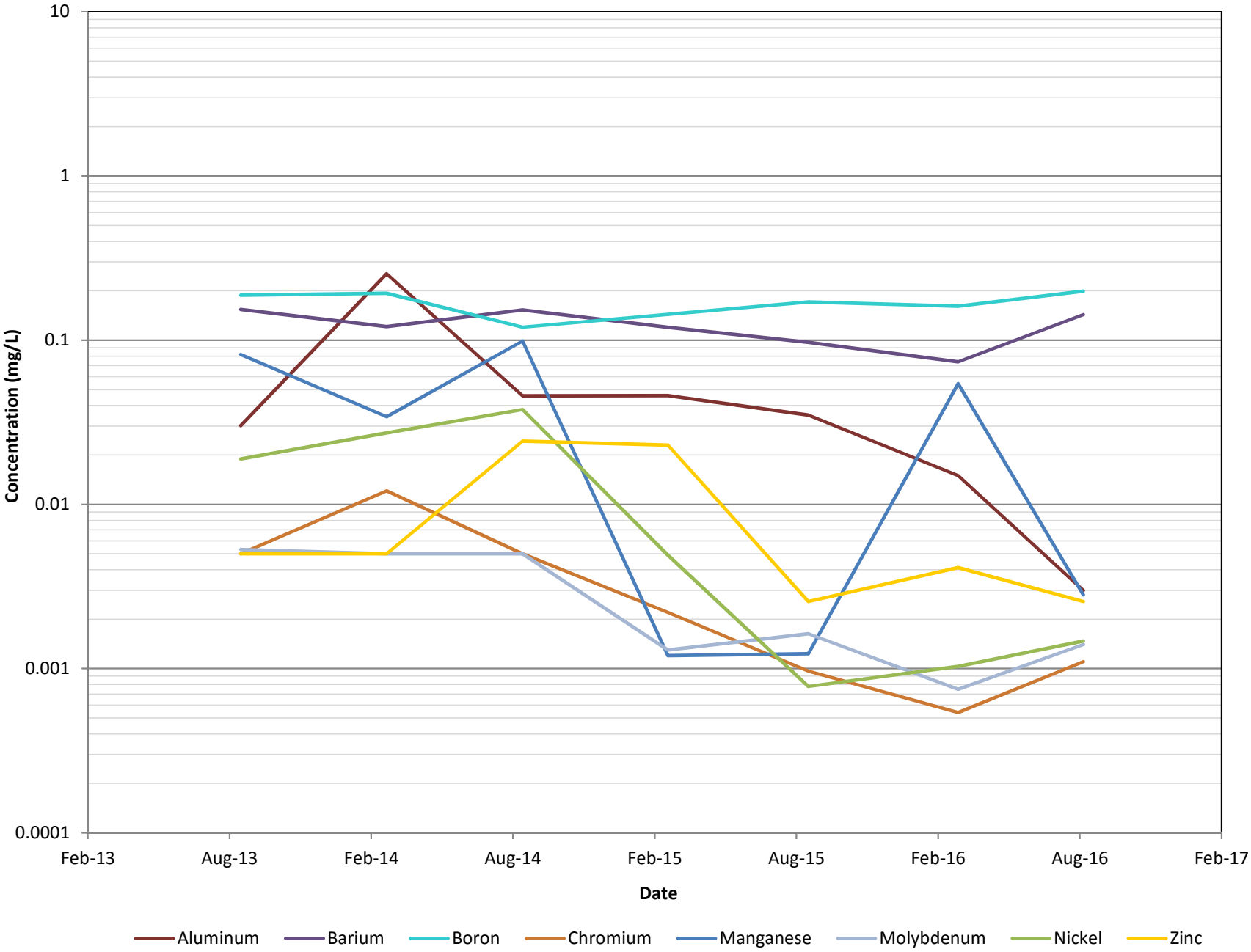
MW-17R: ANION CONCENTRATIONS OVER TIME



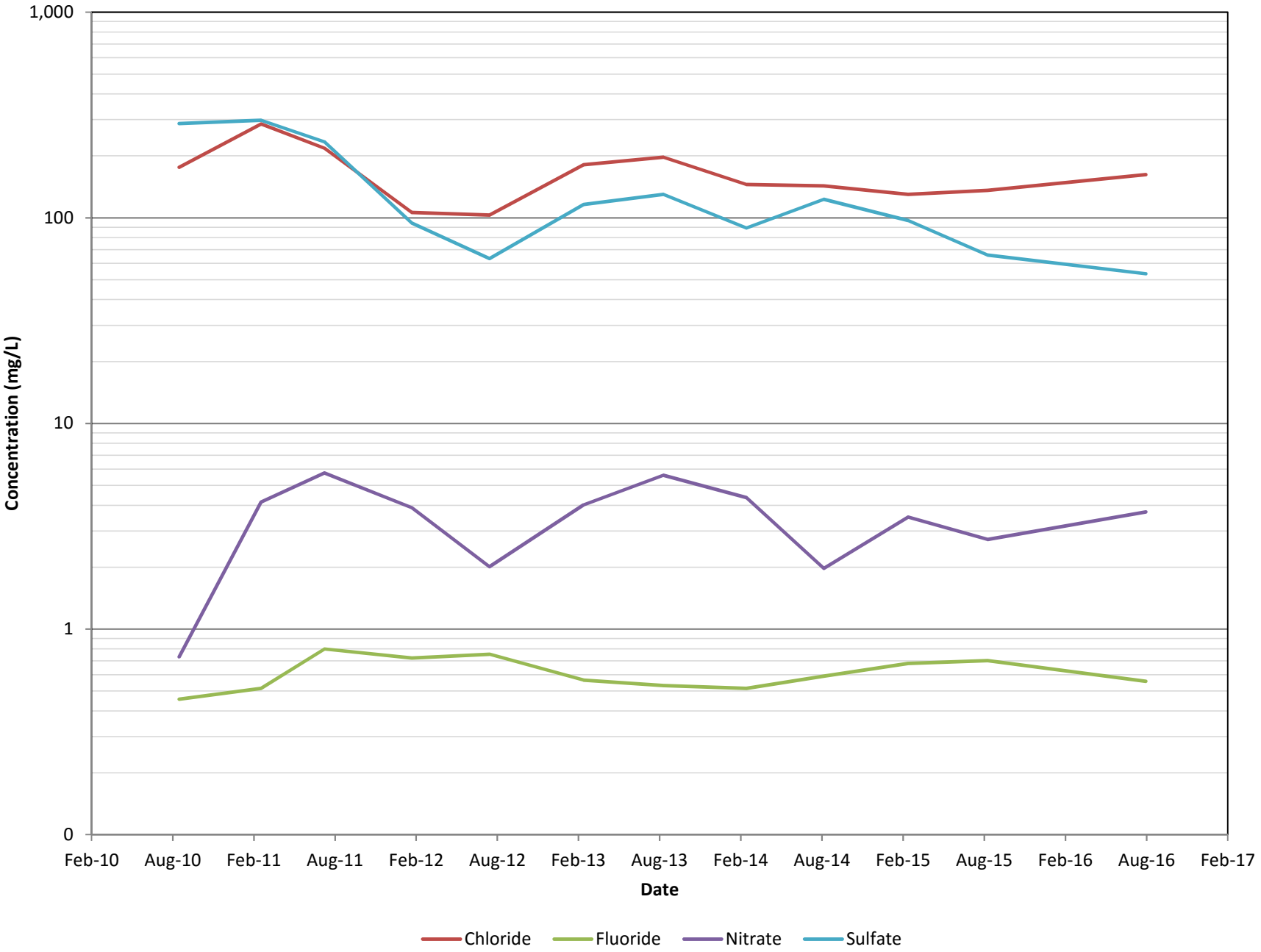
MW-17R: TDS CONCENTRATIONS OVER TIME



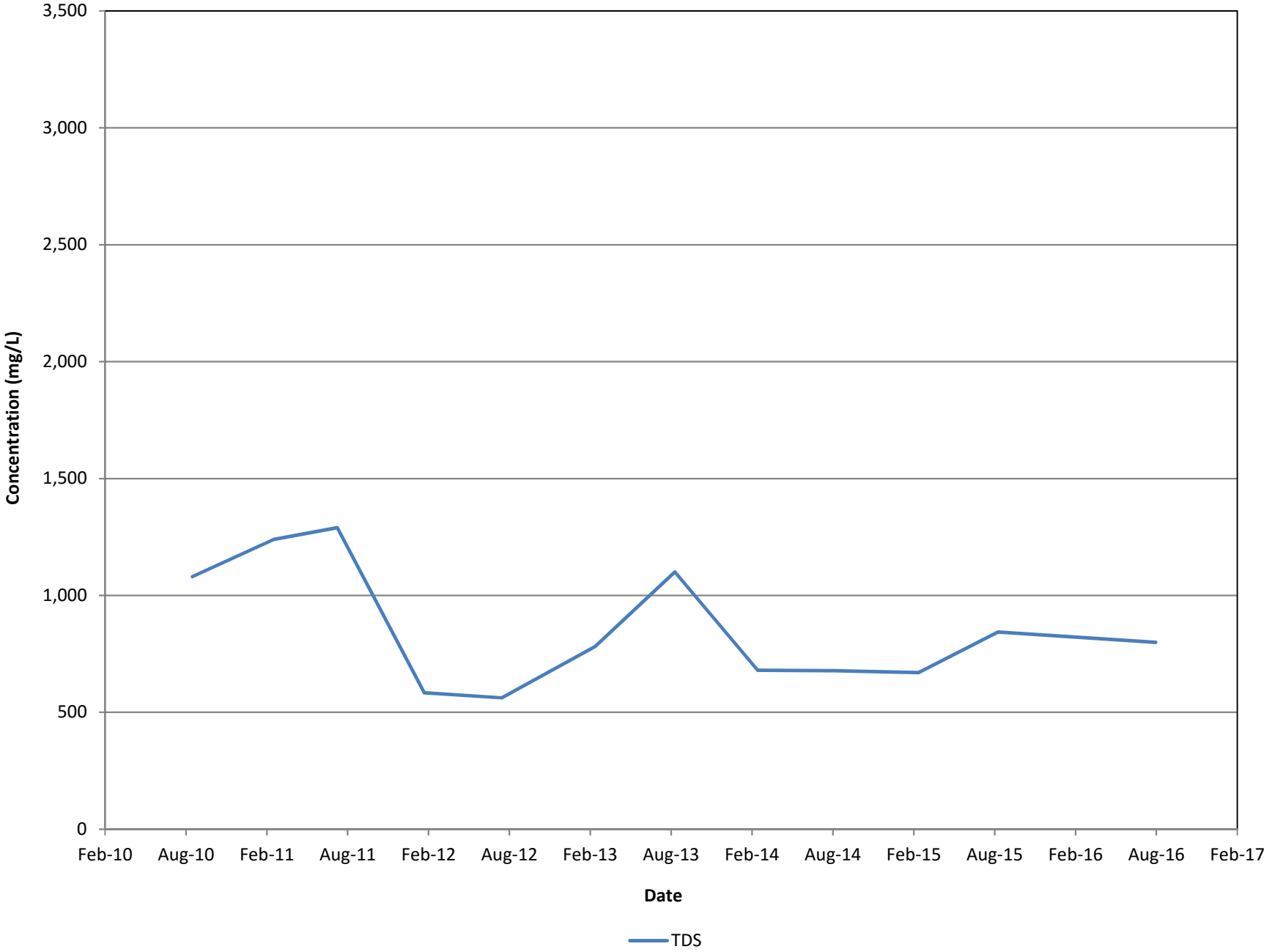
MW-17R: METAL CONCENTRATIONS OVER TIME



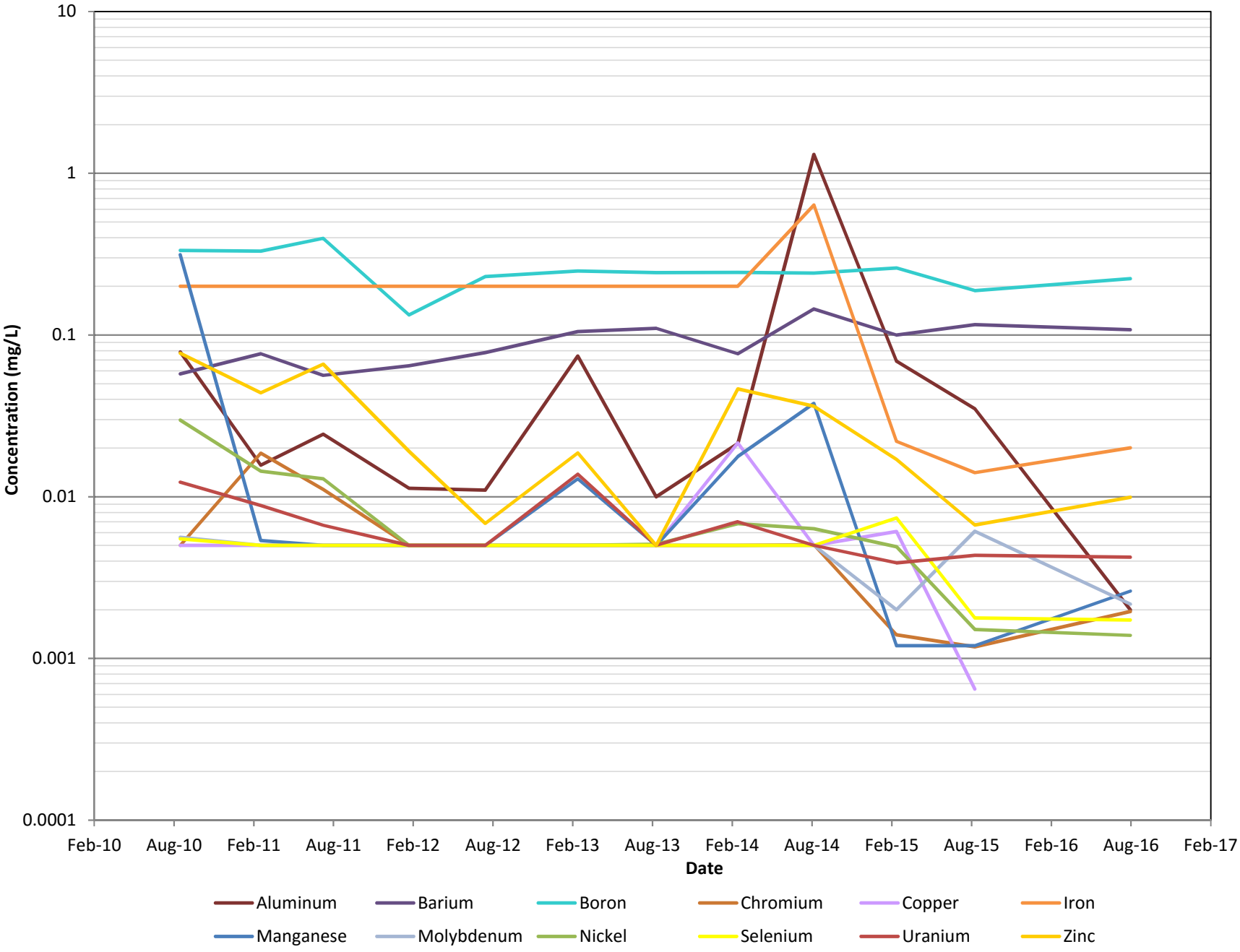
MW-18: ANION CONCENTRATIONS OVER TIME



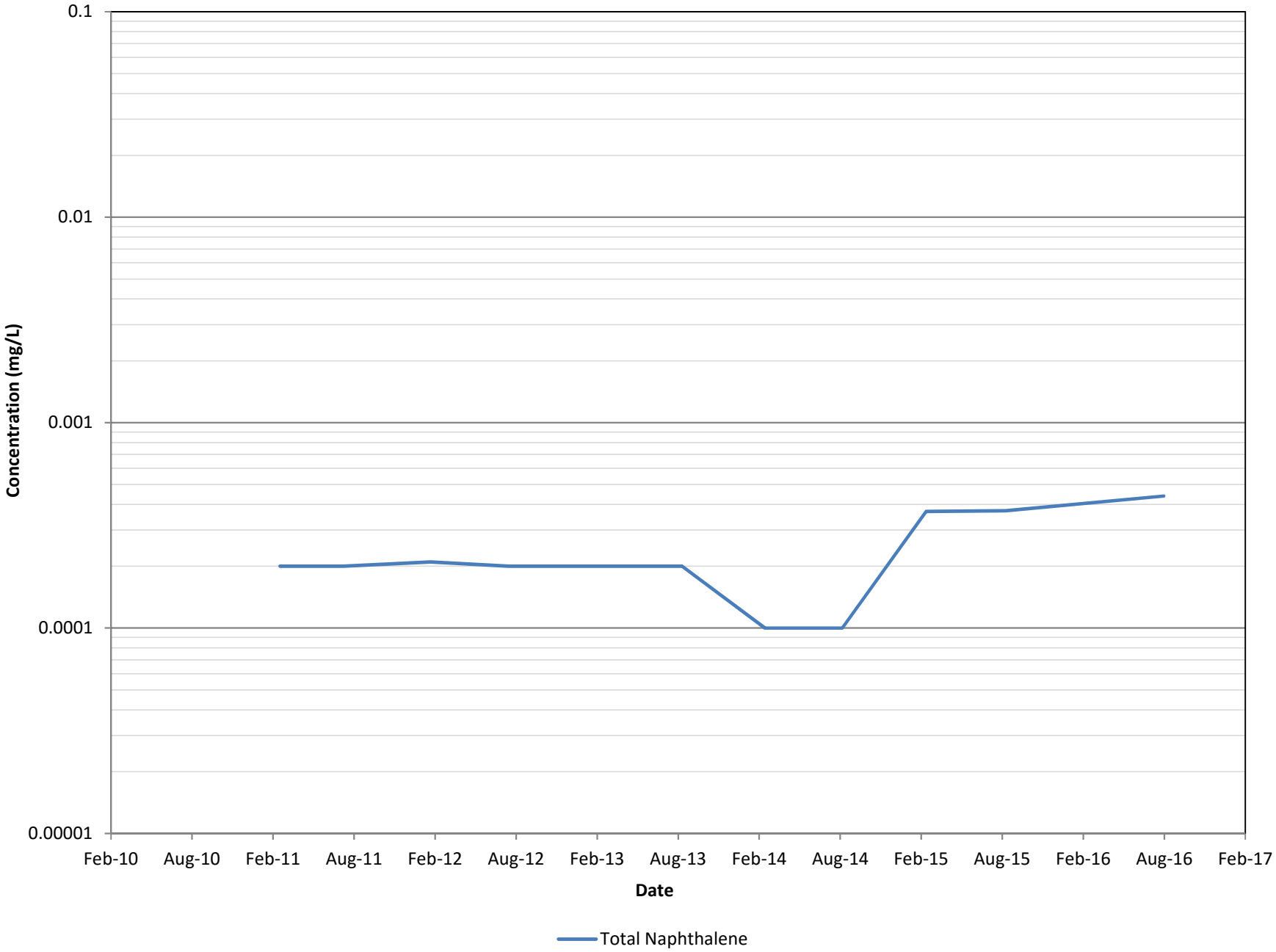
MW-18: TDS CONCENTRATIONS OVER TIME



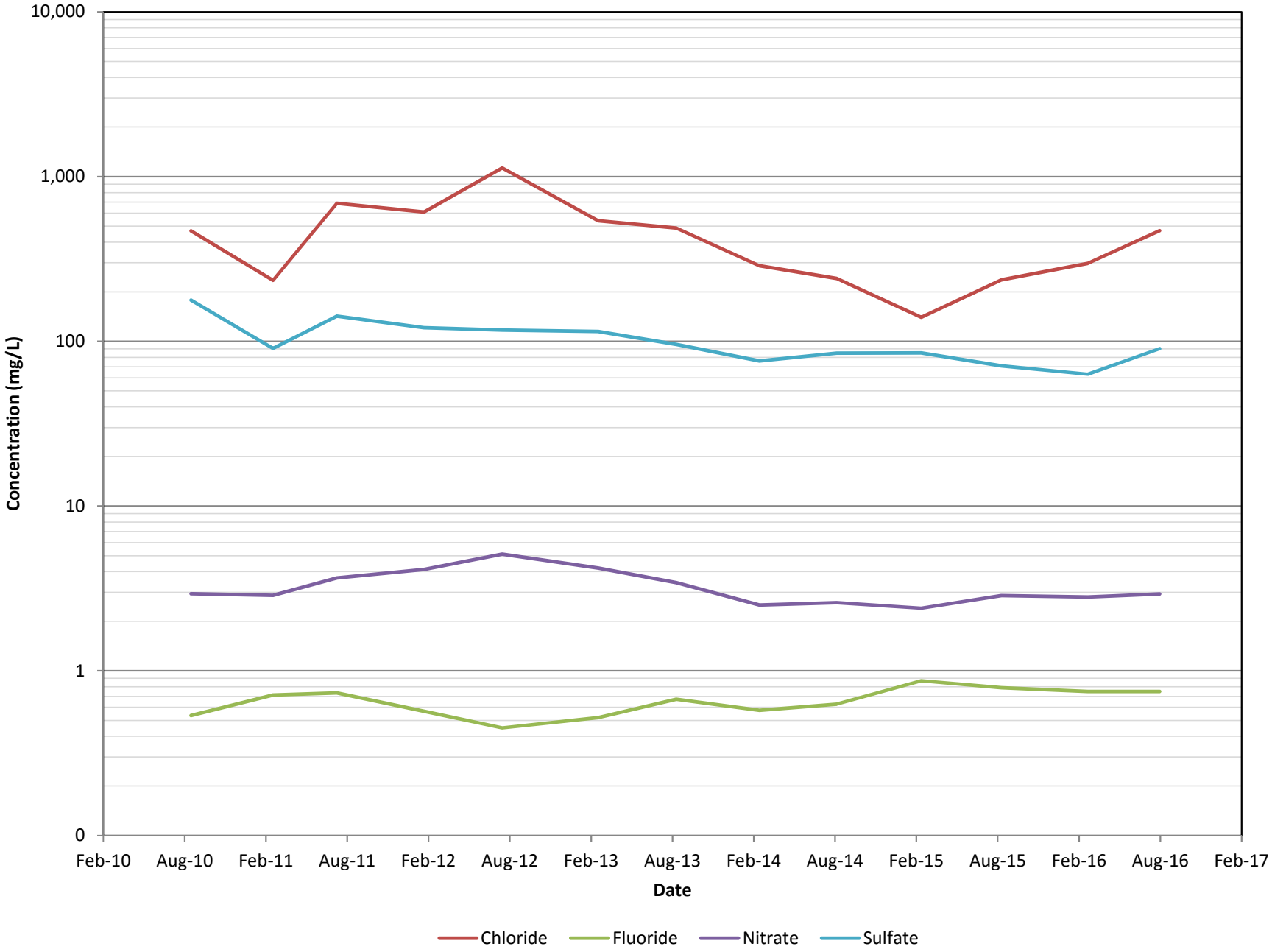
MW-18: METAL CONCENTRATIONS OVER TIME



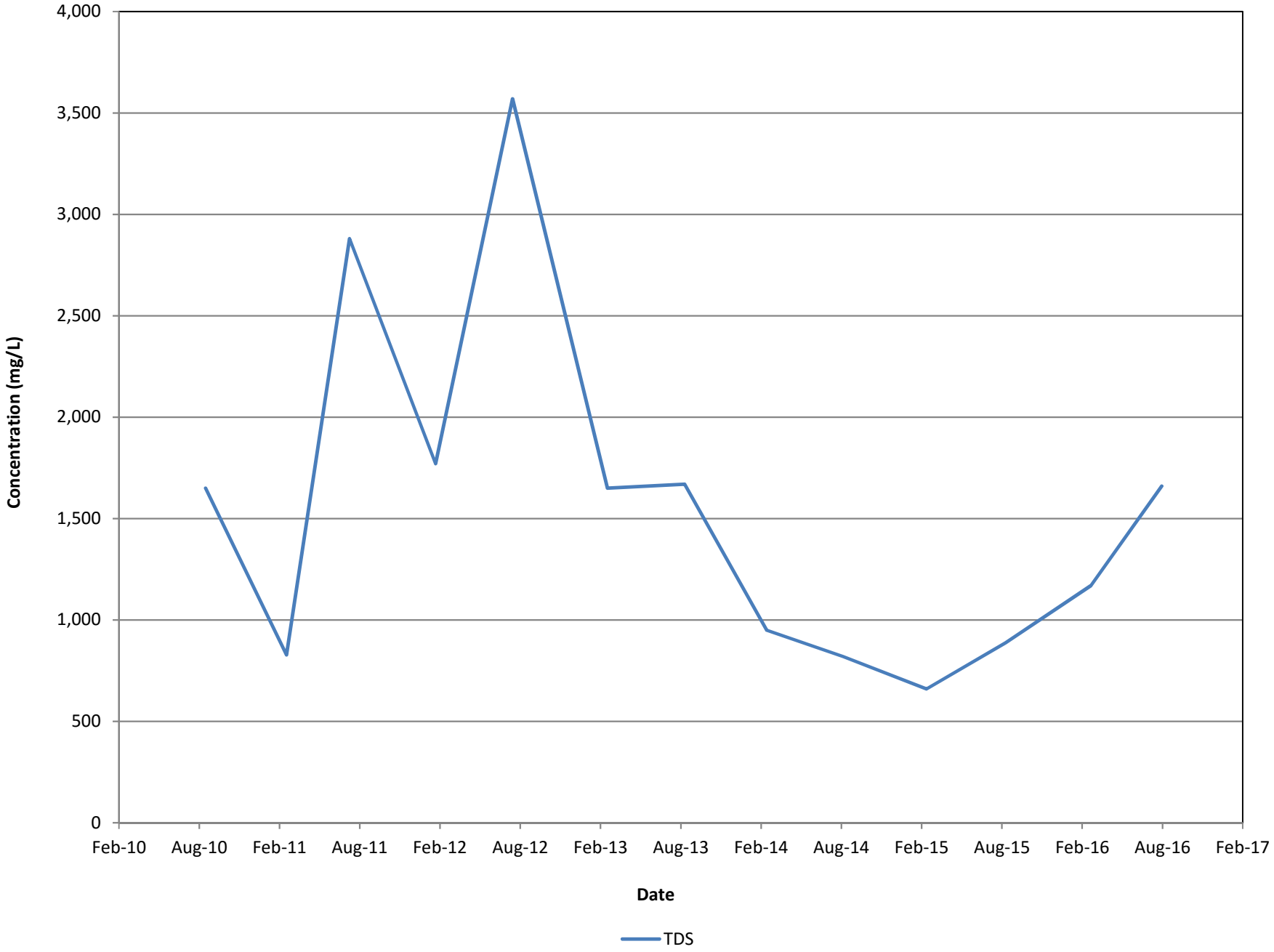
MW-18: SVOC CONCENTRATIONS OVER TIME



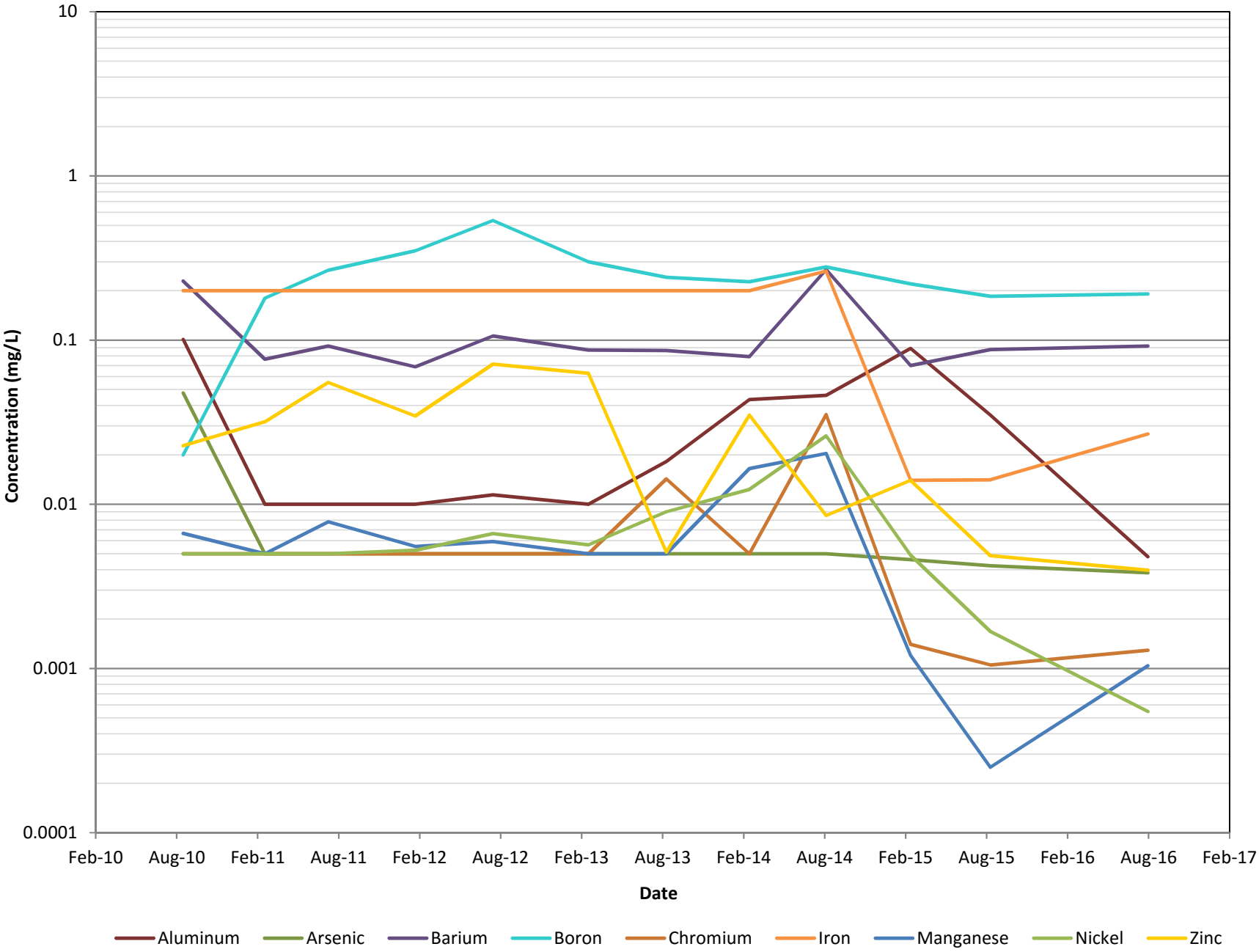
MW-19: ANION CONCENTRATIONS OVER TIME



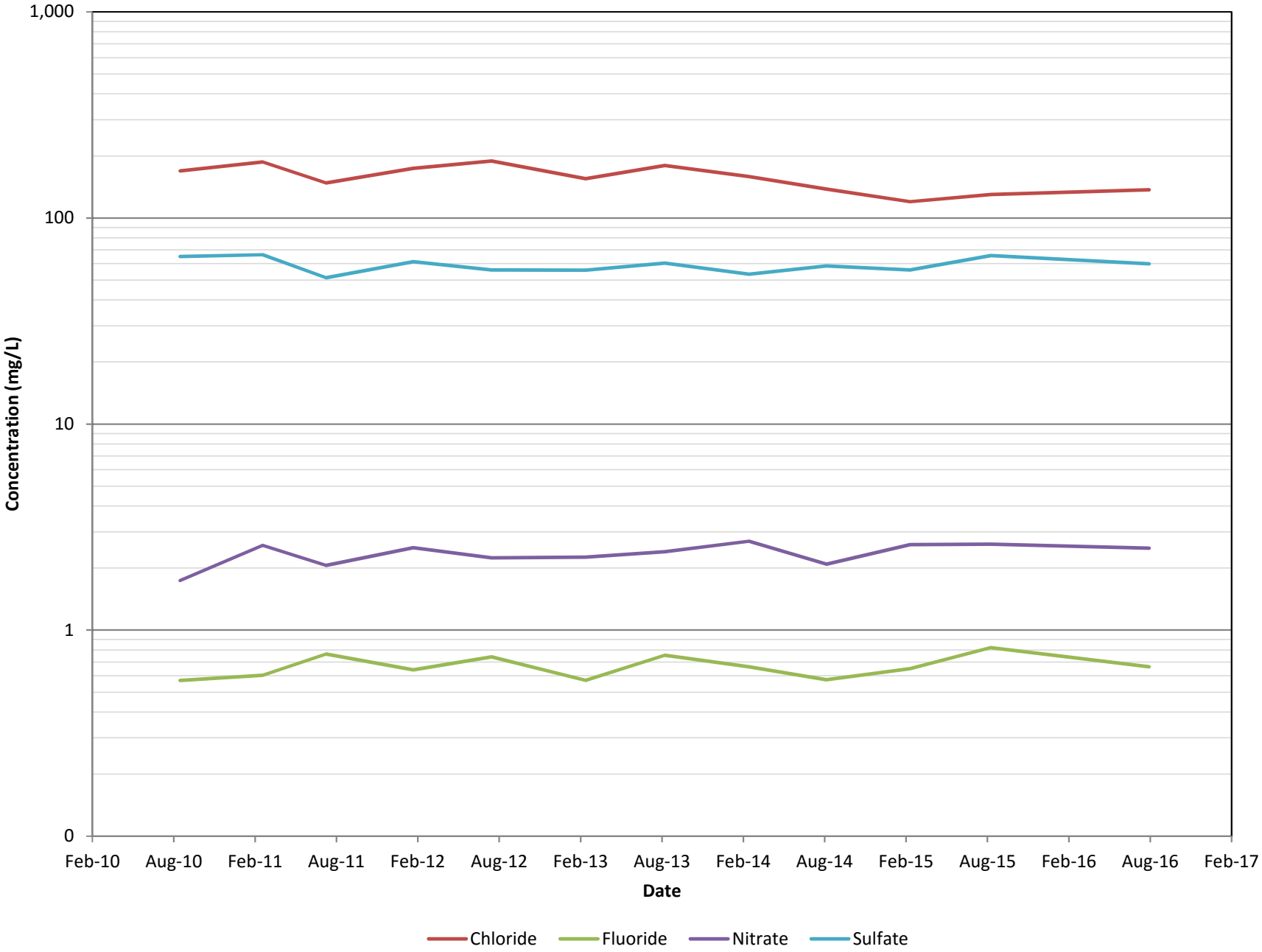
MW-19: TDS CONCENTRATIONS OVER TIME



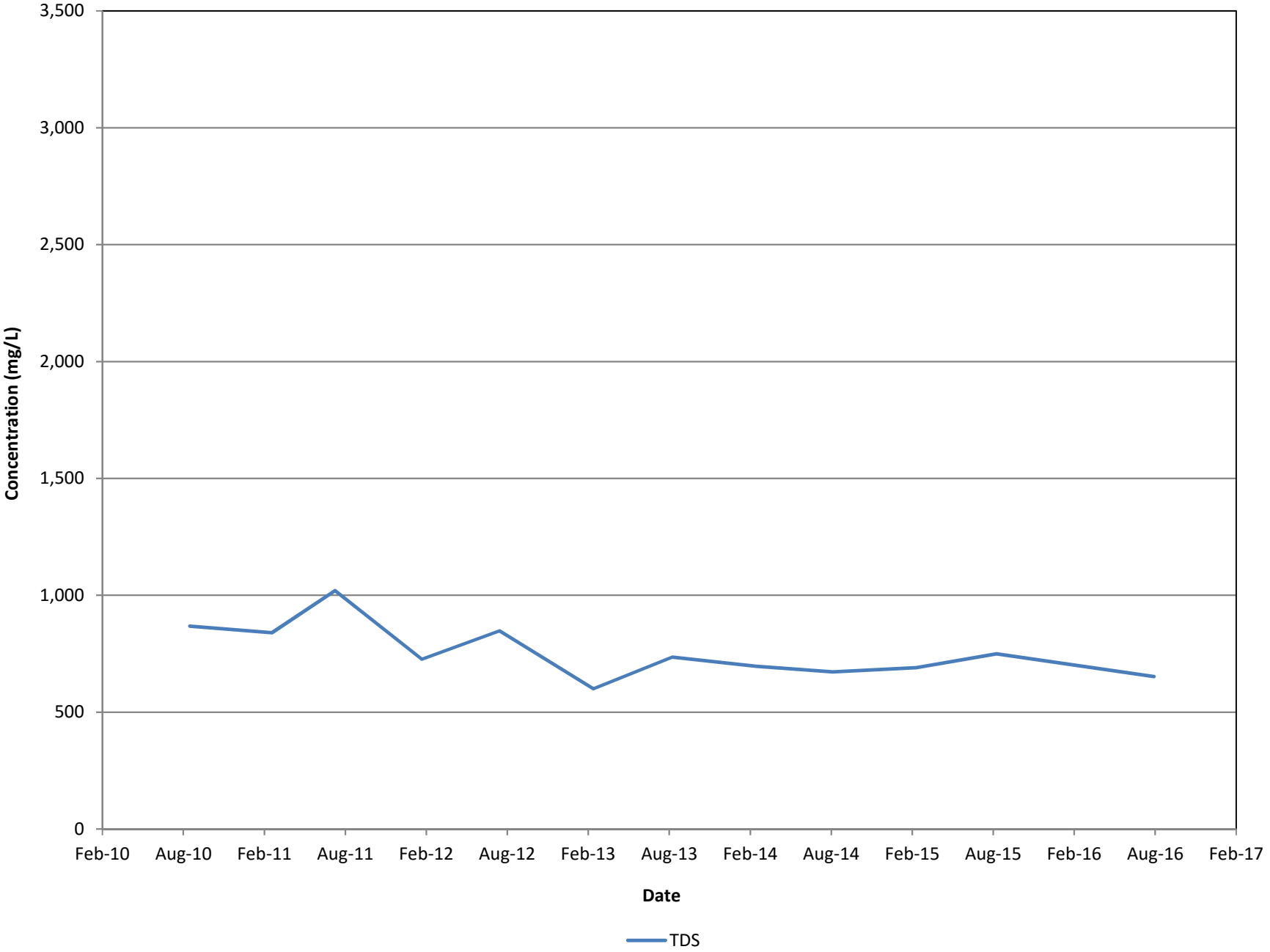
MW-19: METAL CONCENTRATIONS OVER TIME



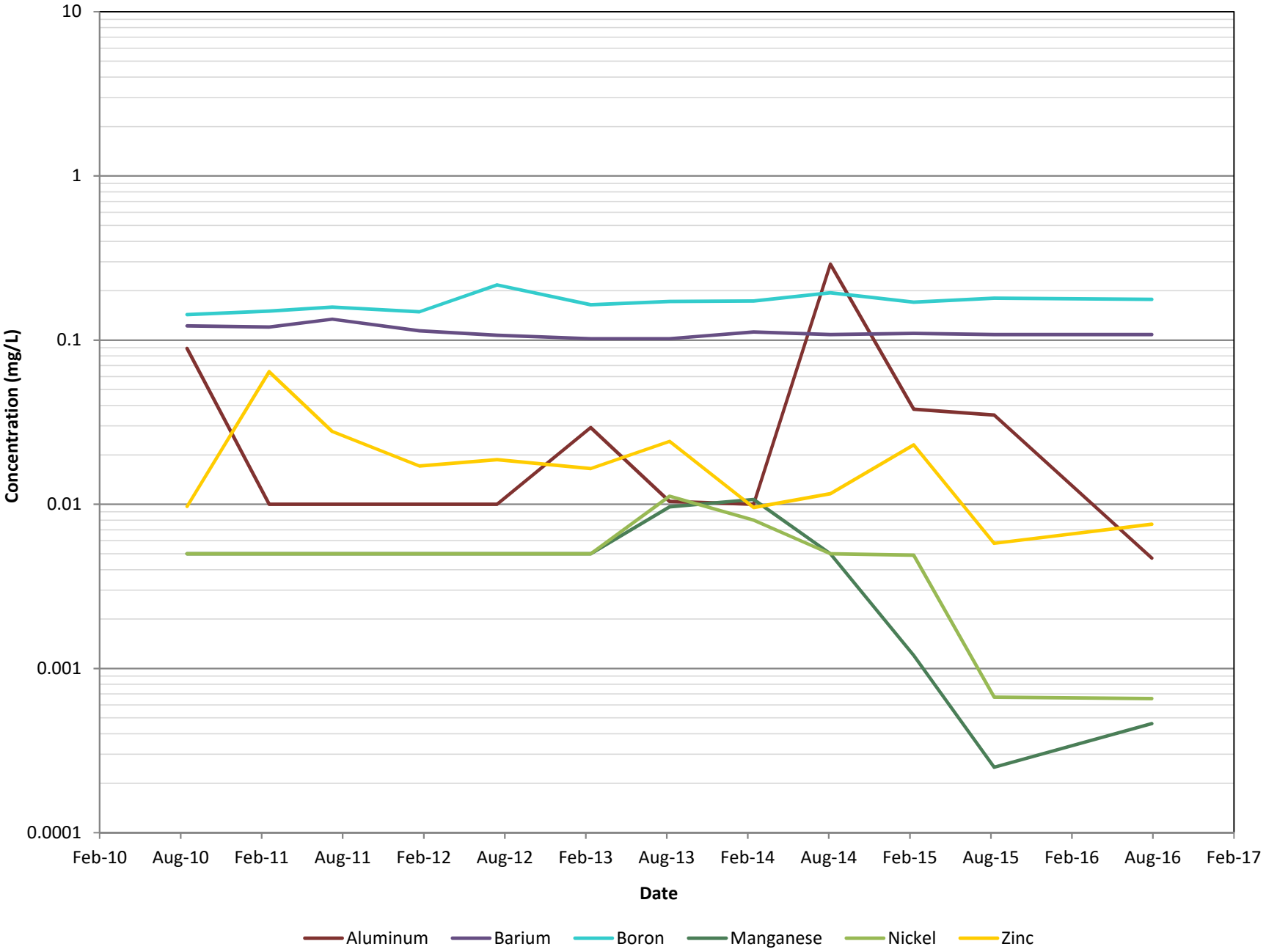
MW-20: ANION CONCENTRATIONS OVER TIME



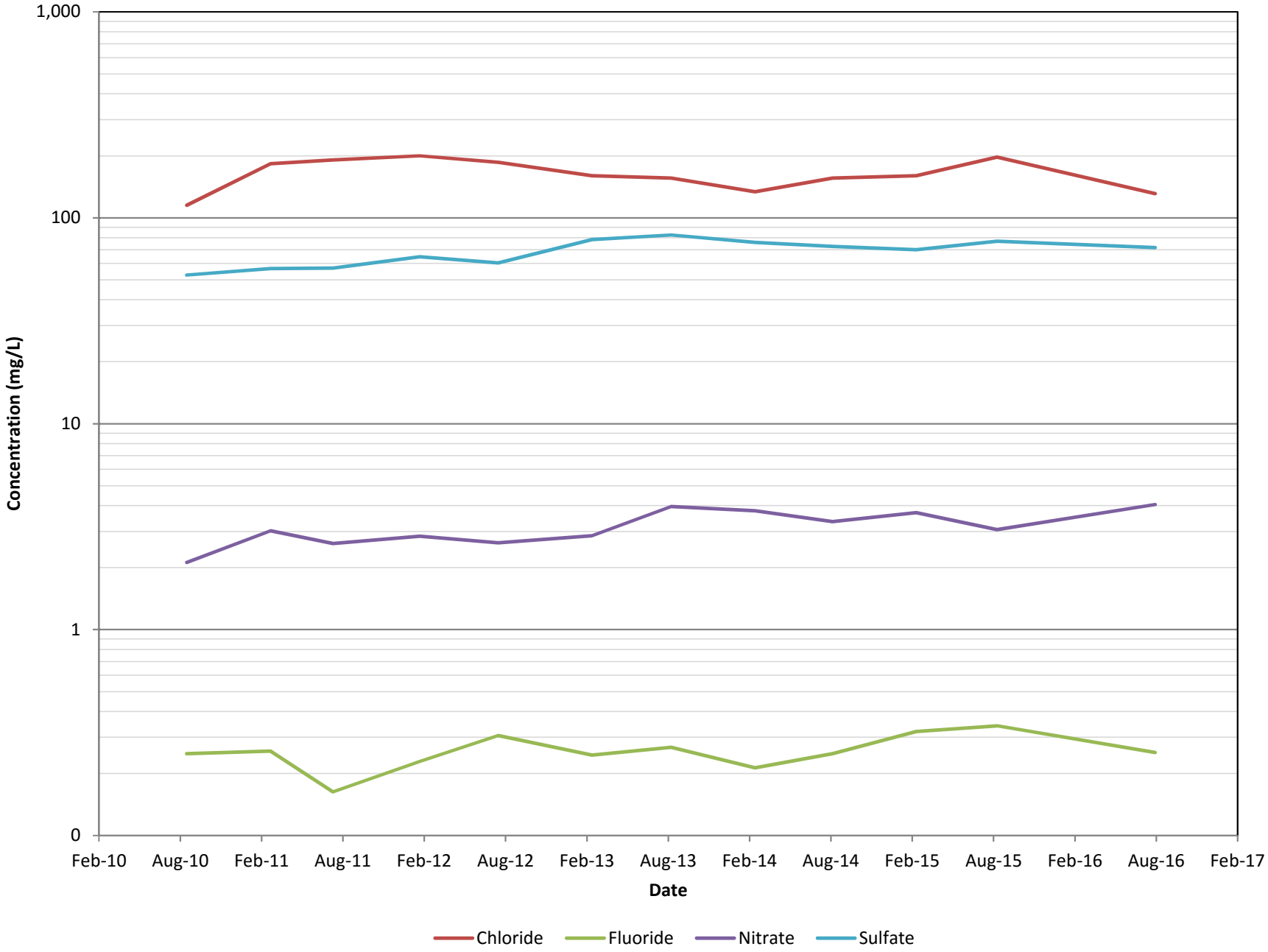
MW-20: TDS CONCENTRATIONS OVER TIME



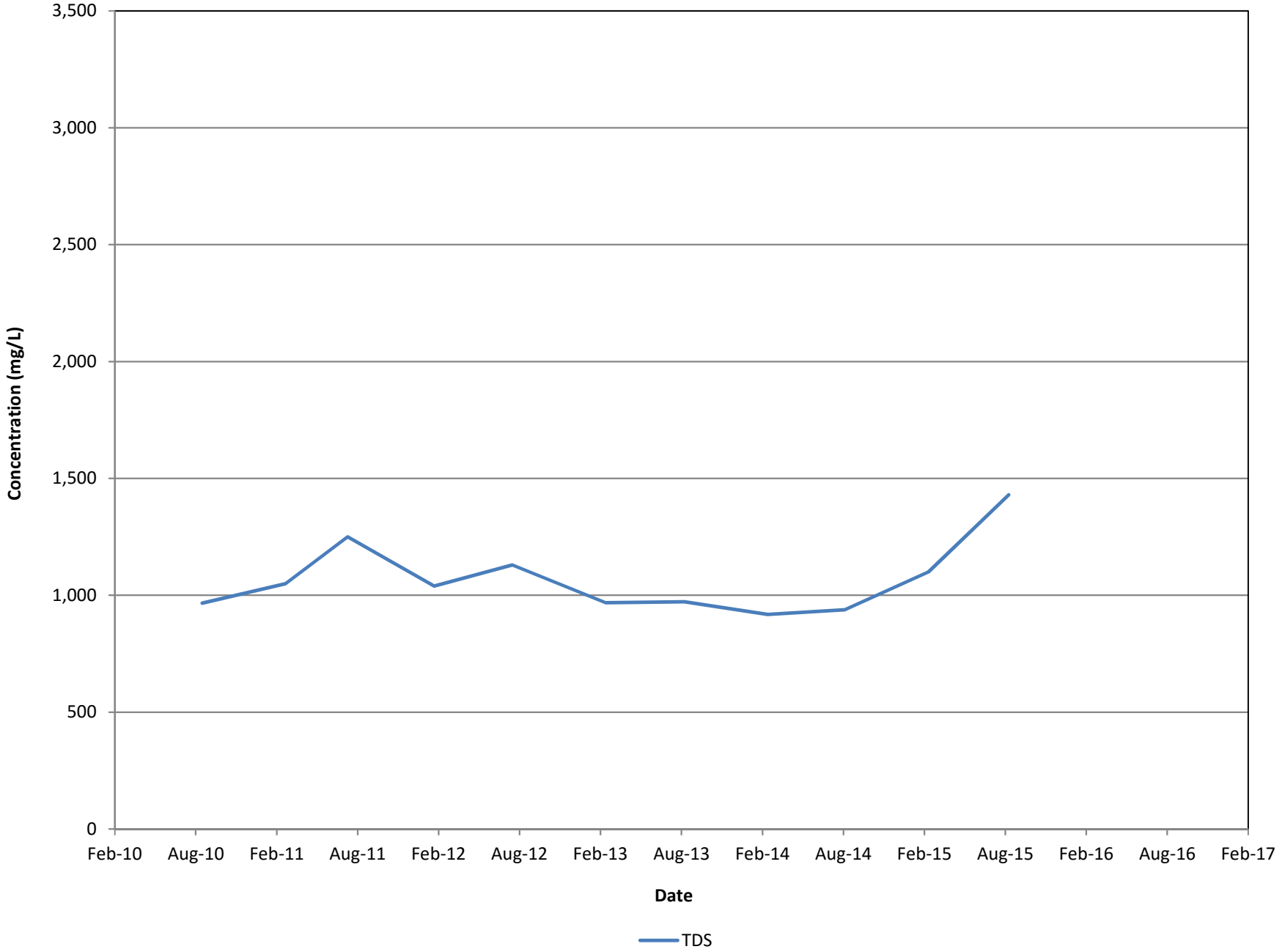
MW-20: METAL CONCENTRATIONS OVER TIME



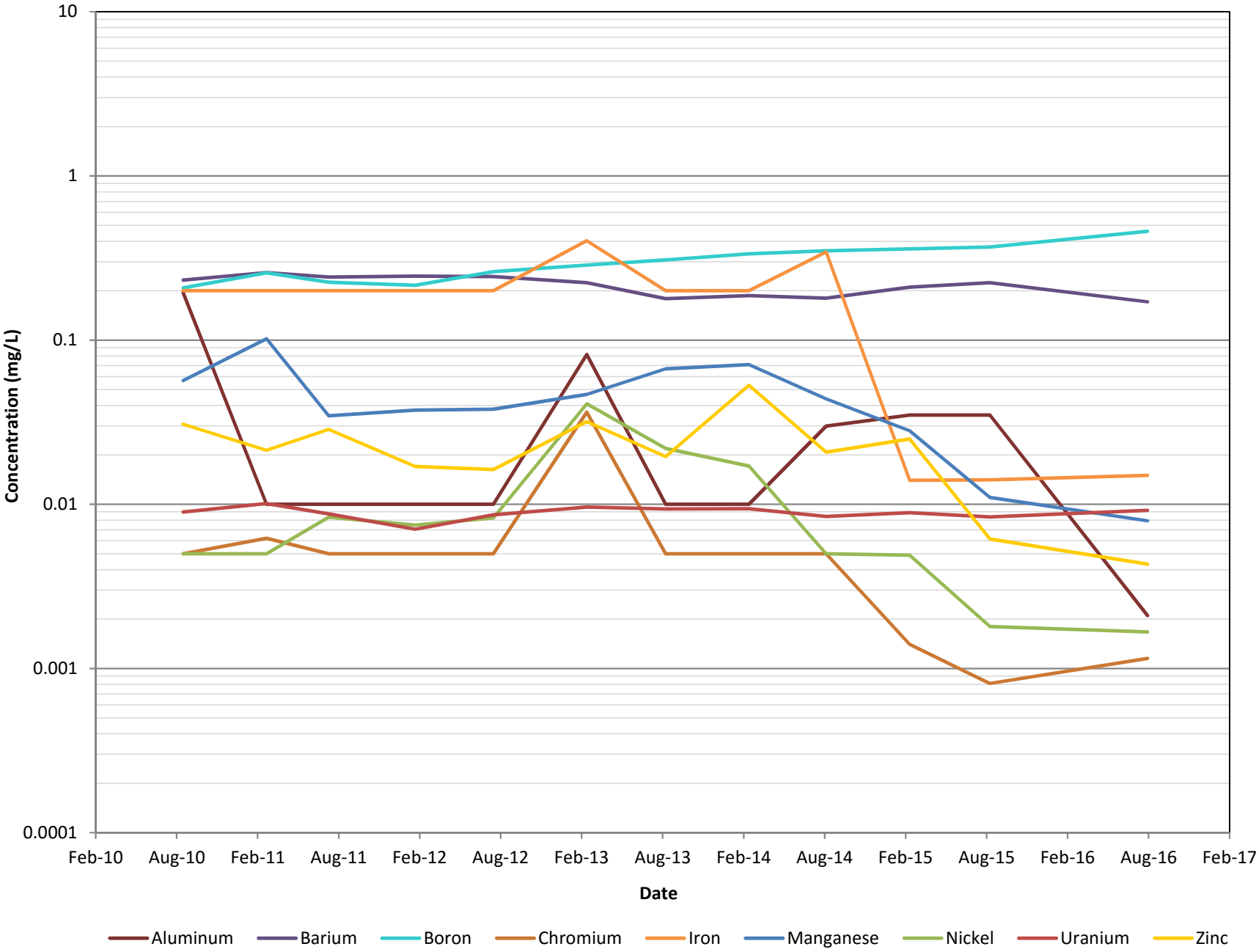
MW-21: ANION CONCENTRATIONS OVER TIME



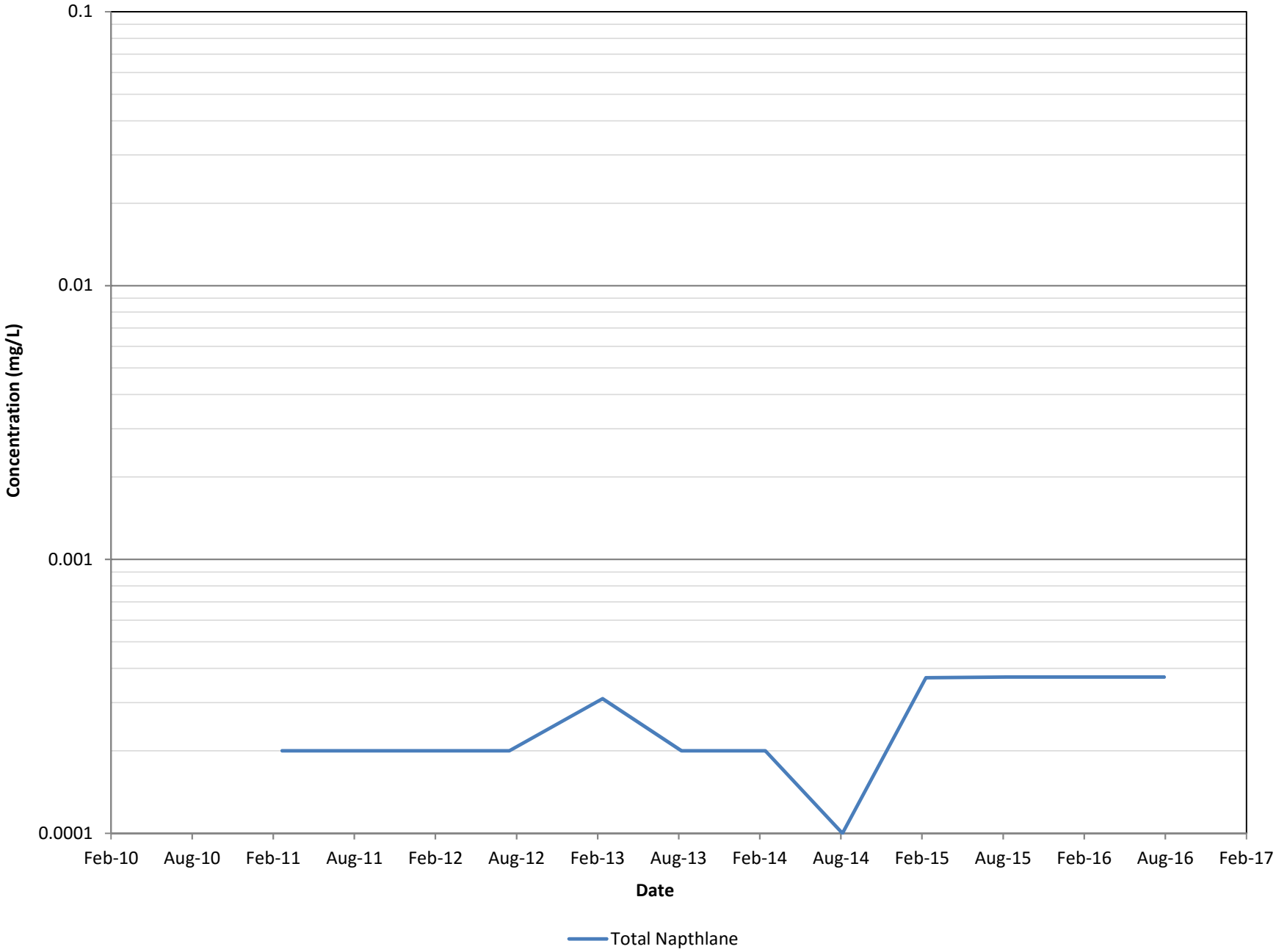
MW-21: TDS CONCENTRATIONS OVER TIME



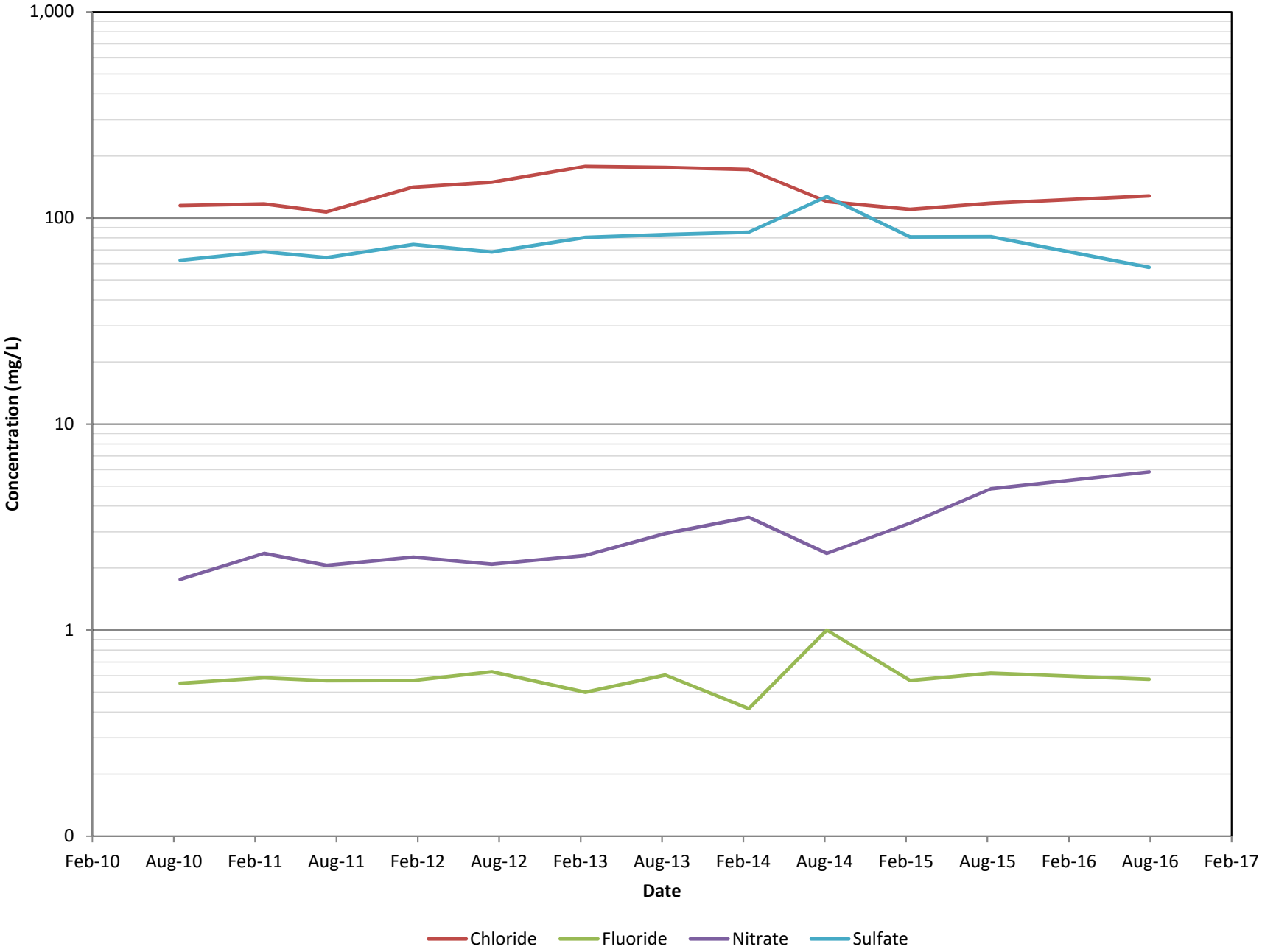
MW-21: METAL CONCENTRATIONS OVER TIME



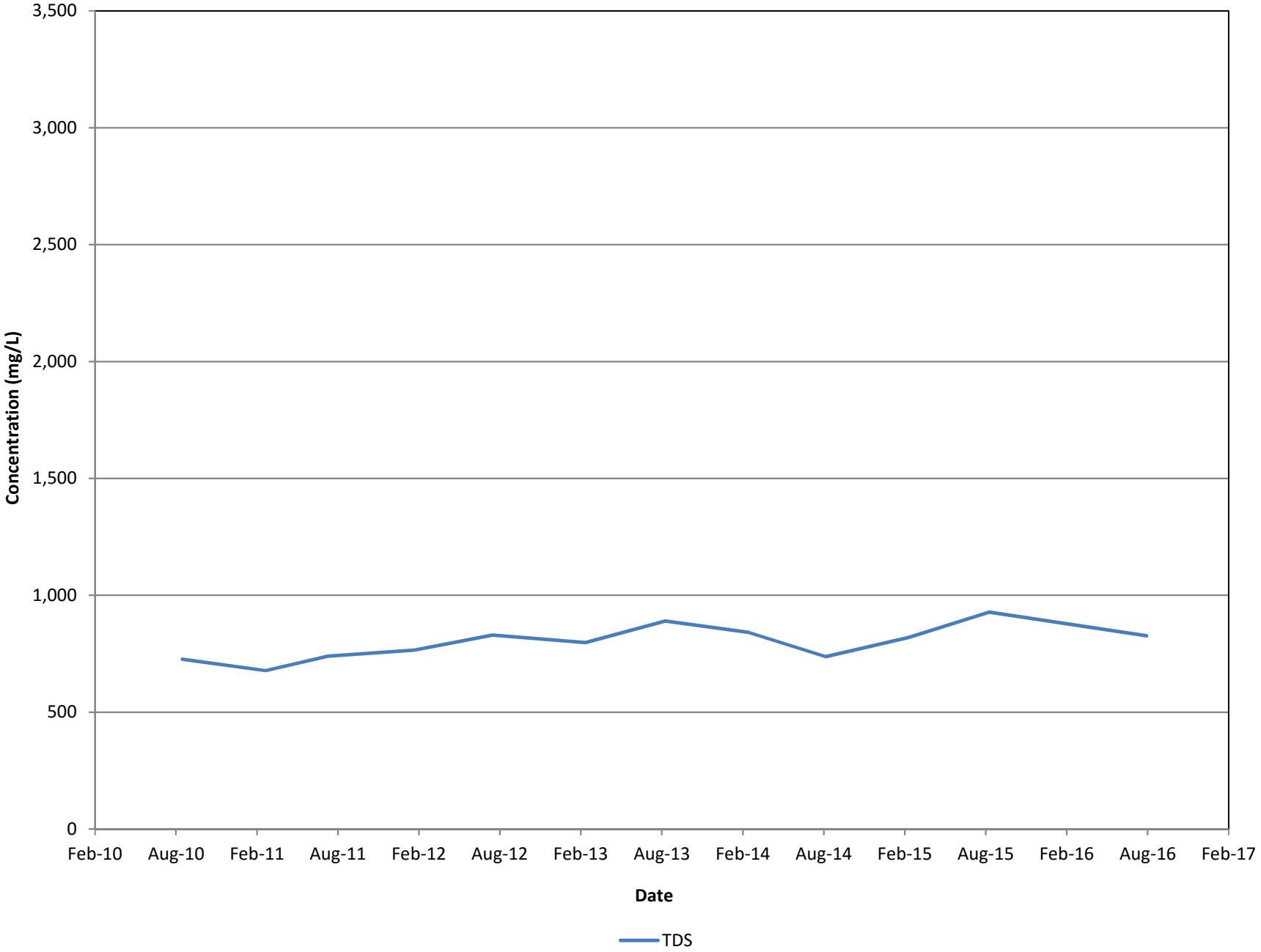
MW-21: SVOC CONCENTRATIONS OVER TIME



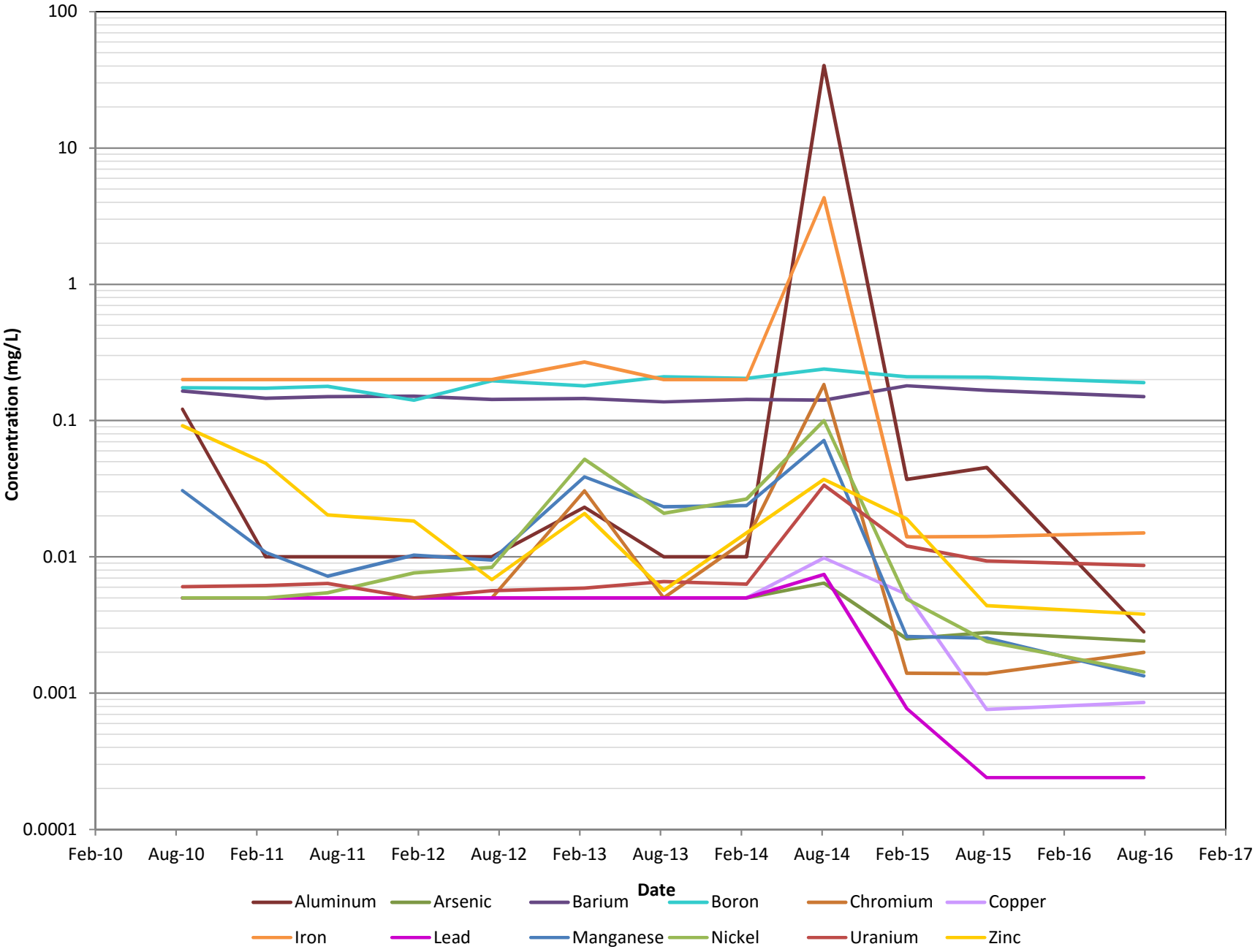
MW-22: ANION CONCENTRATIONS OVER TIME



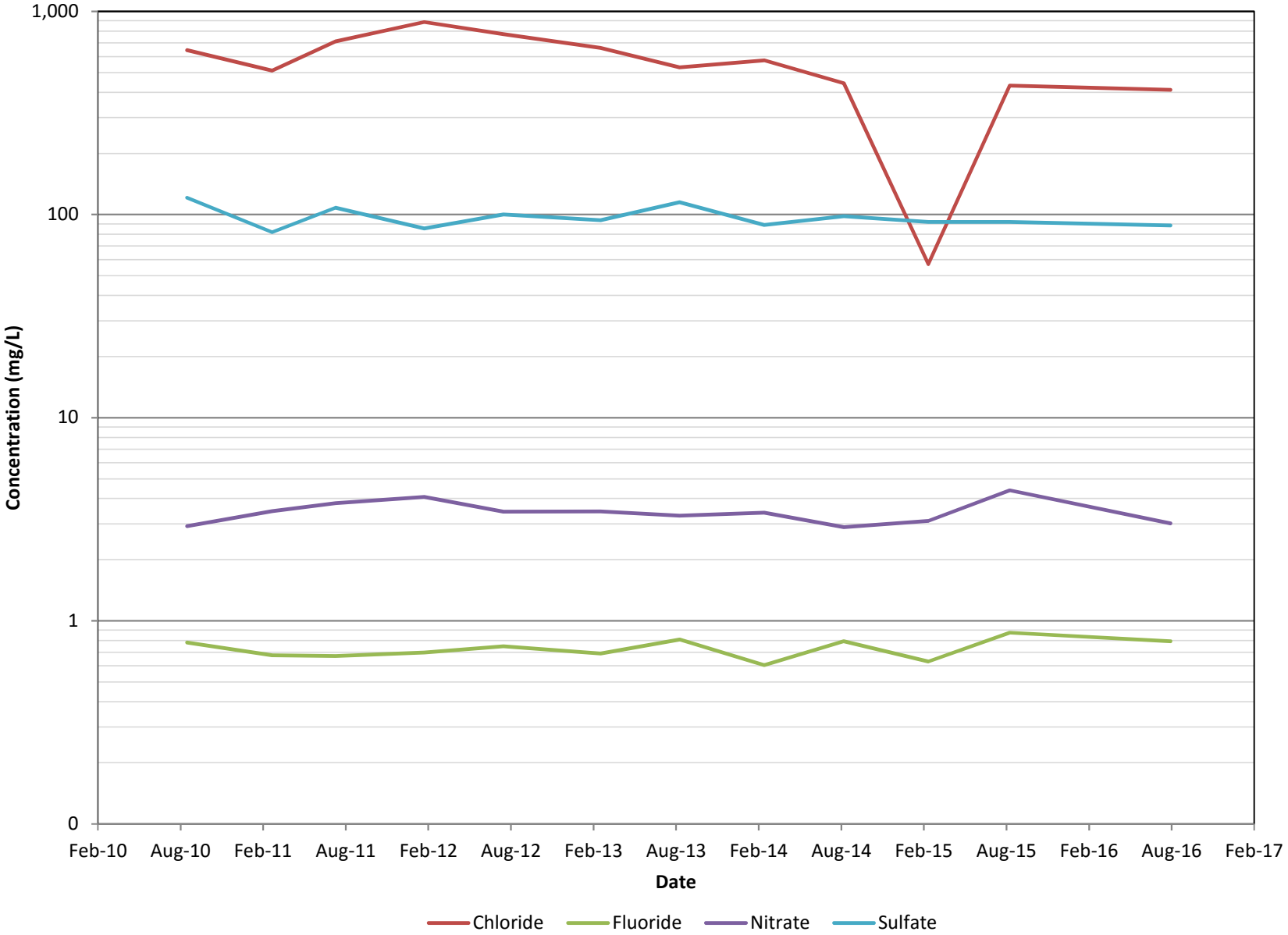
MW-22: TDS CONCENTRATIONS OVER TIME

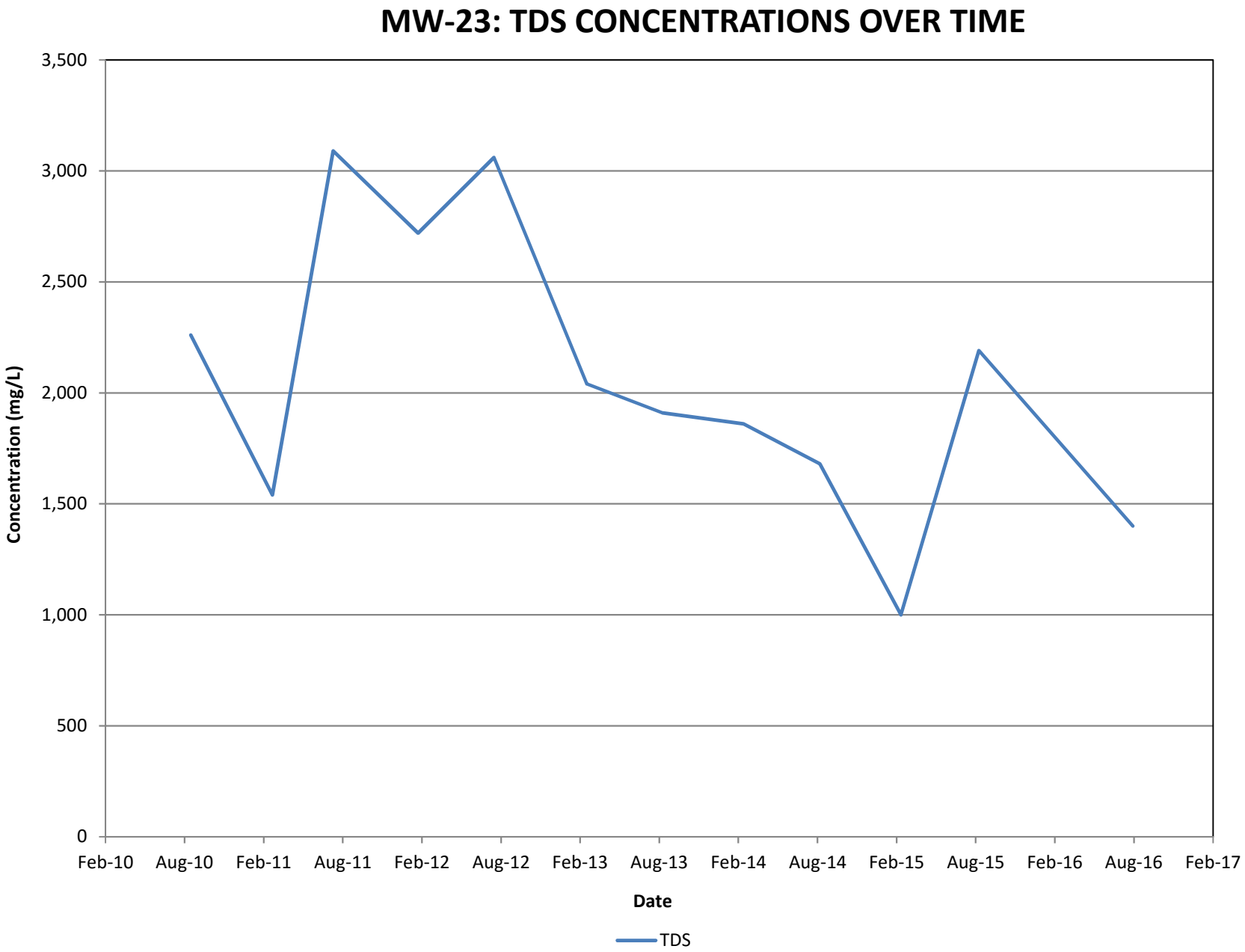


MW-22: METAL CONCENTRATIONS OVER TIME

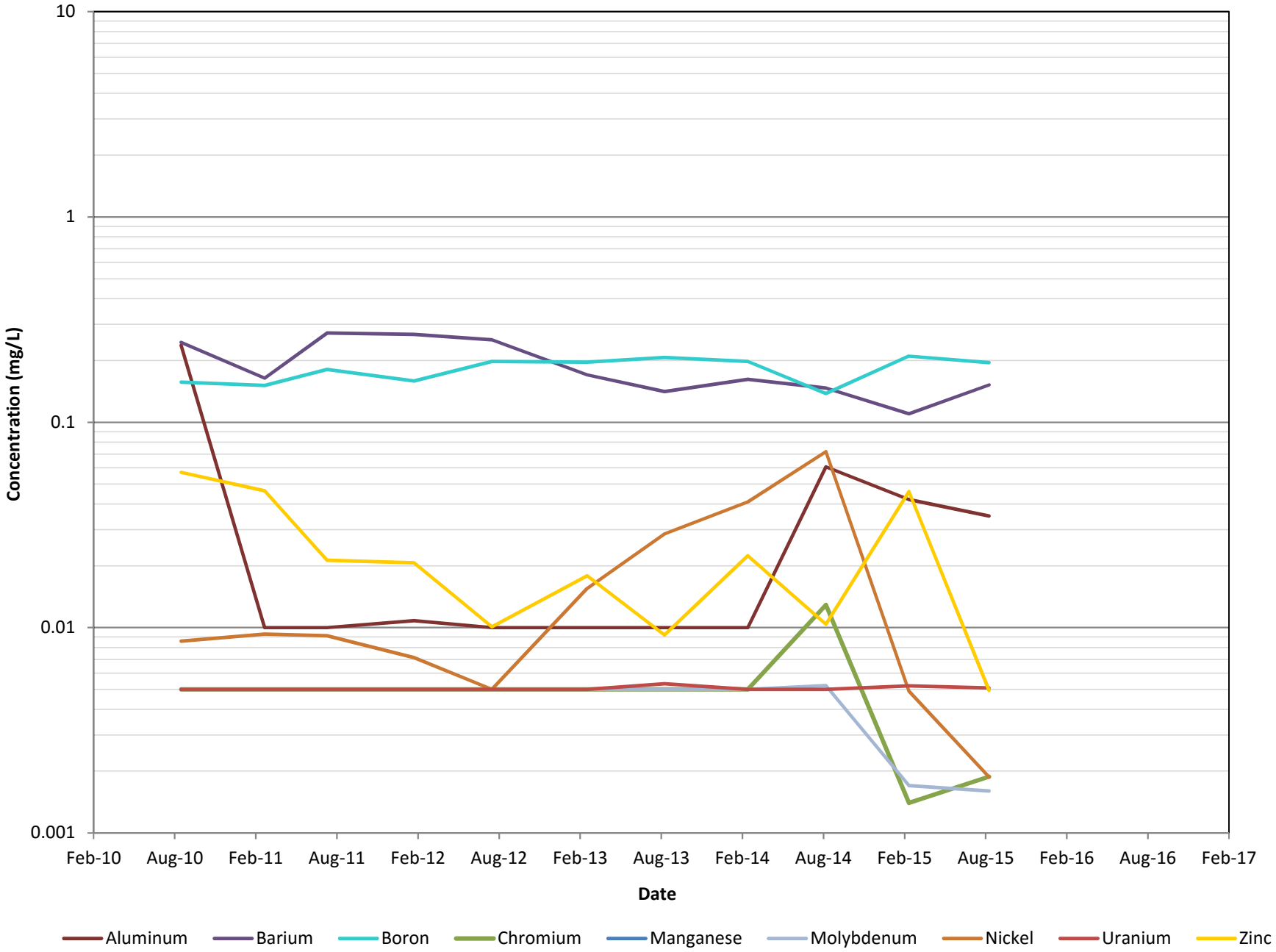


MW-23: ANION CONCENTRATIONS OVER TIME

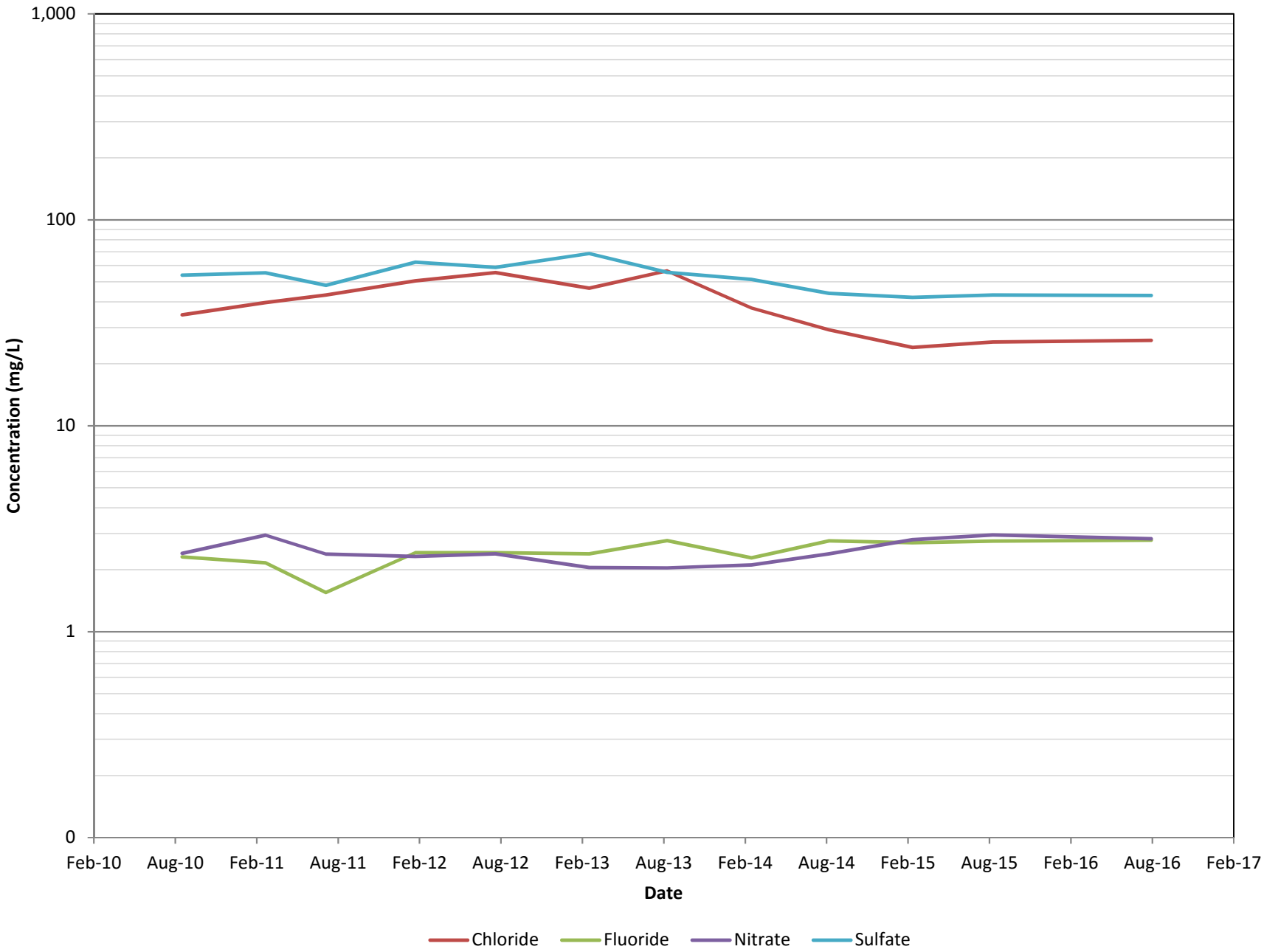



MW-23: TDS CONCENTRATIONS OVER TIME
3,500
3,000
2,500
2,000
1,500
1,000
500
0
Concentration (mg/L)
Feb-10
Aug-10
Feb-11
Aug-11
Feb-12
Aug-12
Feb-13
Aug-13
Feb-14
Aug-14
Feb-15
Aug-15
Feb-16
Aug-16
Feb-17
Date
TDS

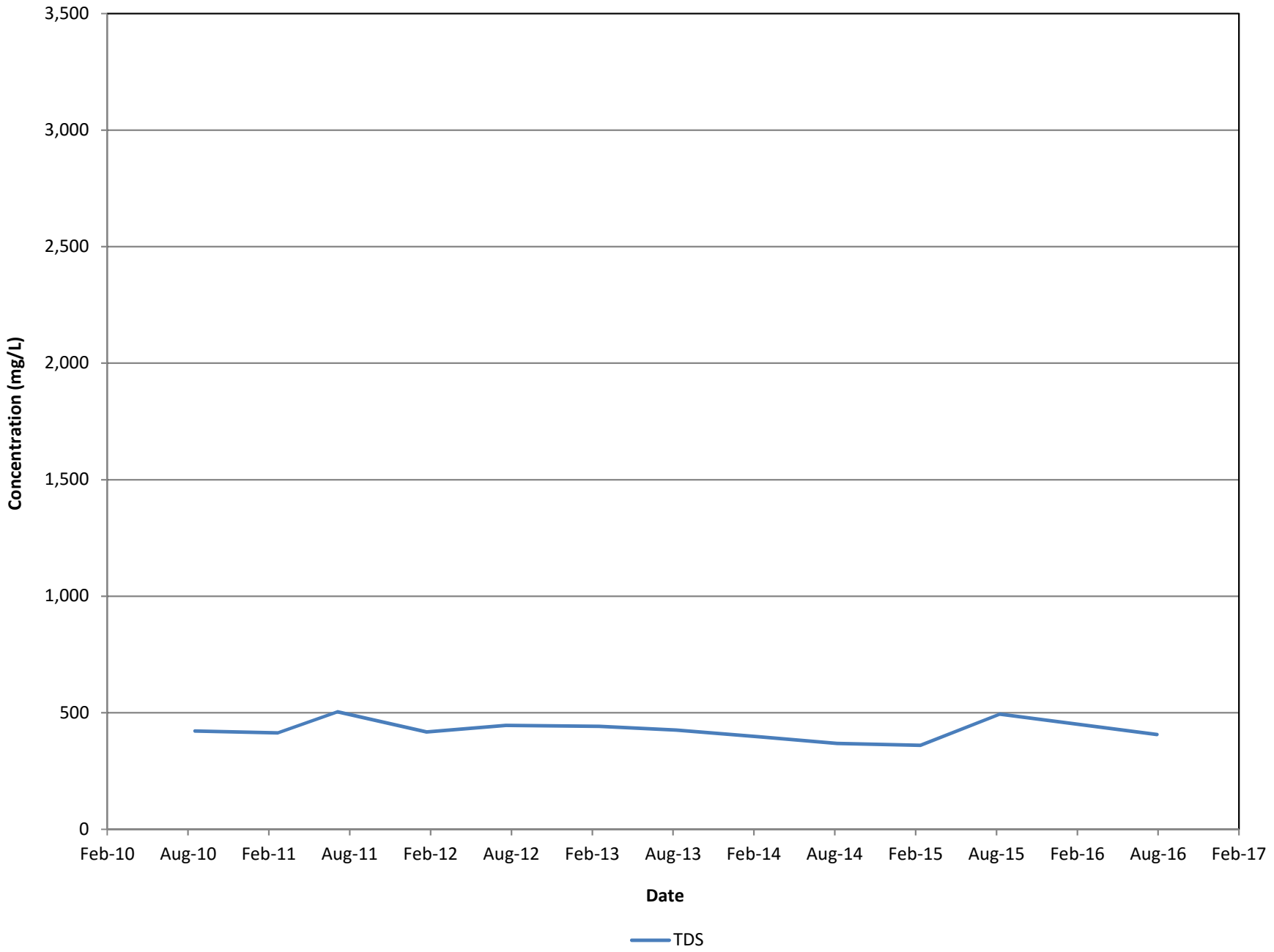
MW-23: METAL CONCENTRATIONS OVER TIME



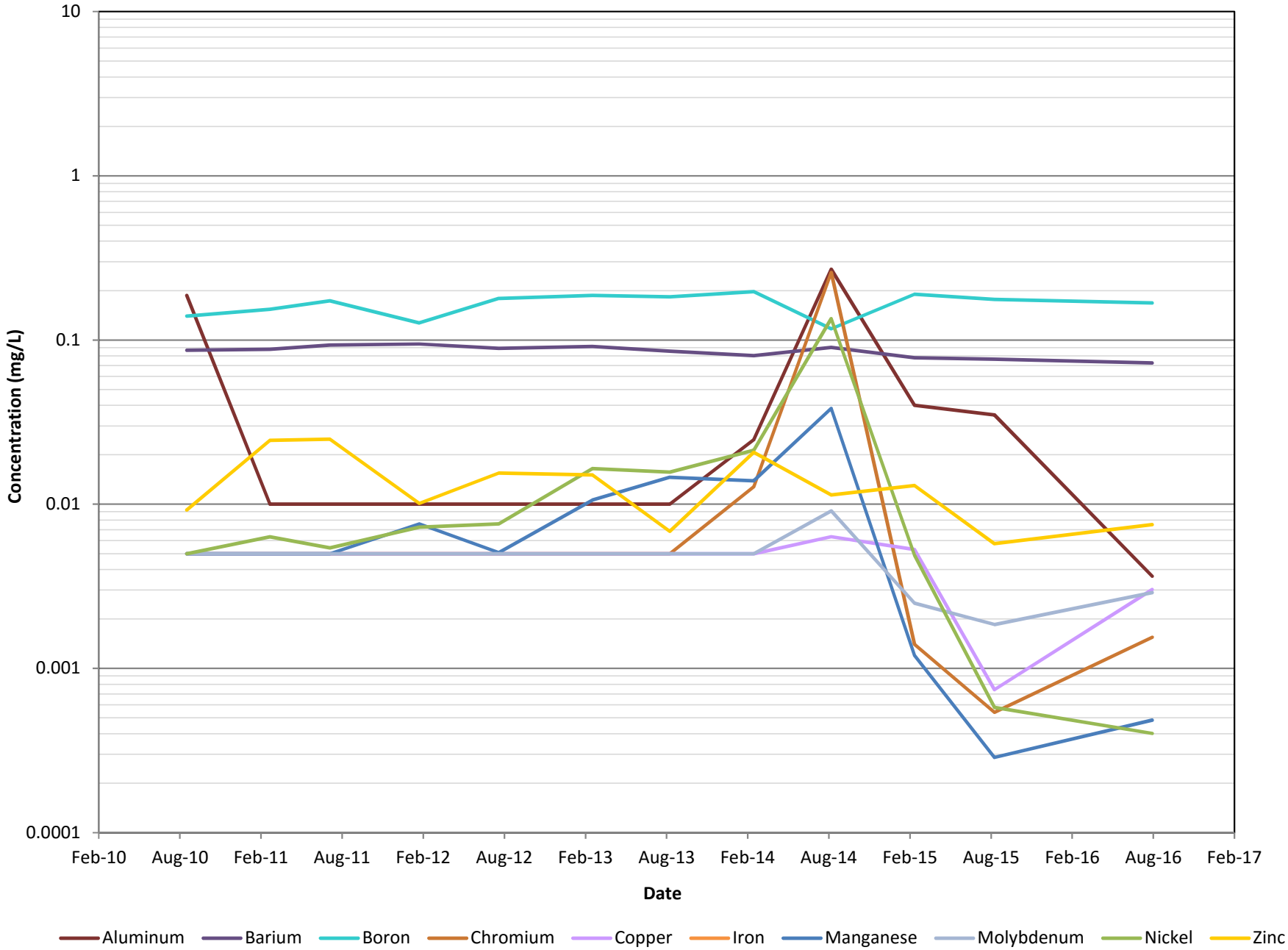
MW-24: ANION CONCENTRATIONS OVER TIME



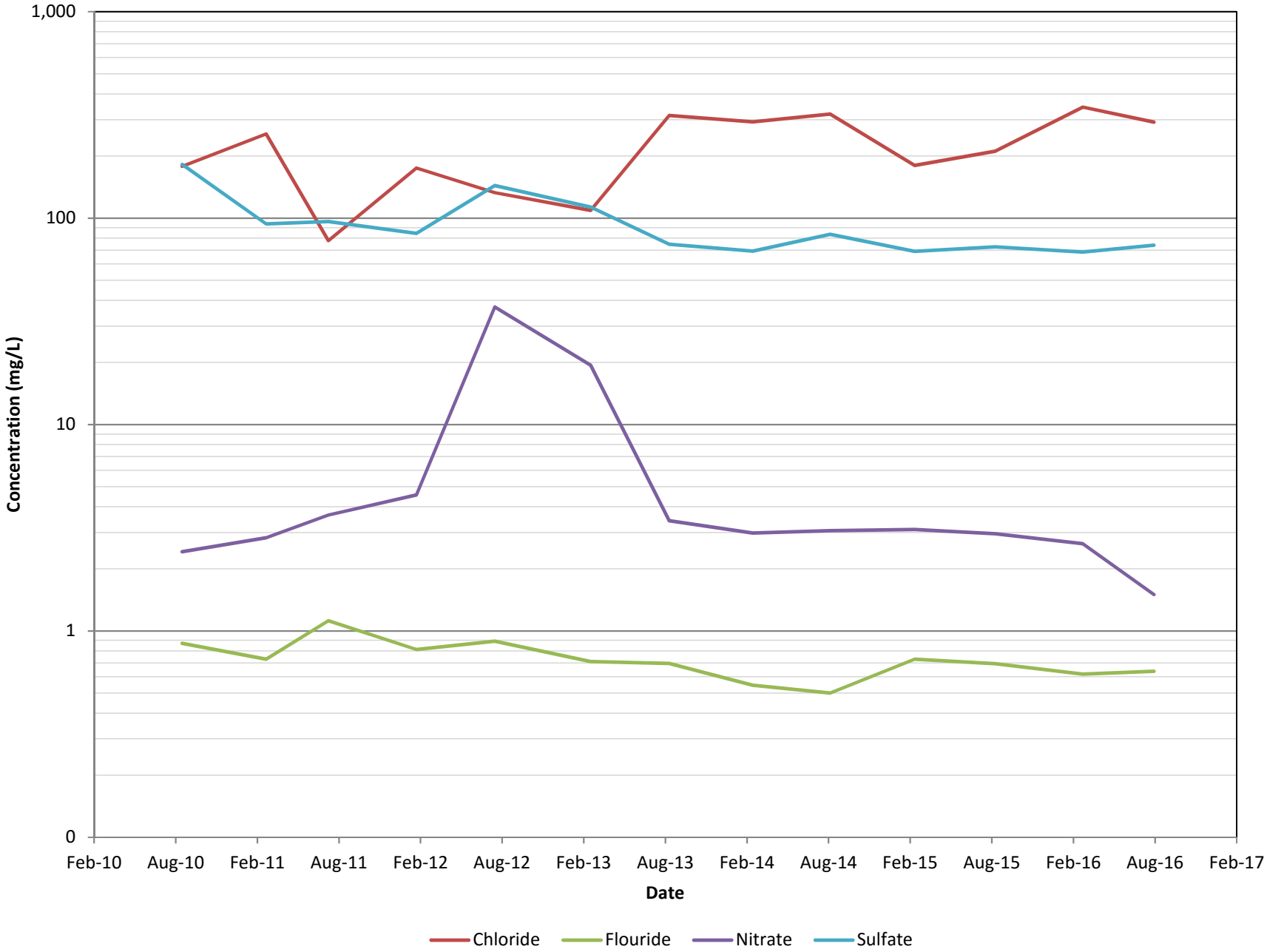
MW-24: TDS CONCENTRATIONS OVER TIME



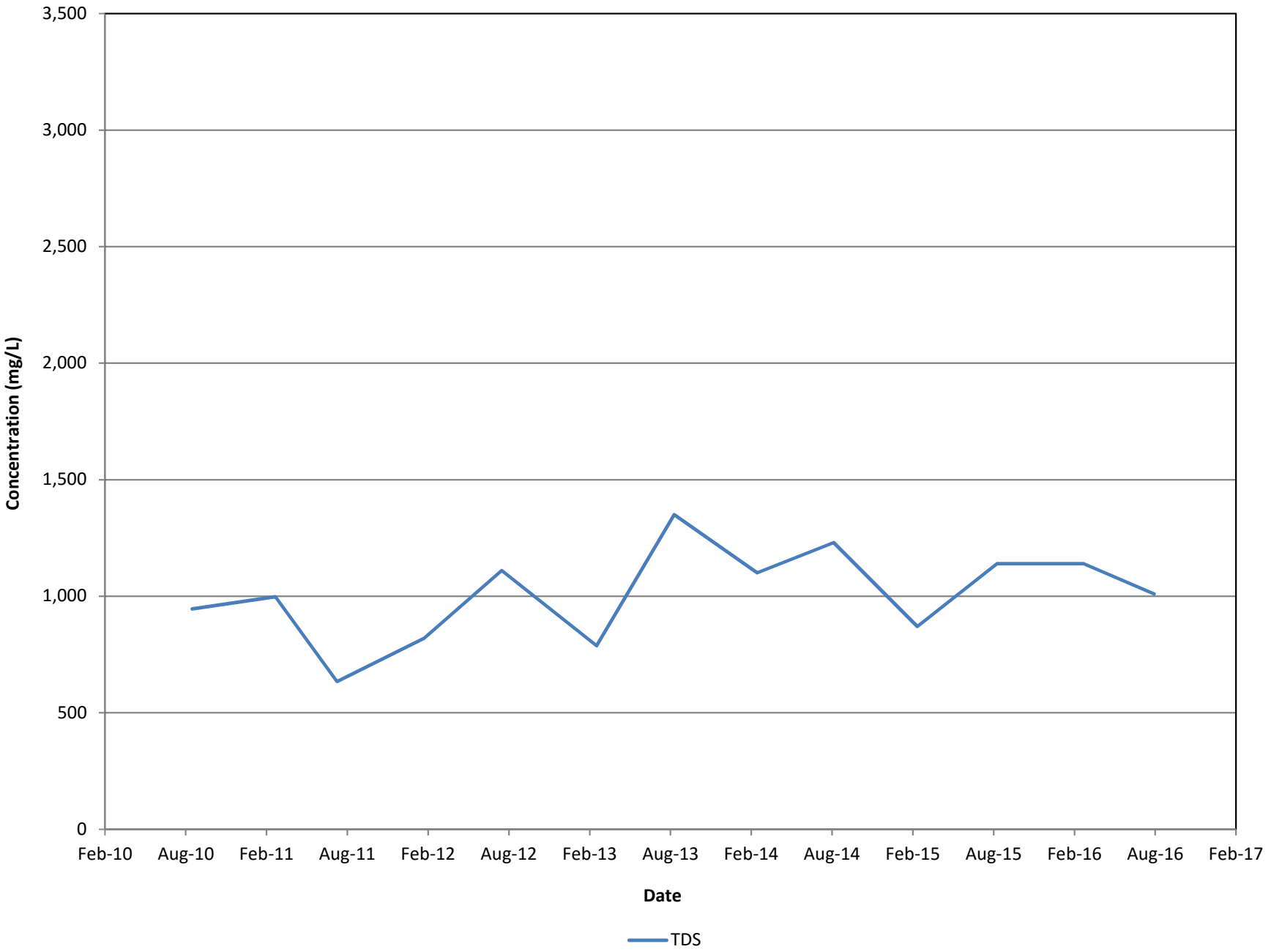
MW-24: METAL CONCENTRATIONS OVER TIME



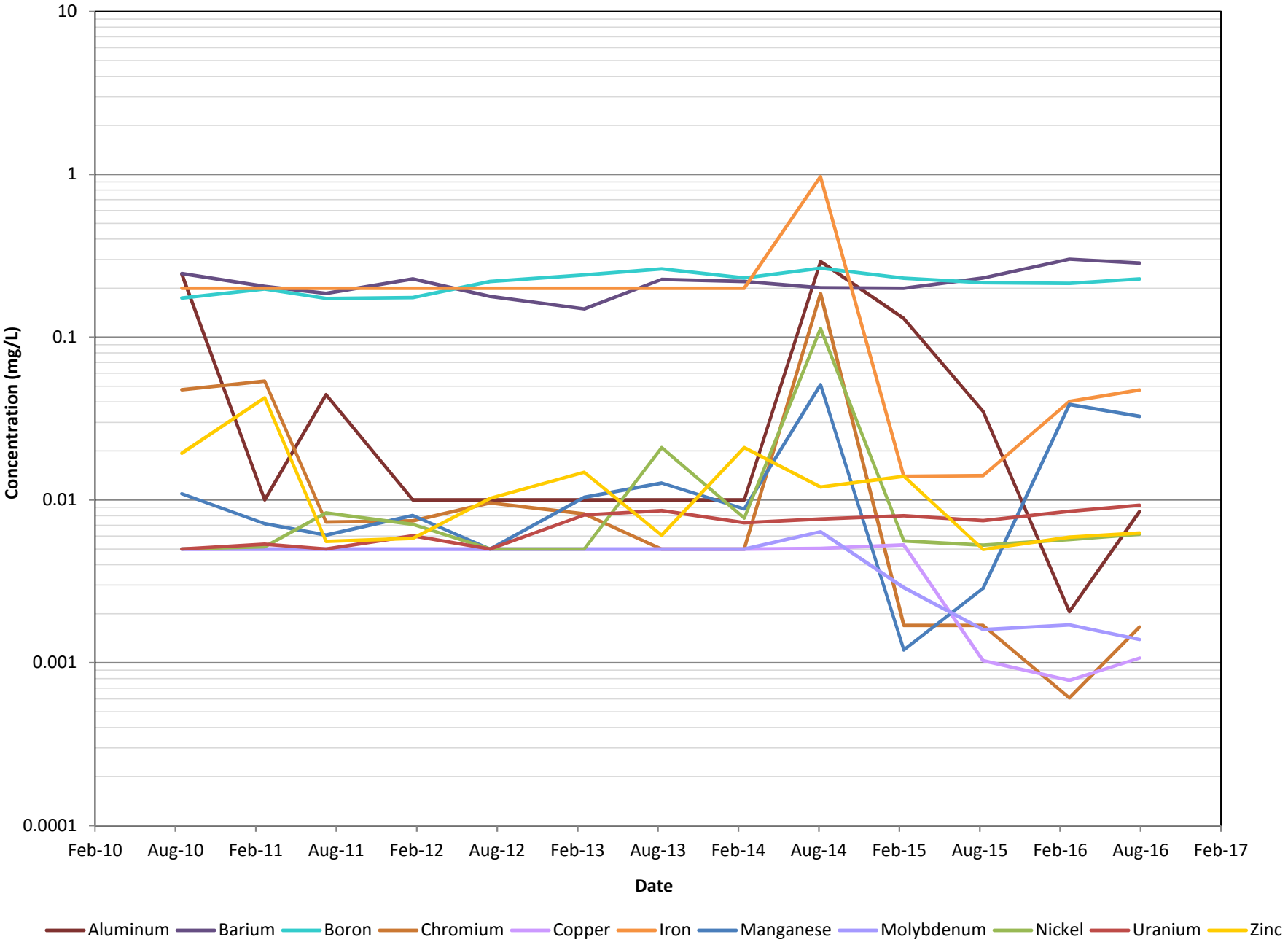
MW-25: ANION CONCENTRATIONS OVER TIME



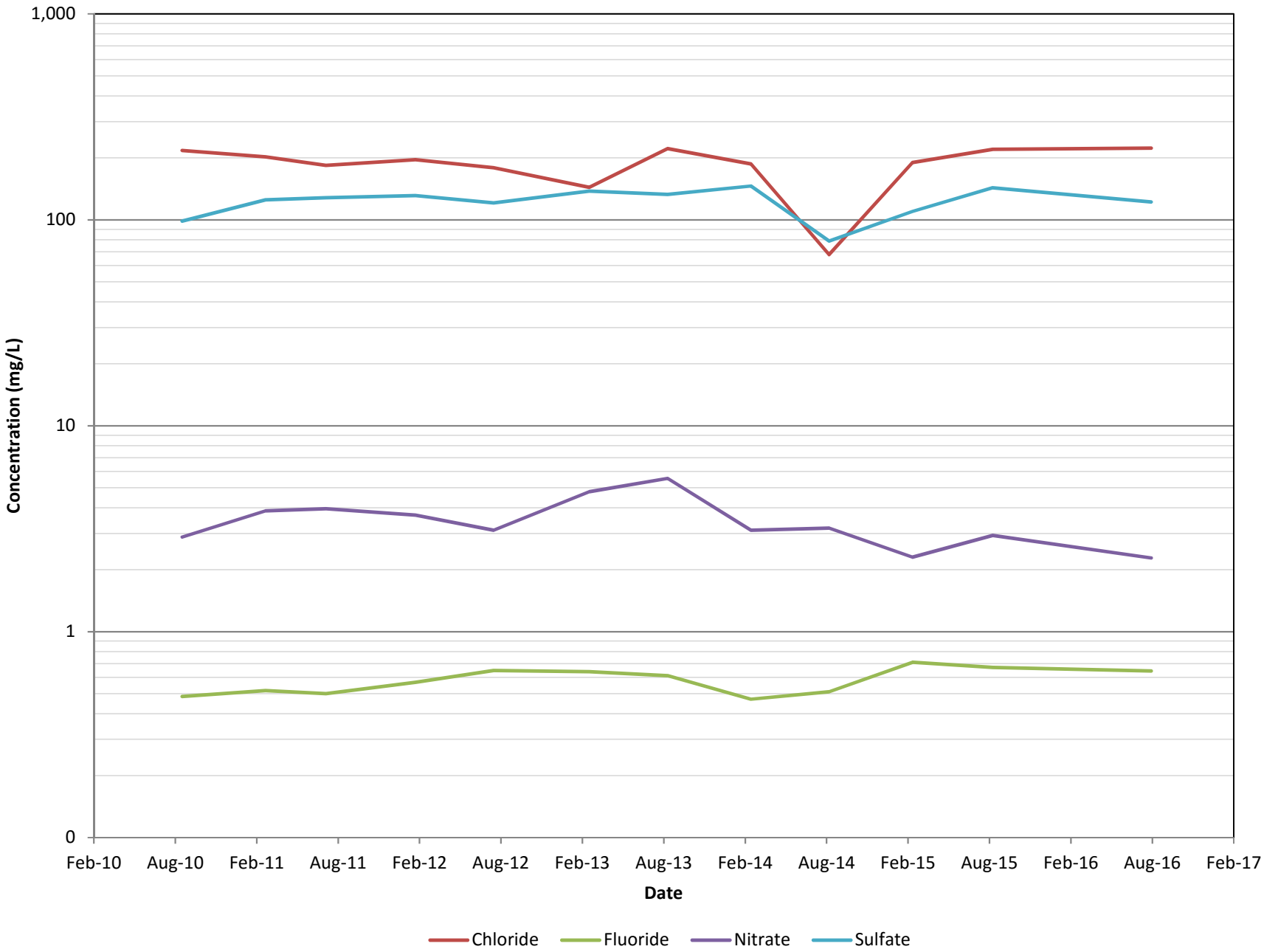
MW-25: TDS CONCENTRATIONS OVER TIME



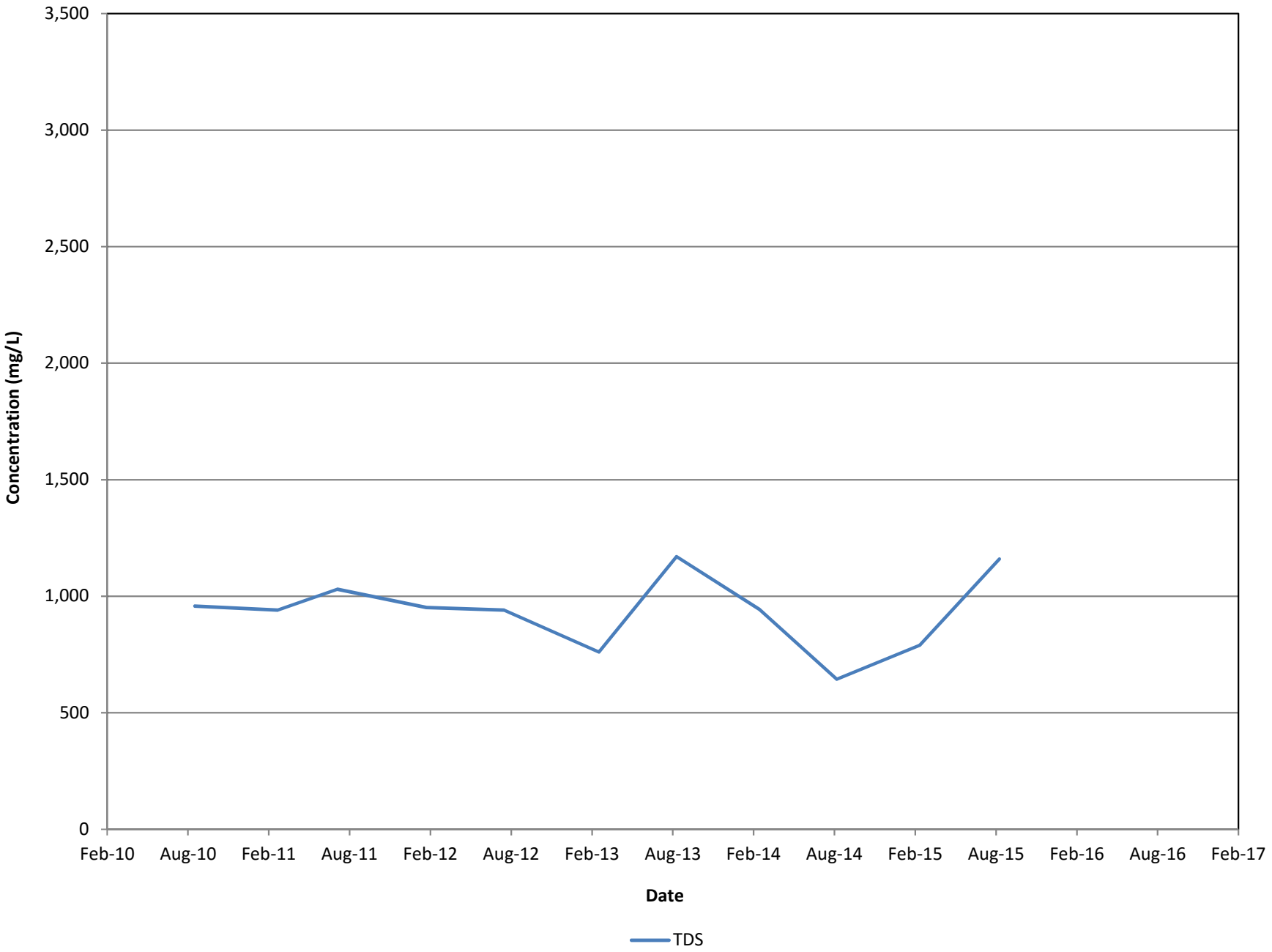
MW-25: METAL CONCENTRATIONS OVER TIME



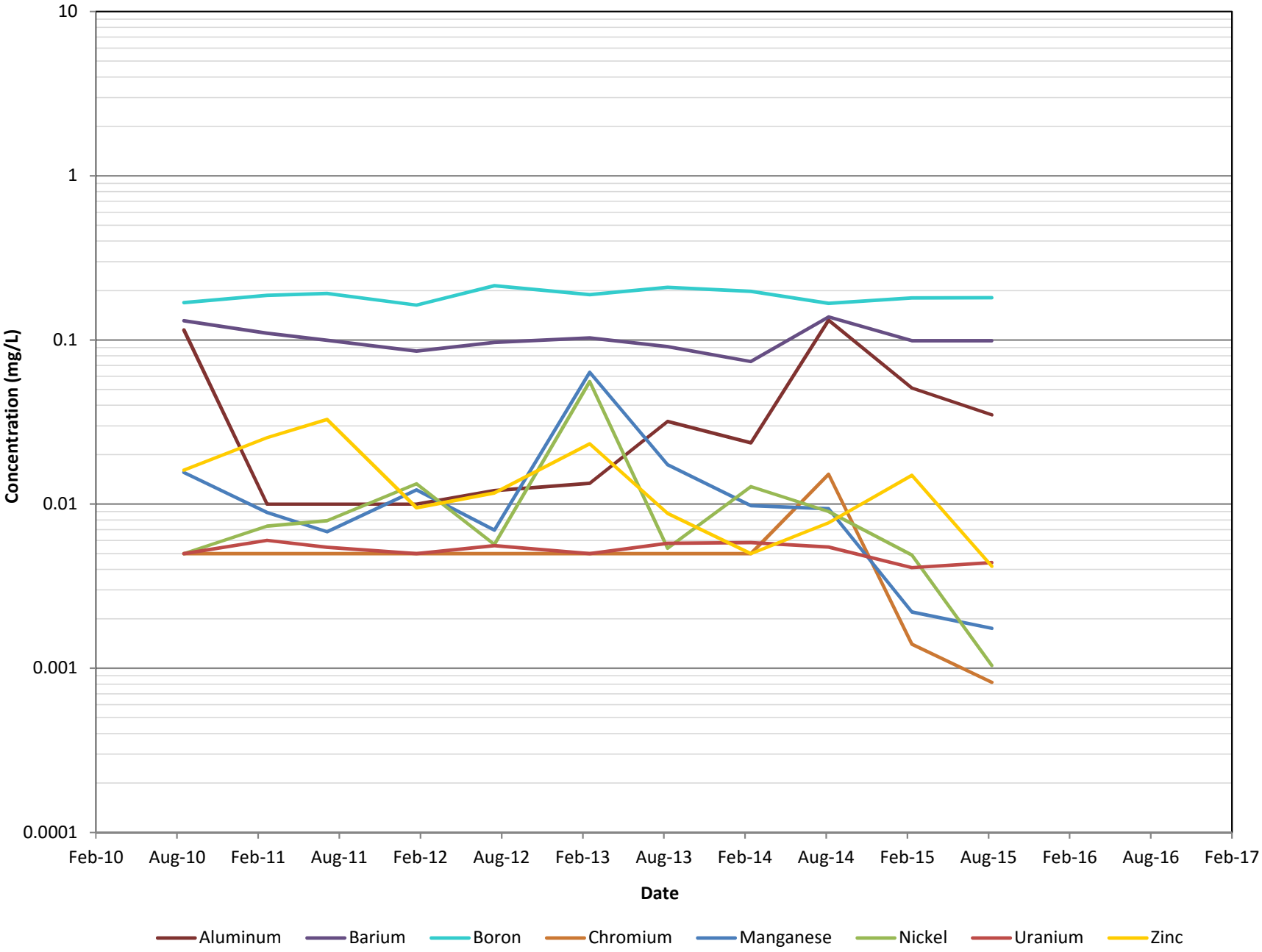
MW-26: ANION CONCENTRATIONS OVER TIME



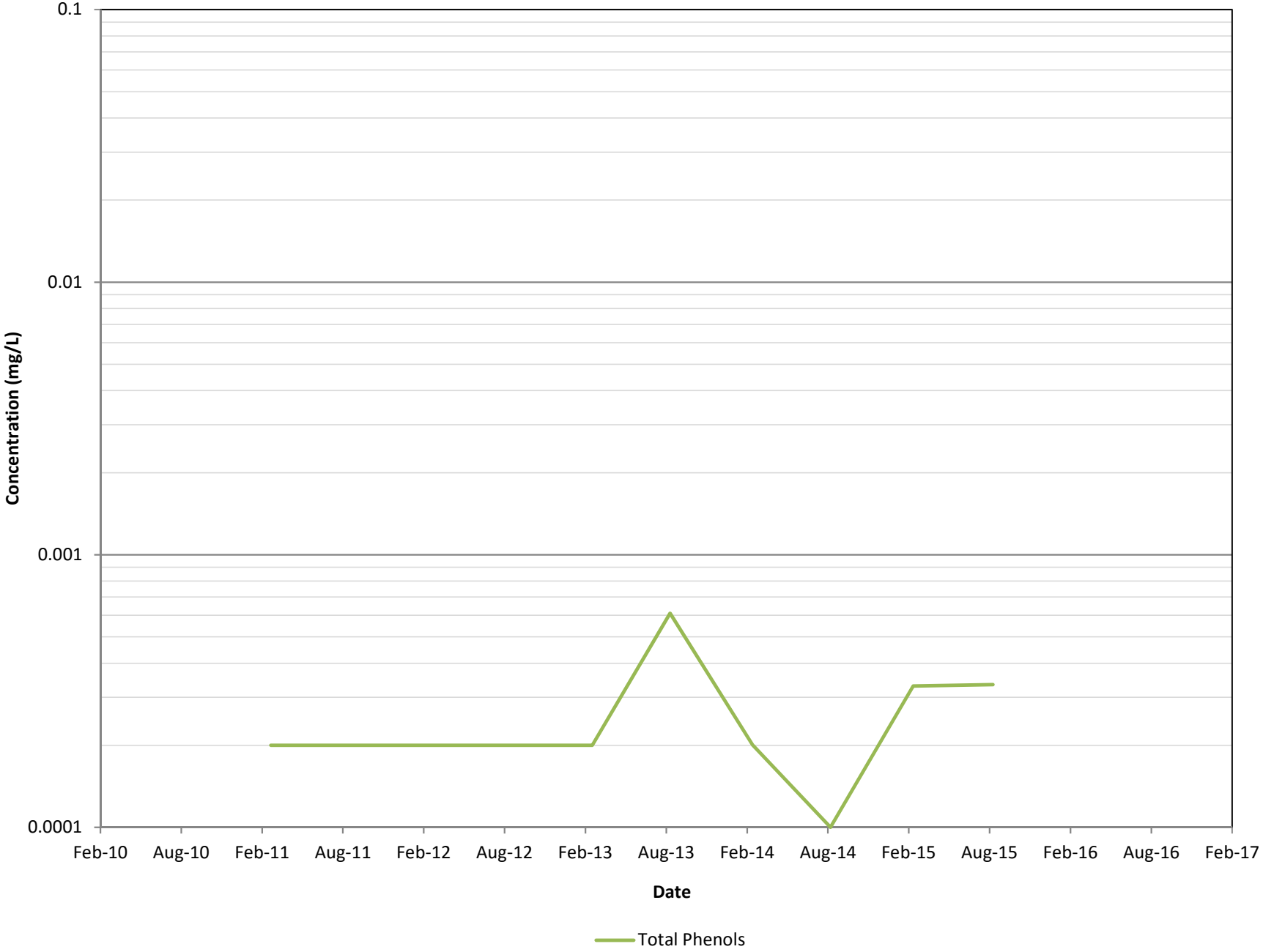
MW-26: TDS CONCENTRATIONS OVER TIME



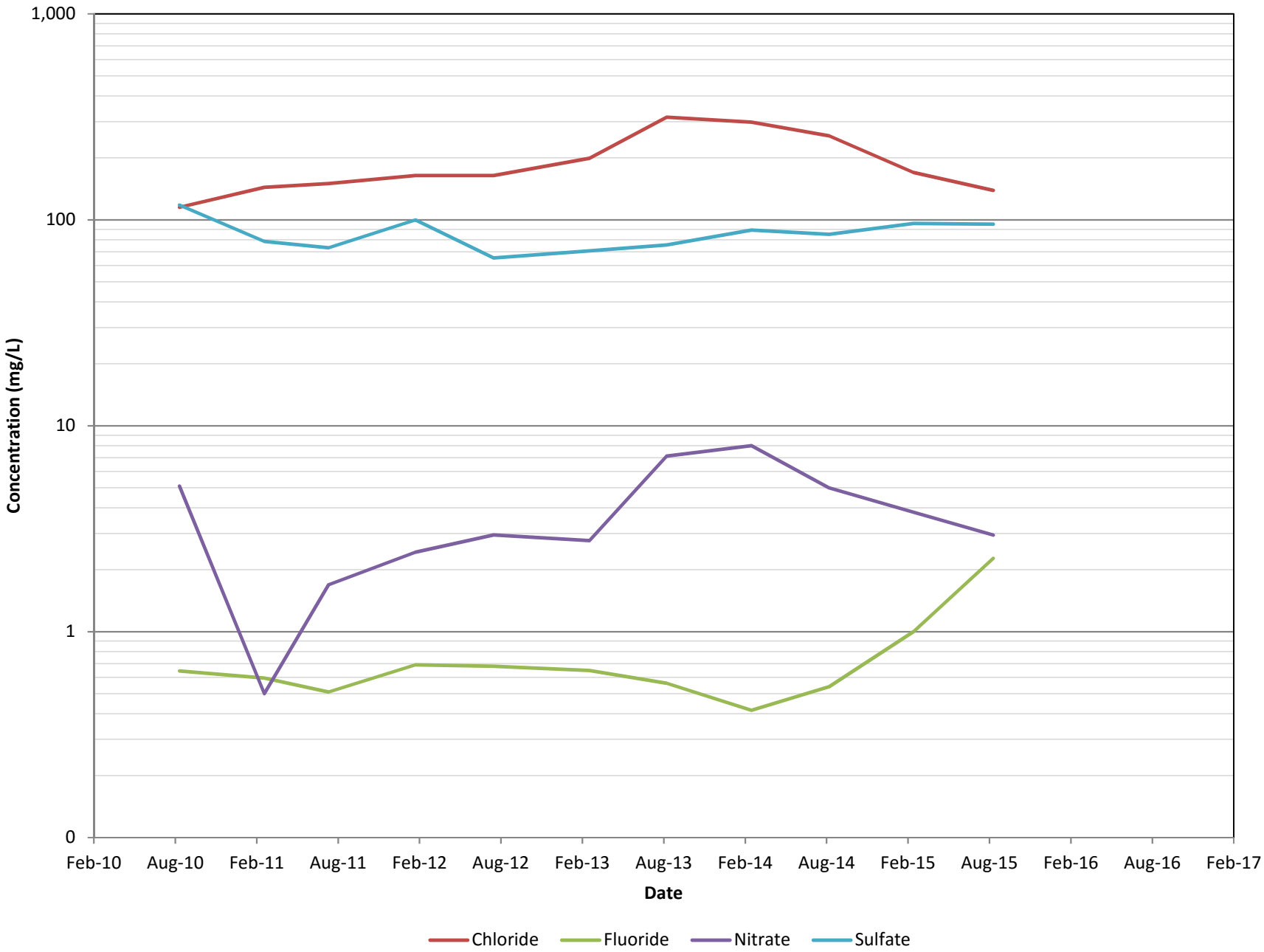
MW-26: METAL CONCENTRATIONS OVER TIME



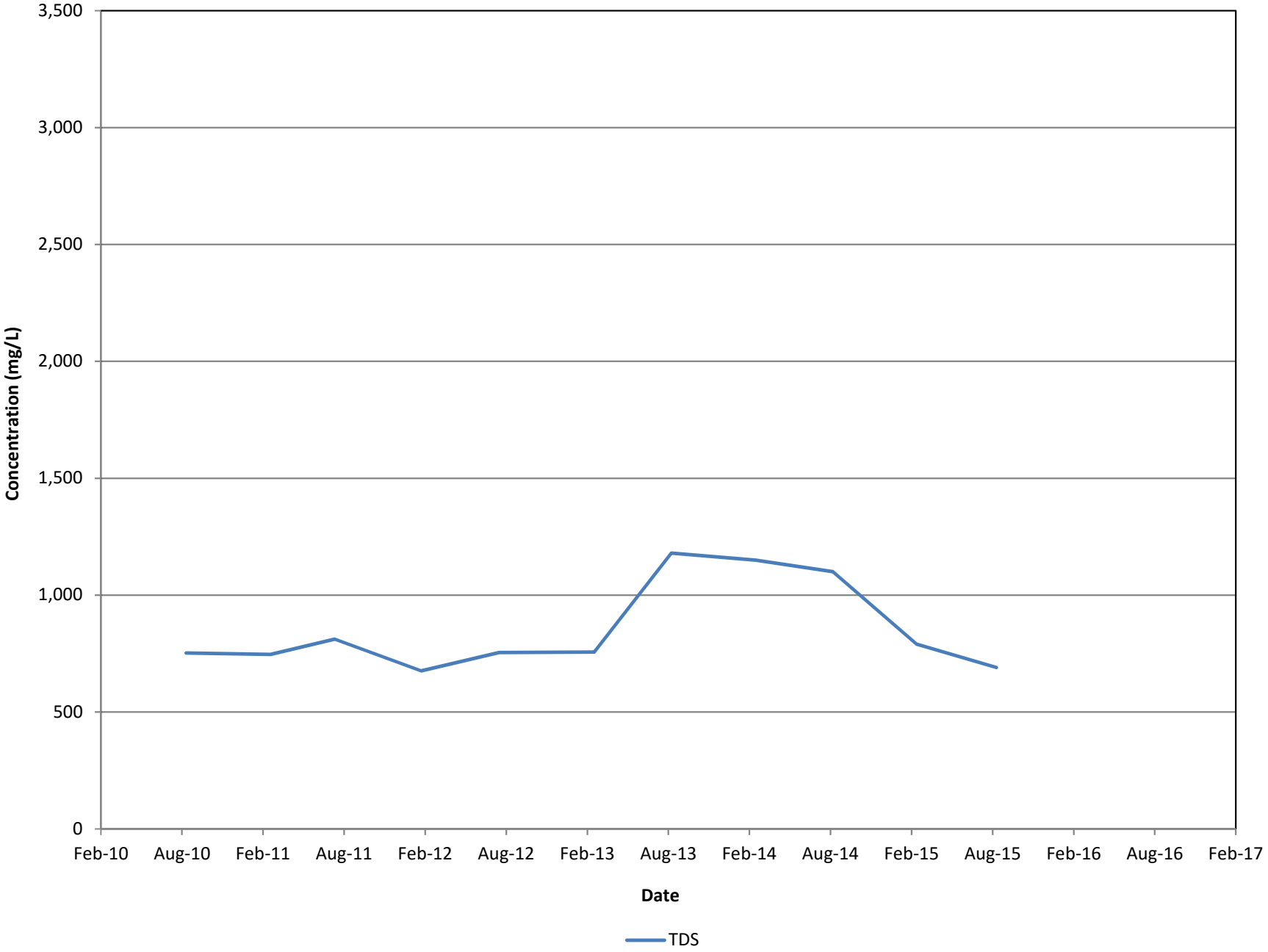
MW-26: SVOC CONCENTRATIONS OVER TIME



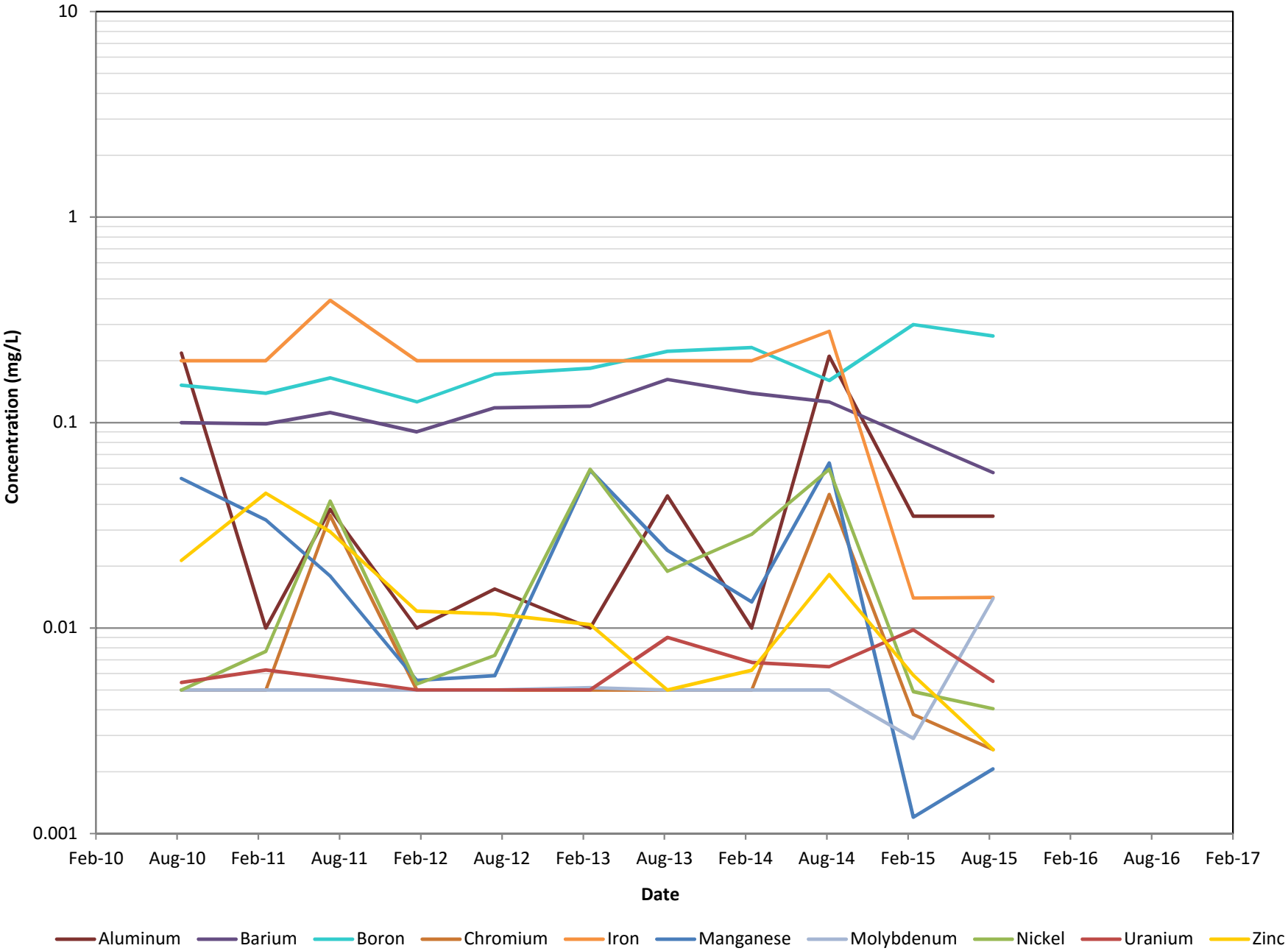
MW-27: ANION CONCENTRATIONS OVER TIME



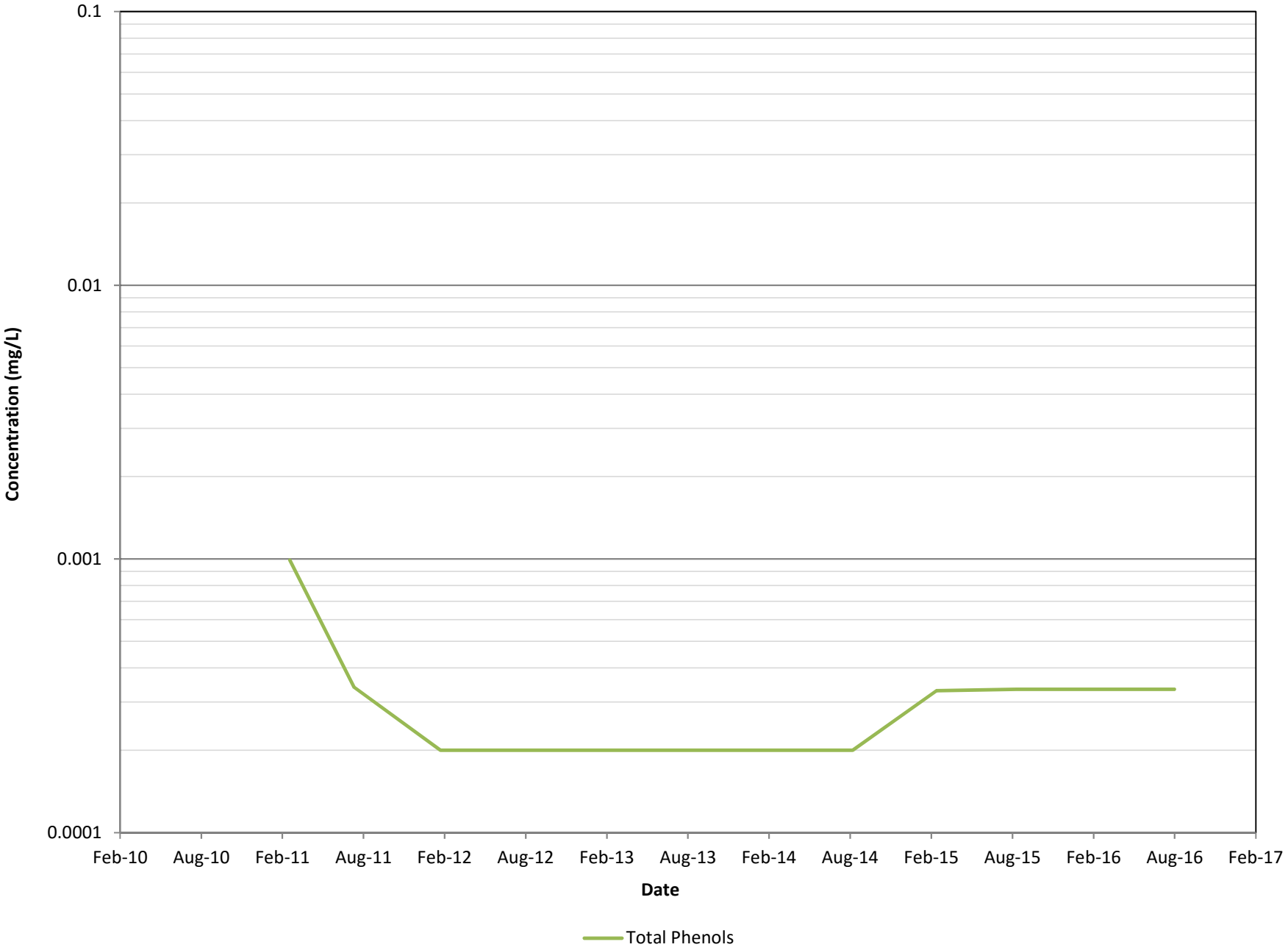
MW-27: TDS CONCENTRATIONS OVER TIME



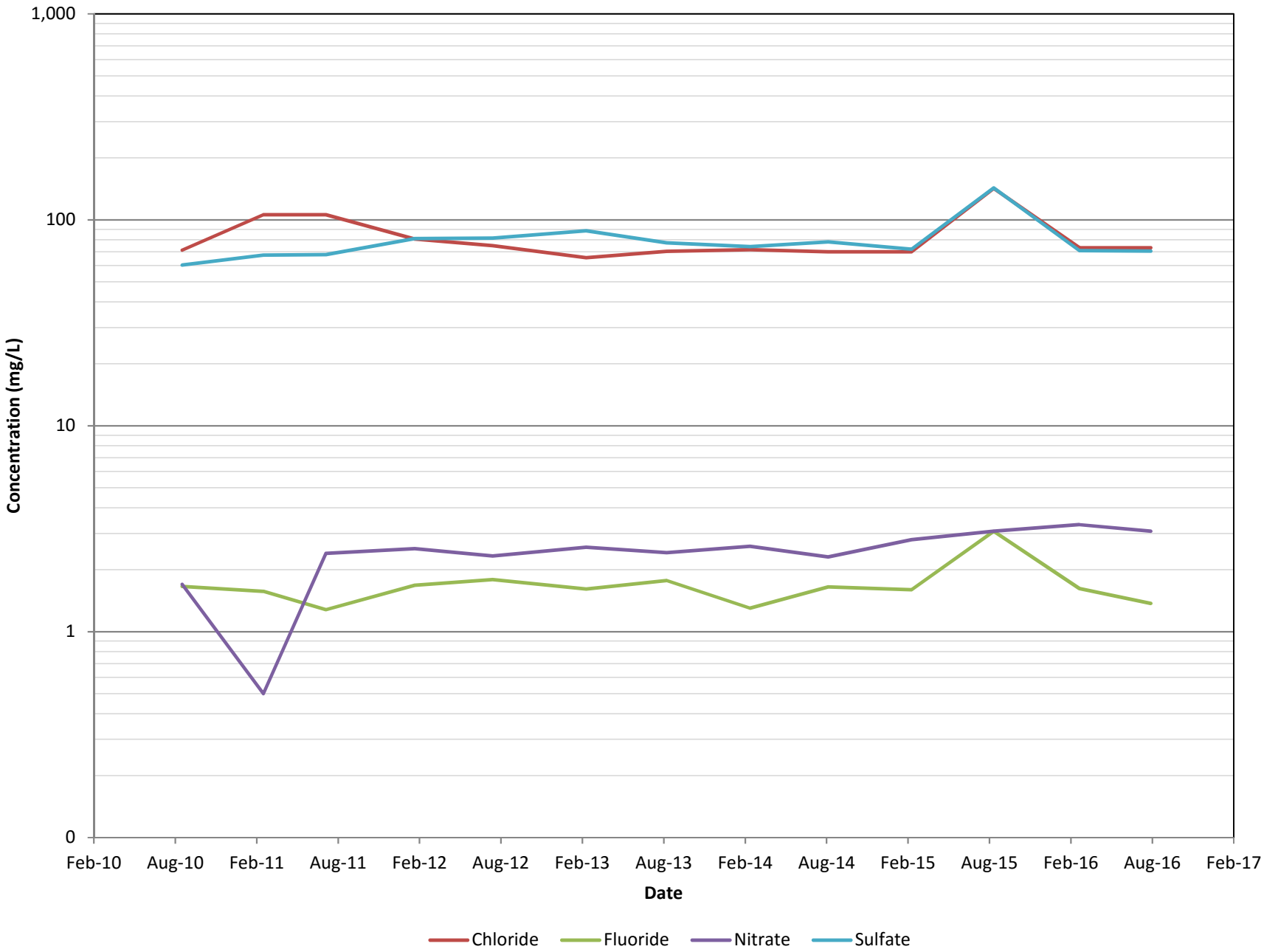
MW-27: METAL CONCENTRATIONS OVER TIME



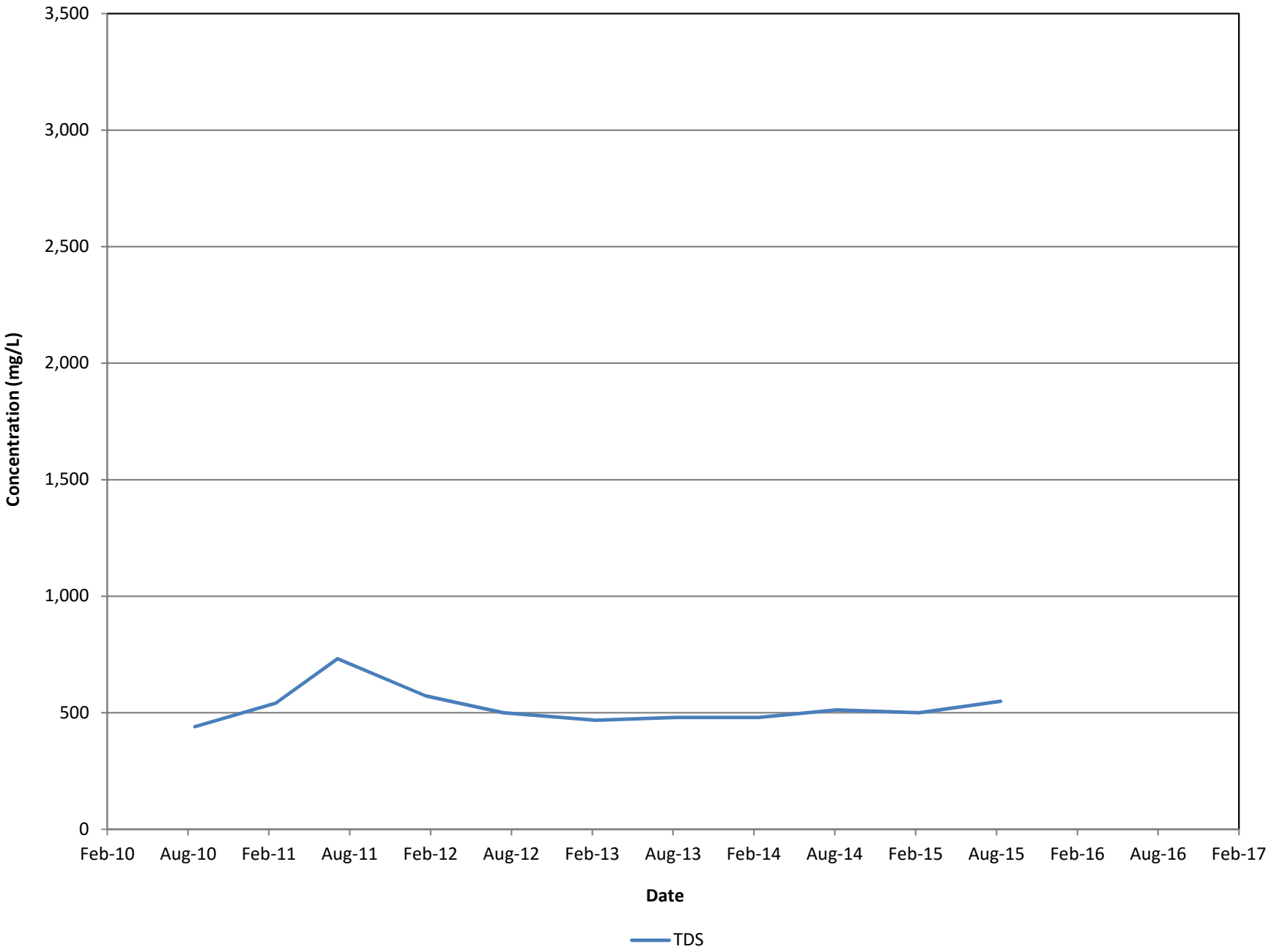
MW-27: SVOC CONCENTRATIONS OVER TIME



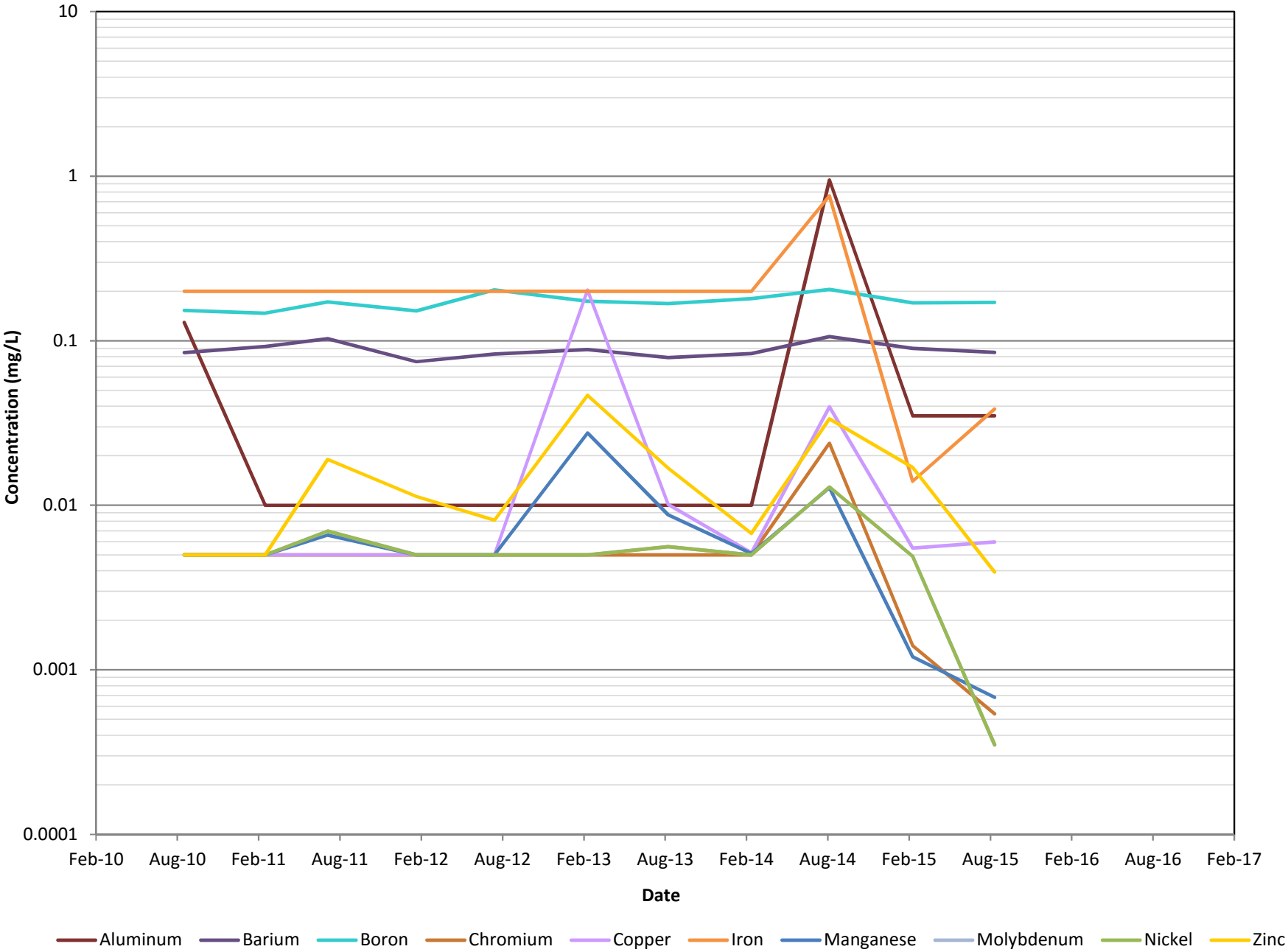
MW-28: ANION CONCENTRATIONS OVER TIME



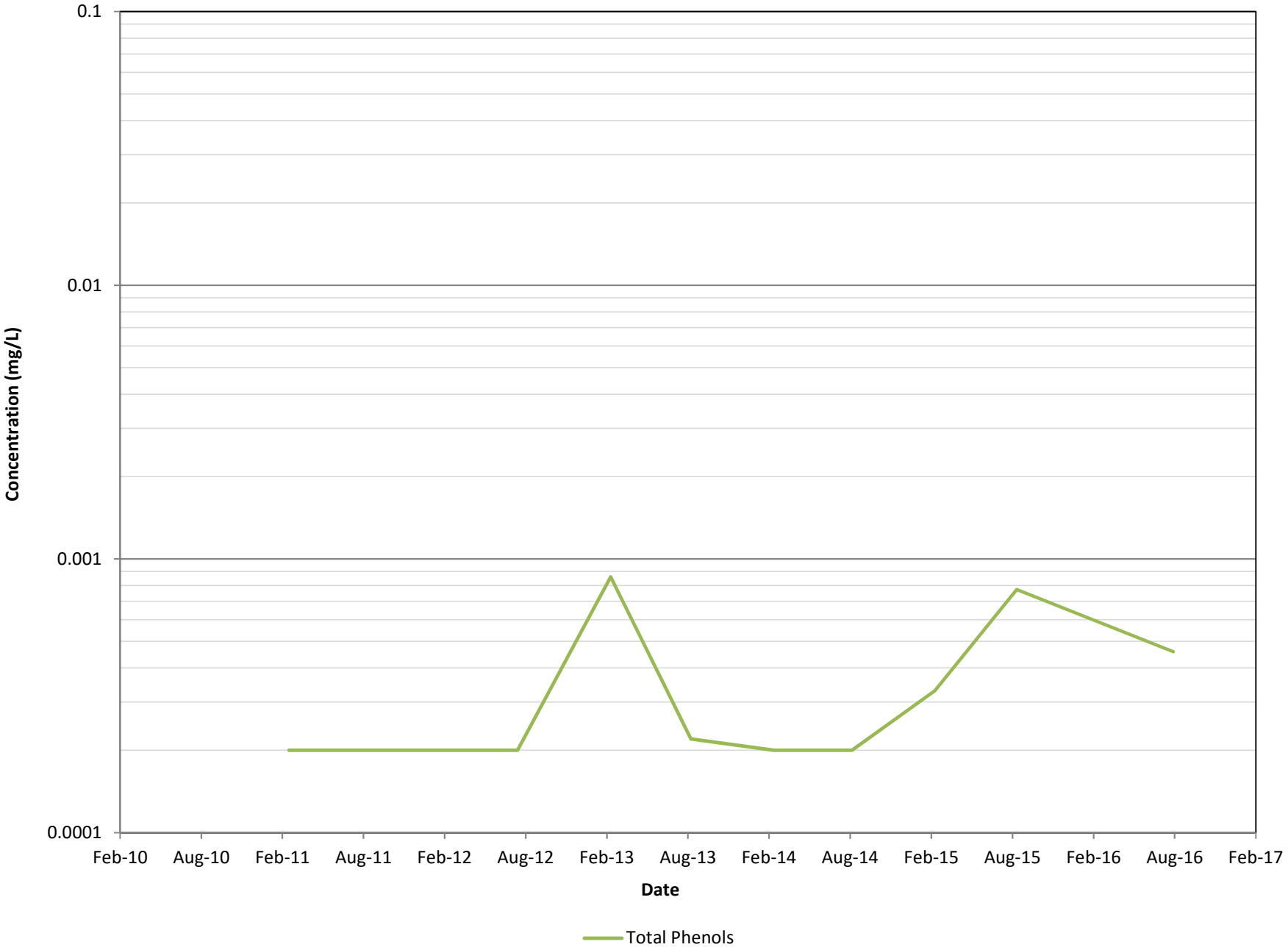
MW-28: TDS CONCENTRATIONS OVER TIME



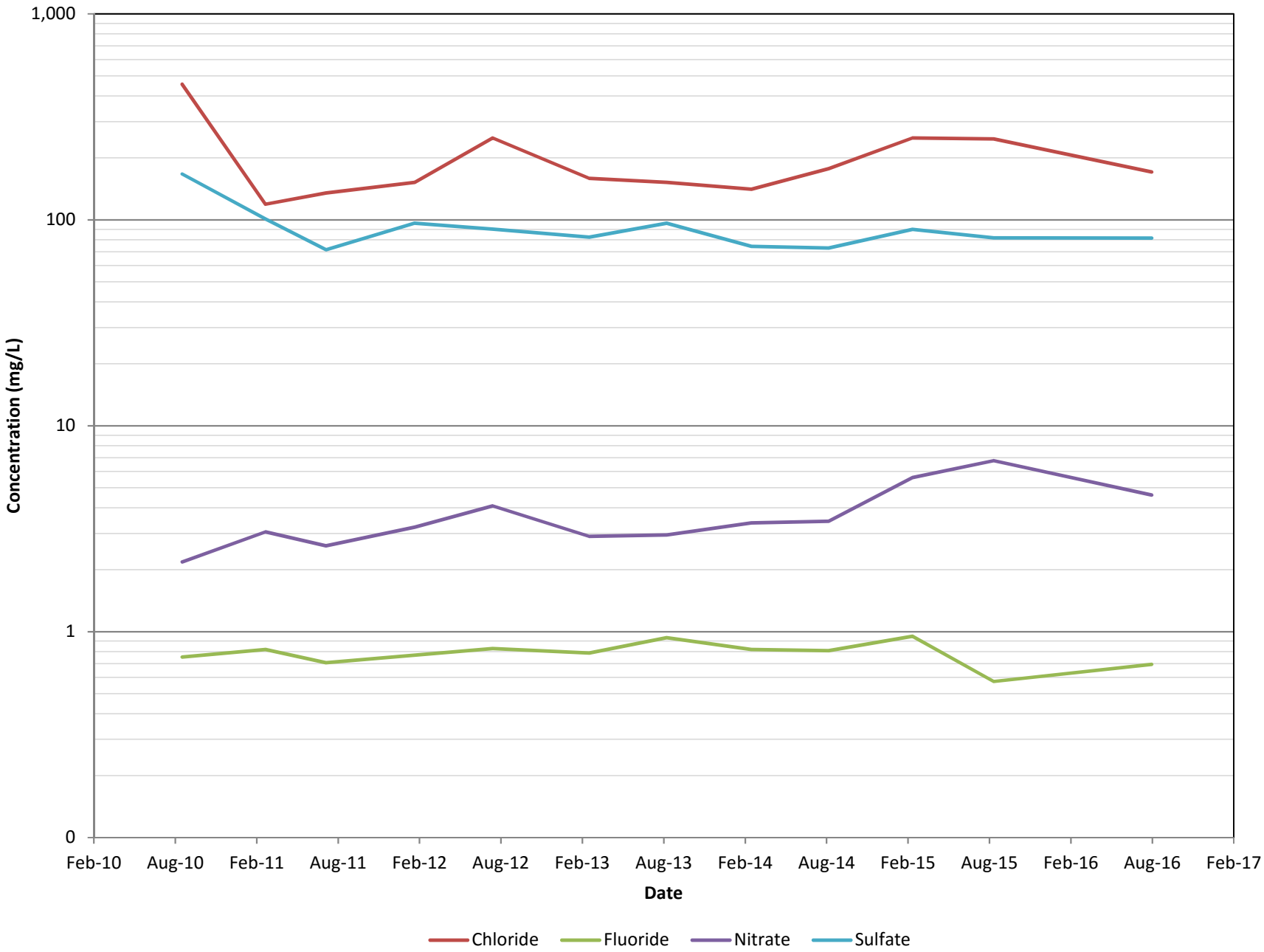
MW-28: METAL CONCENTRATIONS OVER TIME



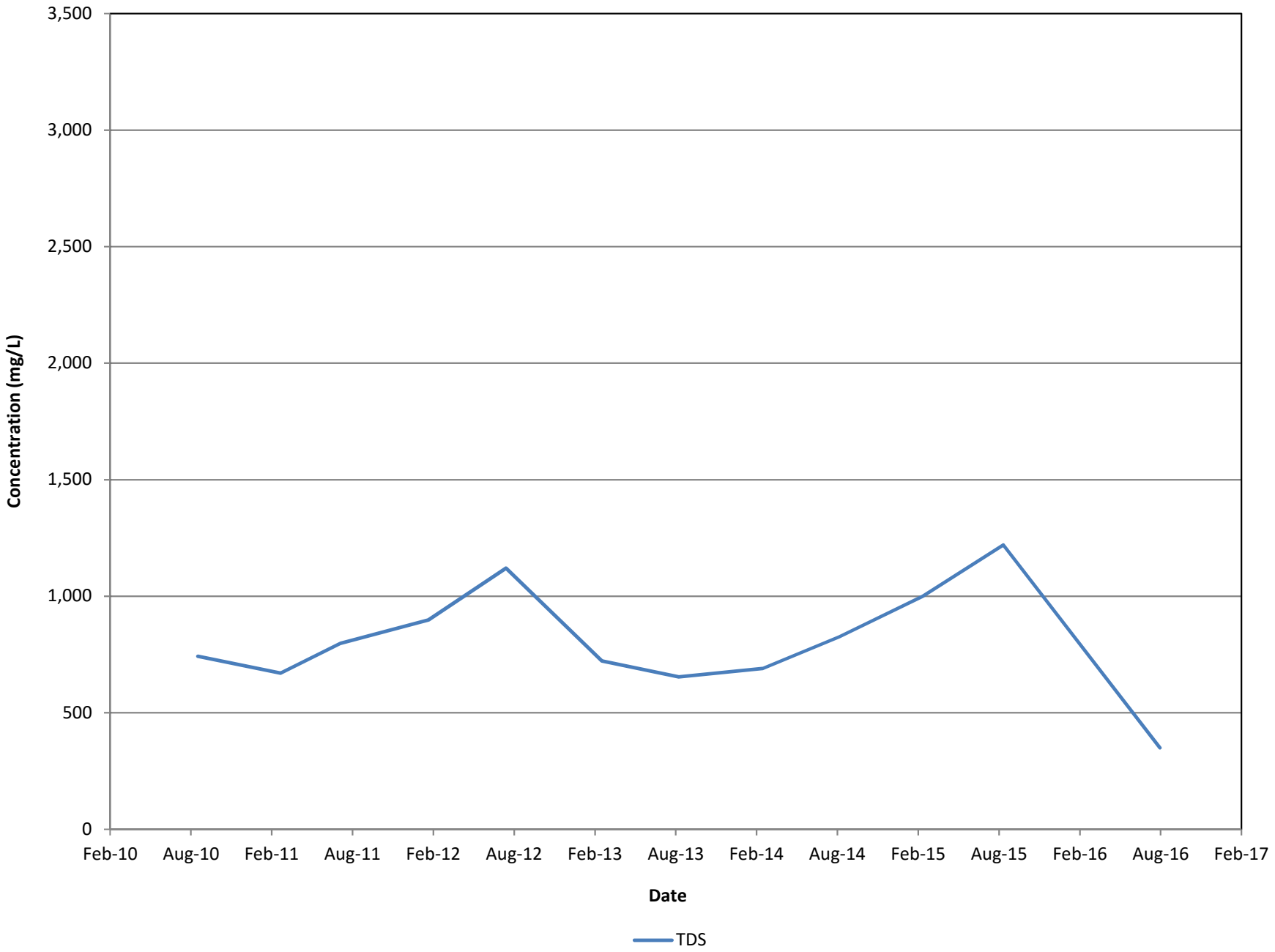
MW-28: SVOC CONCENTRATIONS OVER TIME



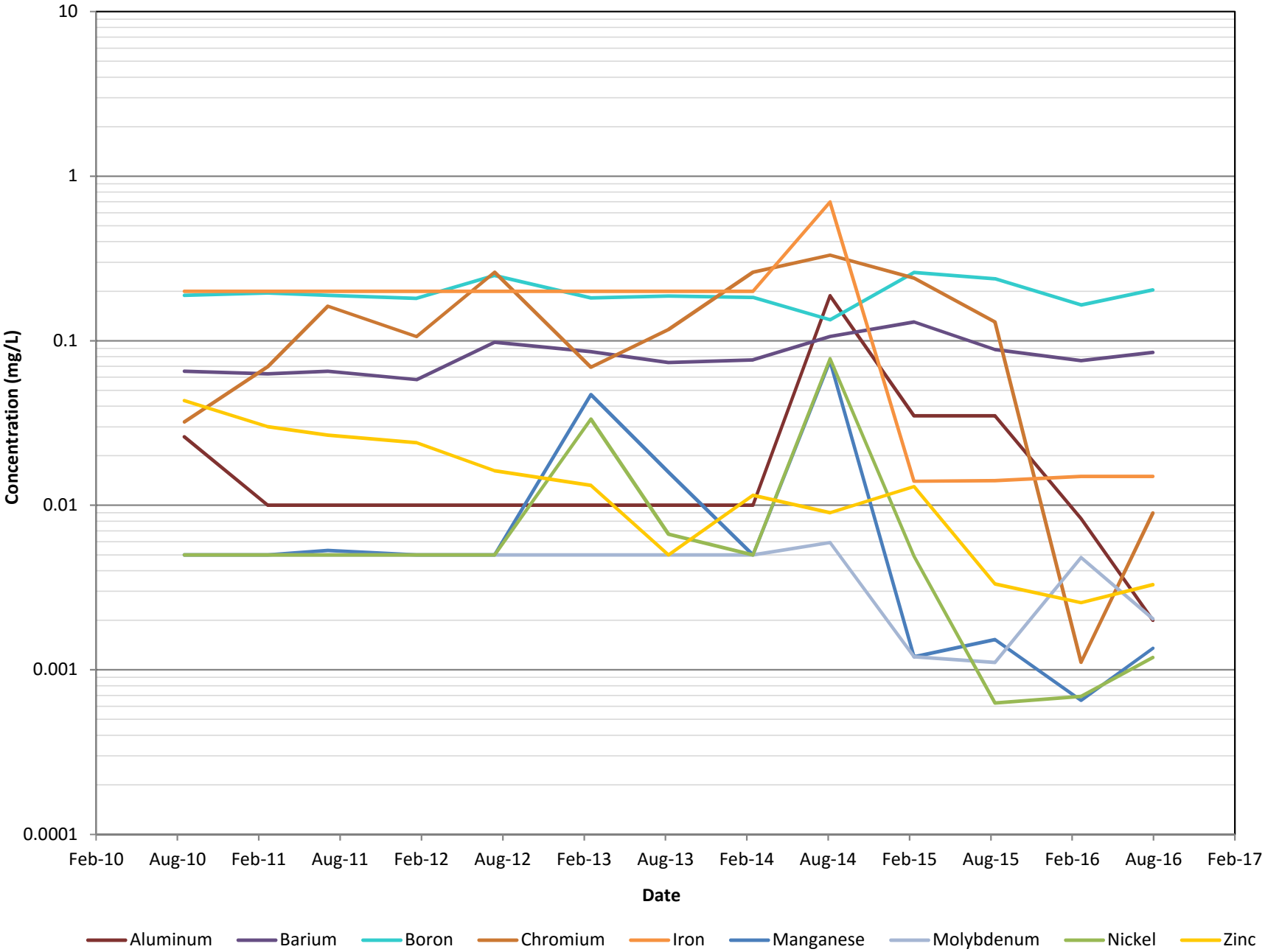
MW-29: ANION CONCENTRATIONS OVER TIME



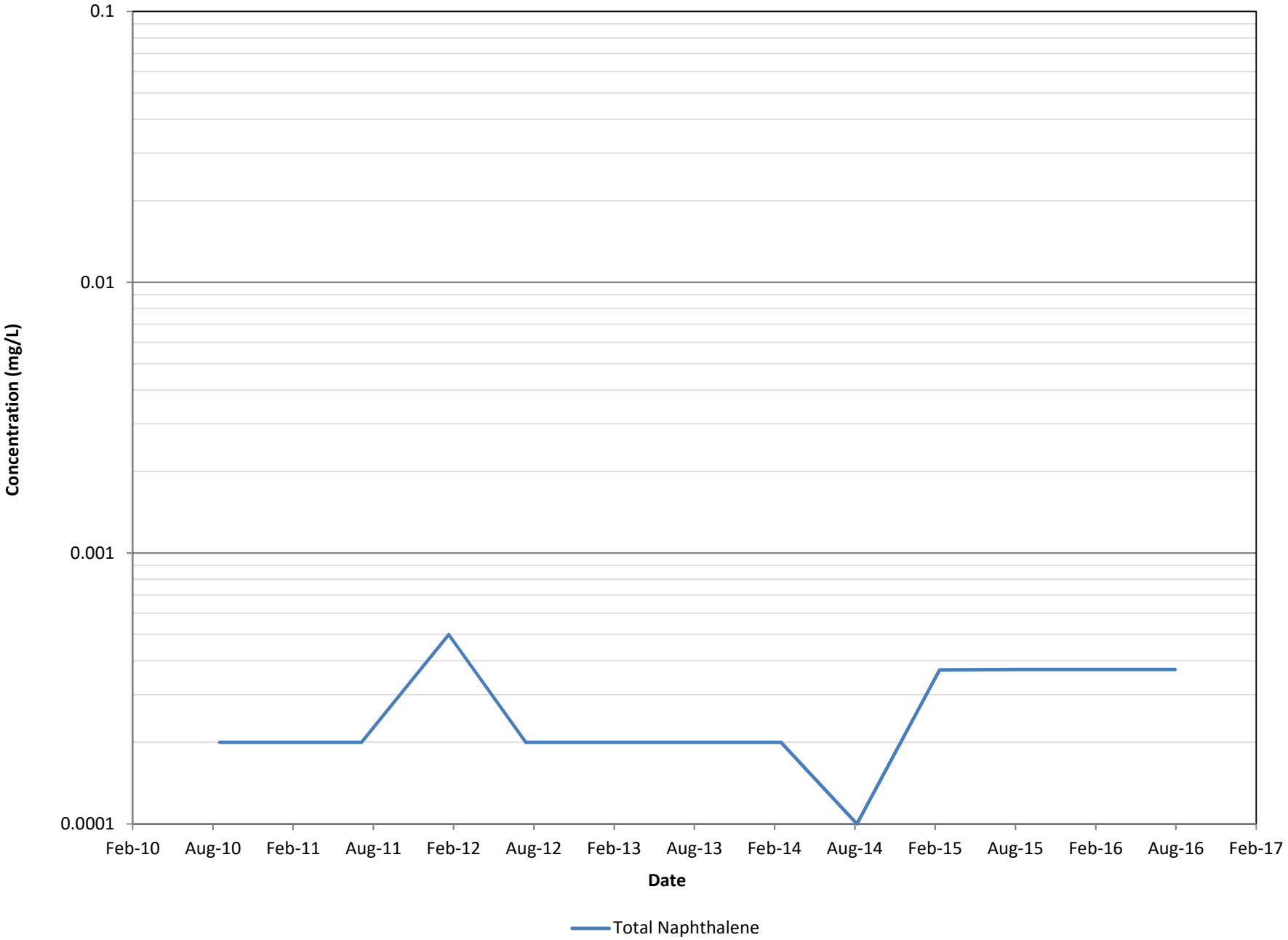
MW-29: TDS CONCENTRATIONS OVER TIME



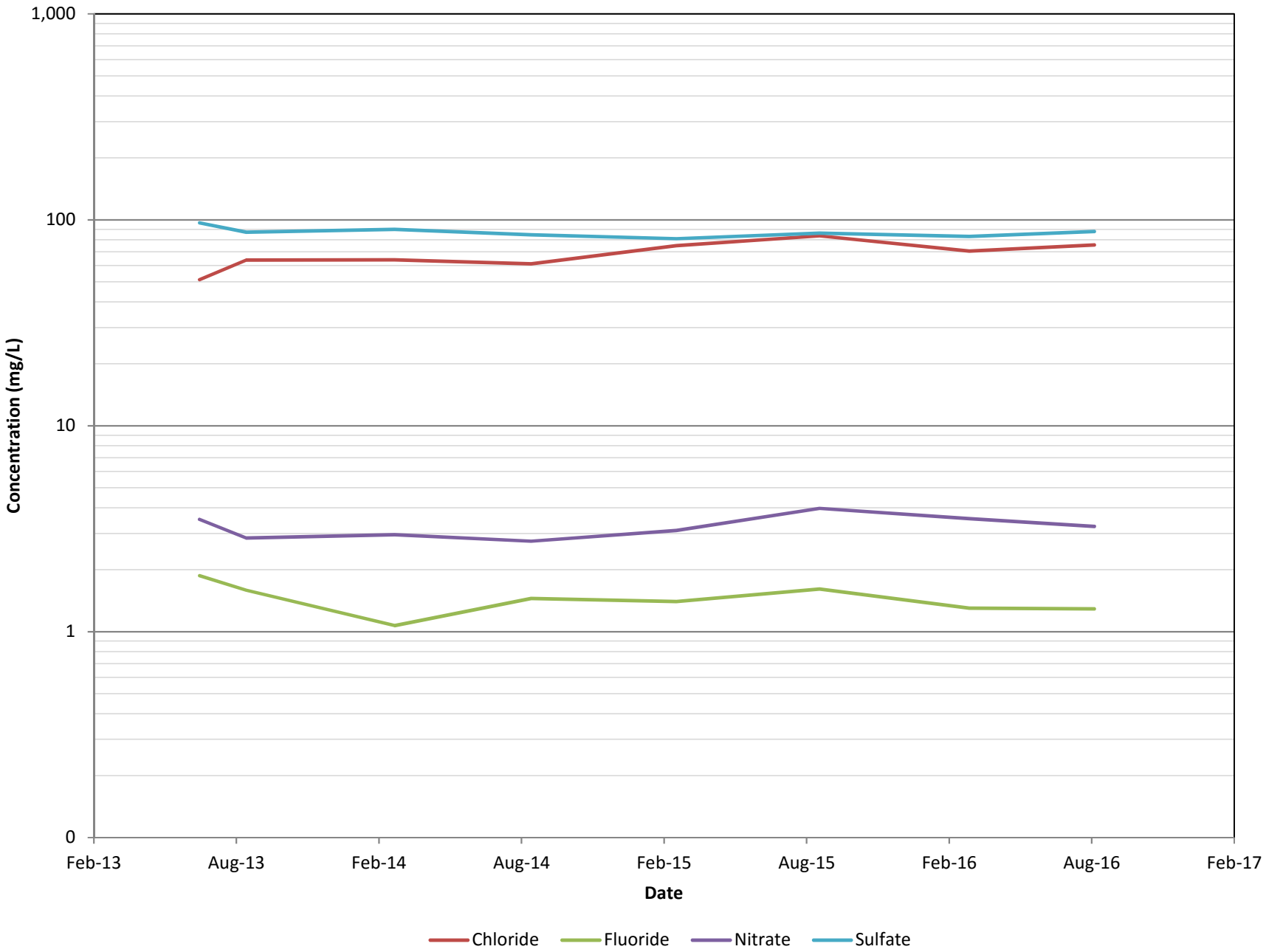
MW-29: METAL CONCENTRATIONS OVER TIME



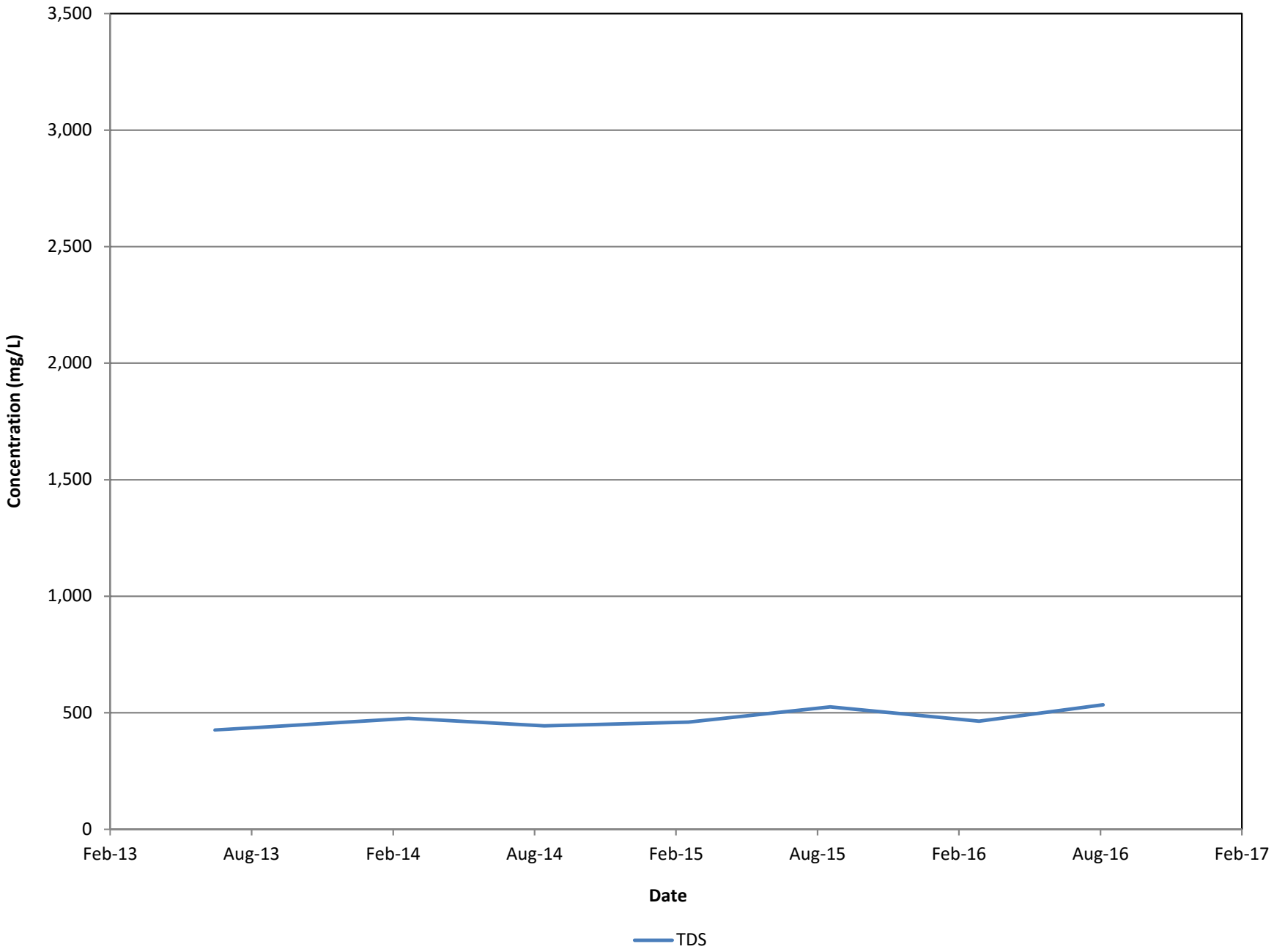
MW-29: SVOC CONCENTRATIONS OVER TIME



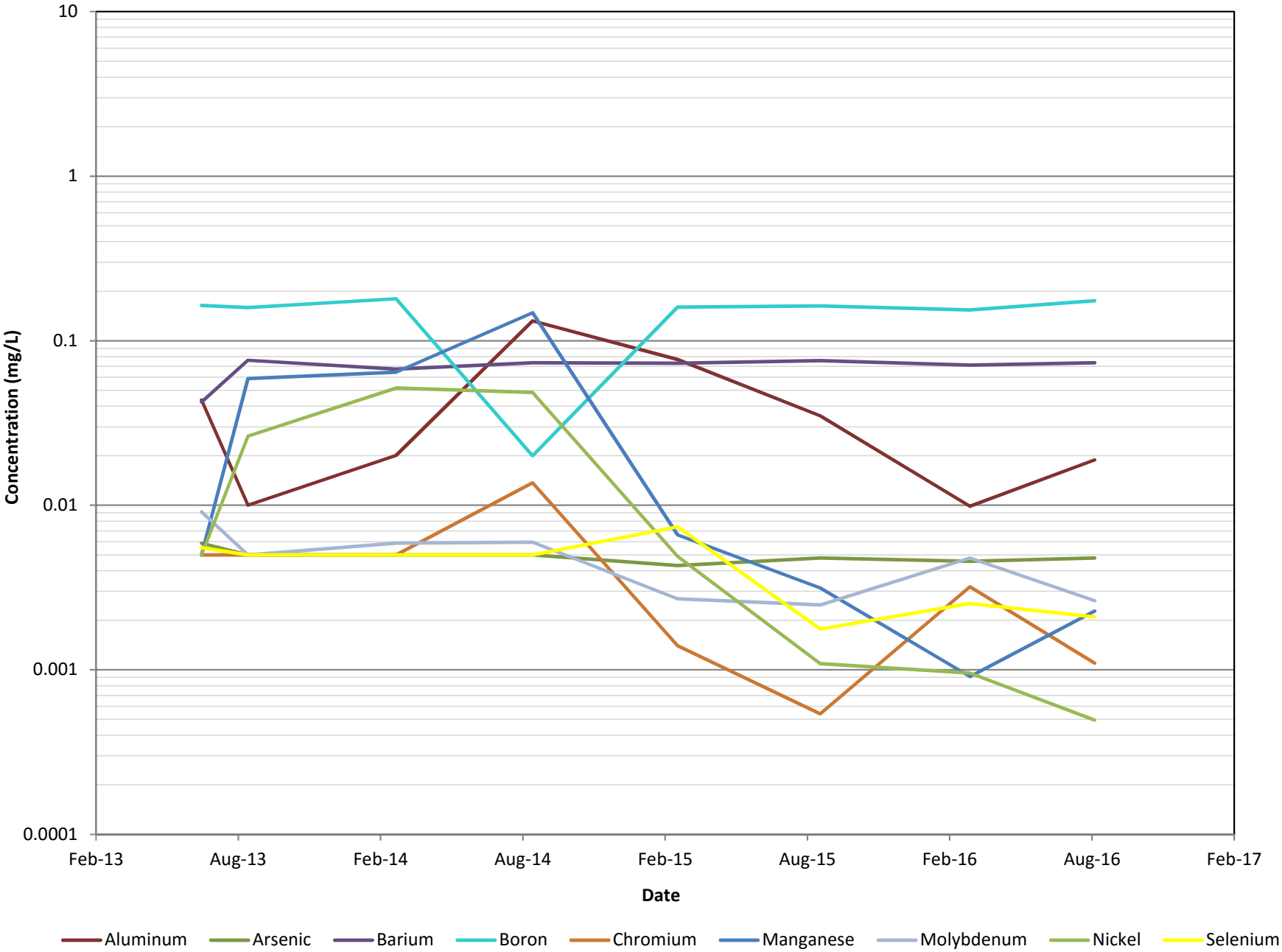
MW-30: ANION CONCENTRATIONS OVER TIME



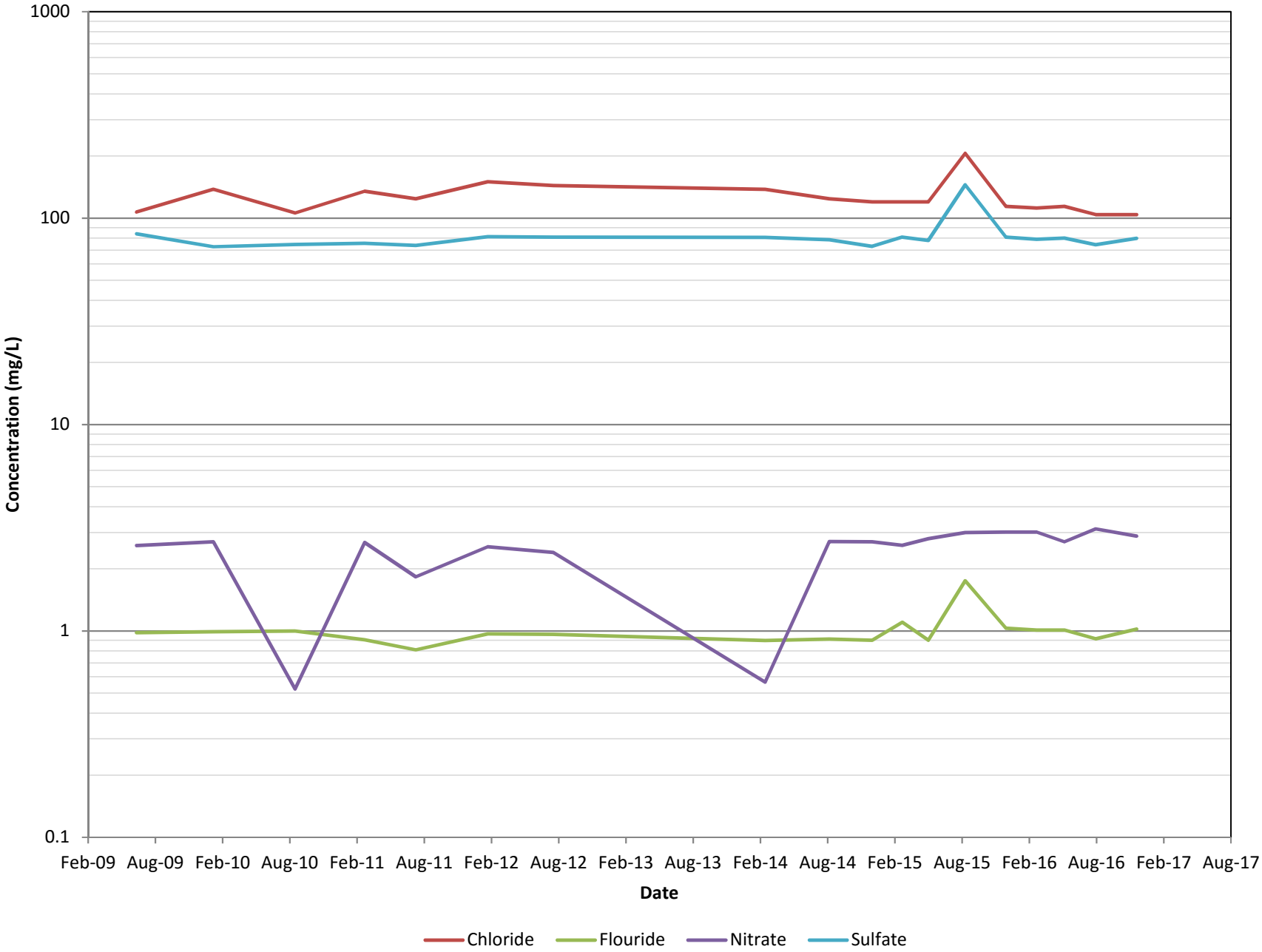
MW-30: TDS CONCENTRATIONS OVER TIME



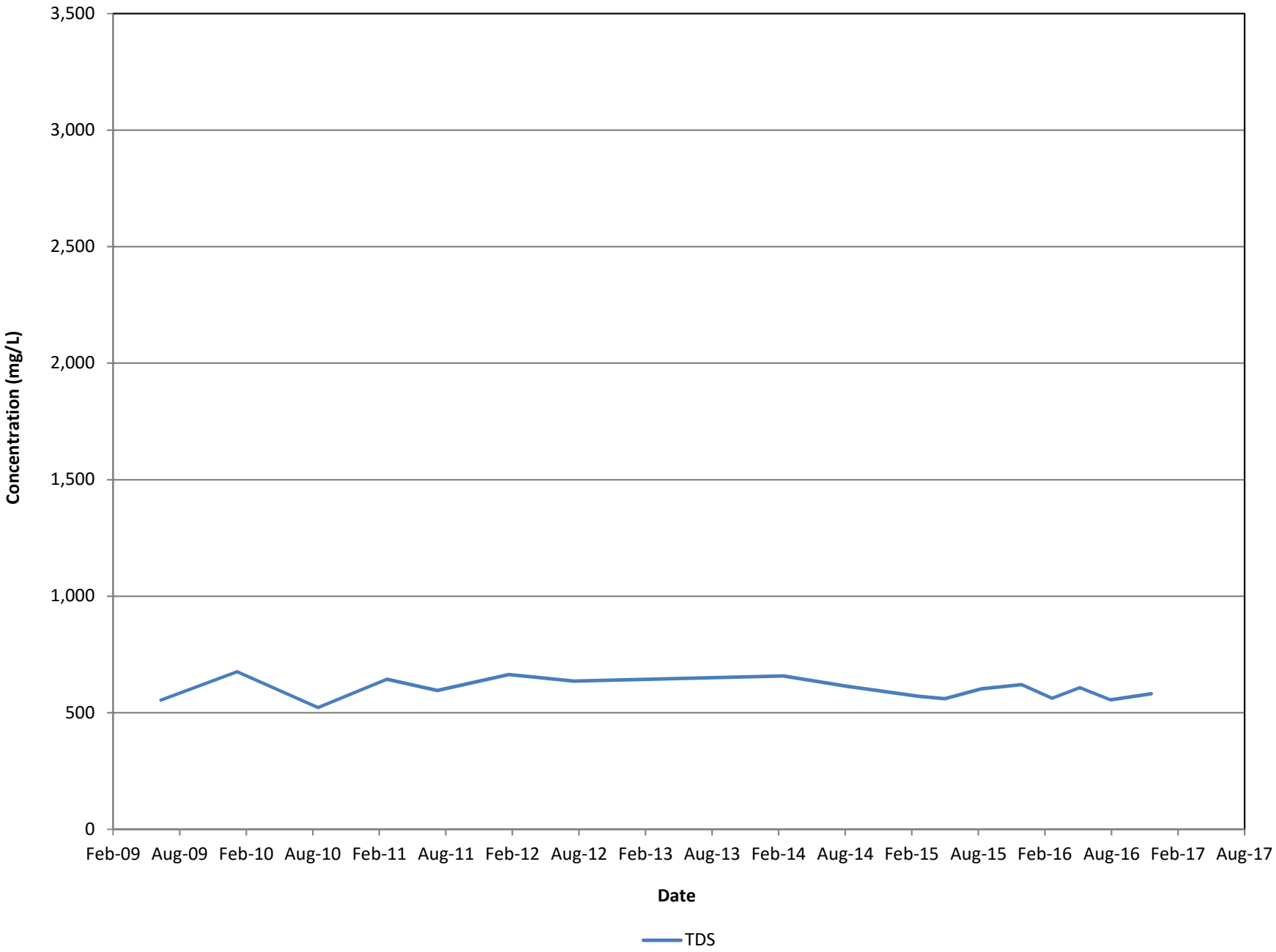
MW-30: METAL CONCENTRATIONS OVER TIME



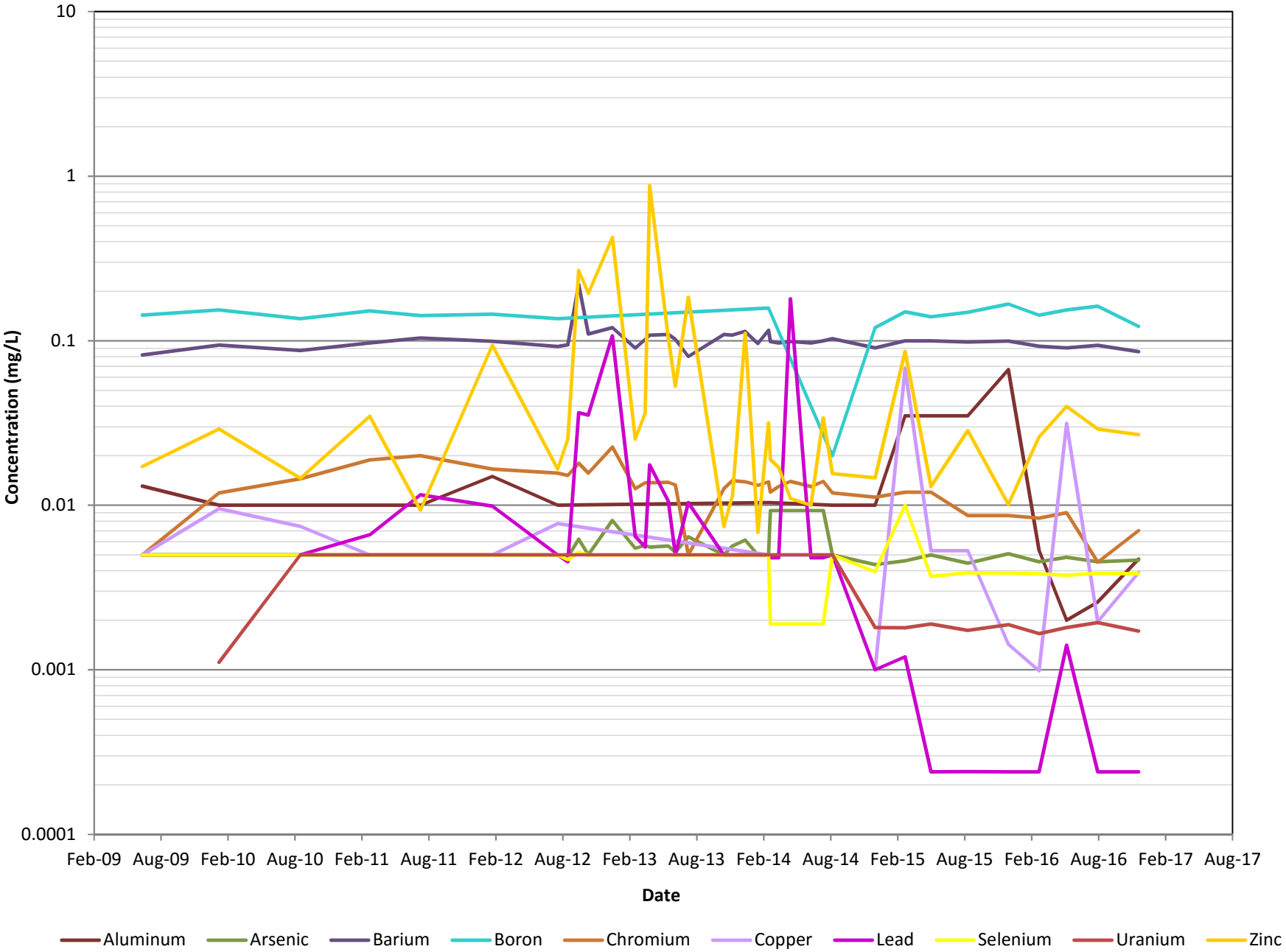
EAST WELL (WW-EAST): ANION CONCENTRATIONS OVER TIME



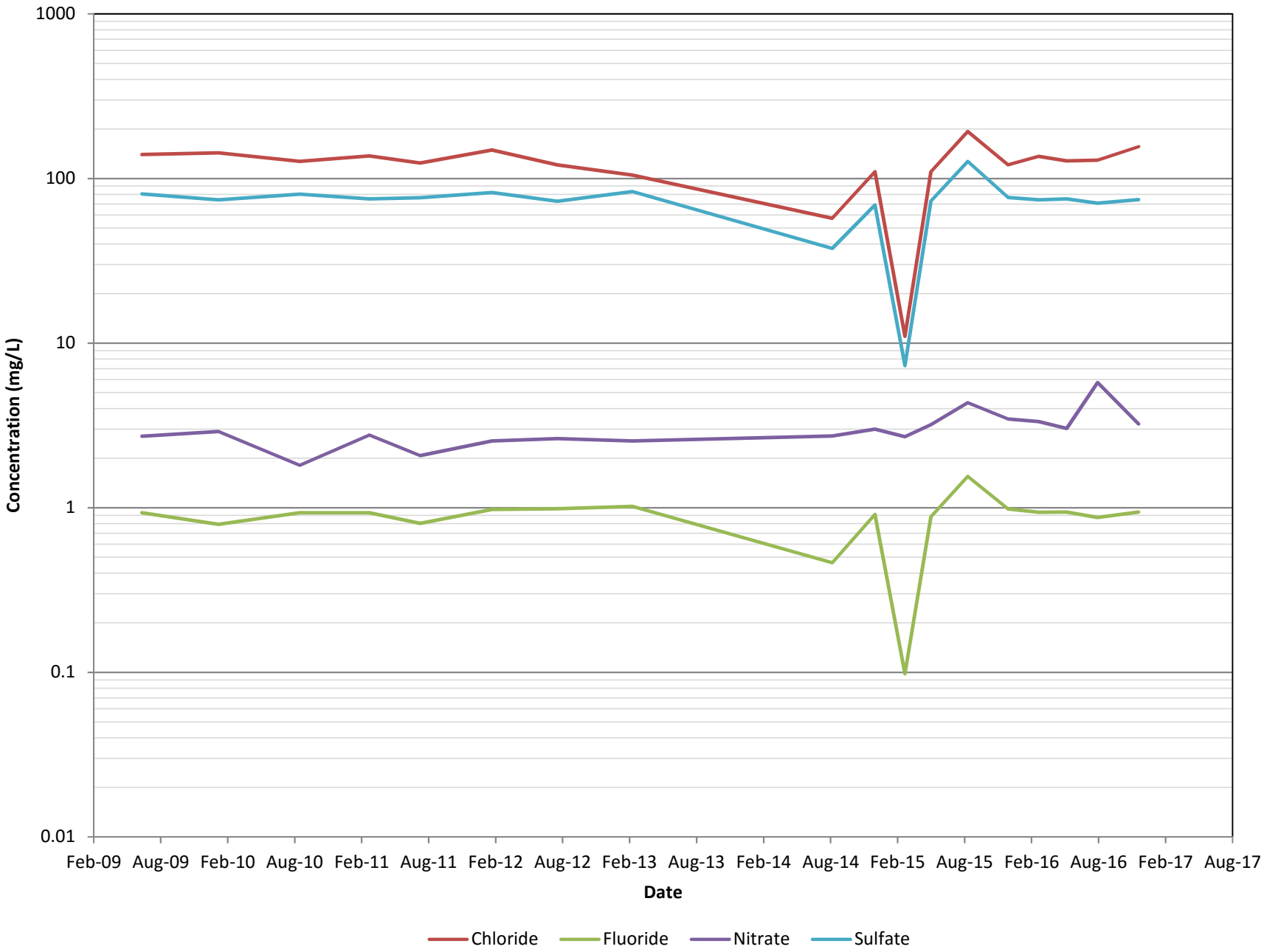
EAST WELL (WW-EAST): TDS CONCENTRATIONS OVER TIME



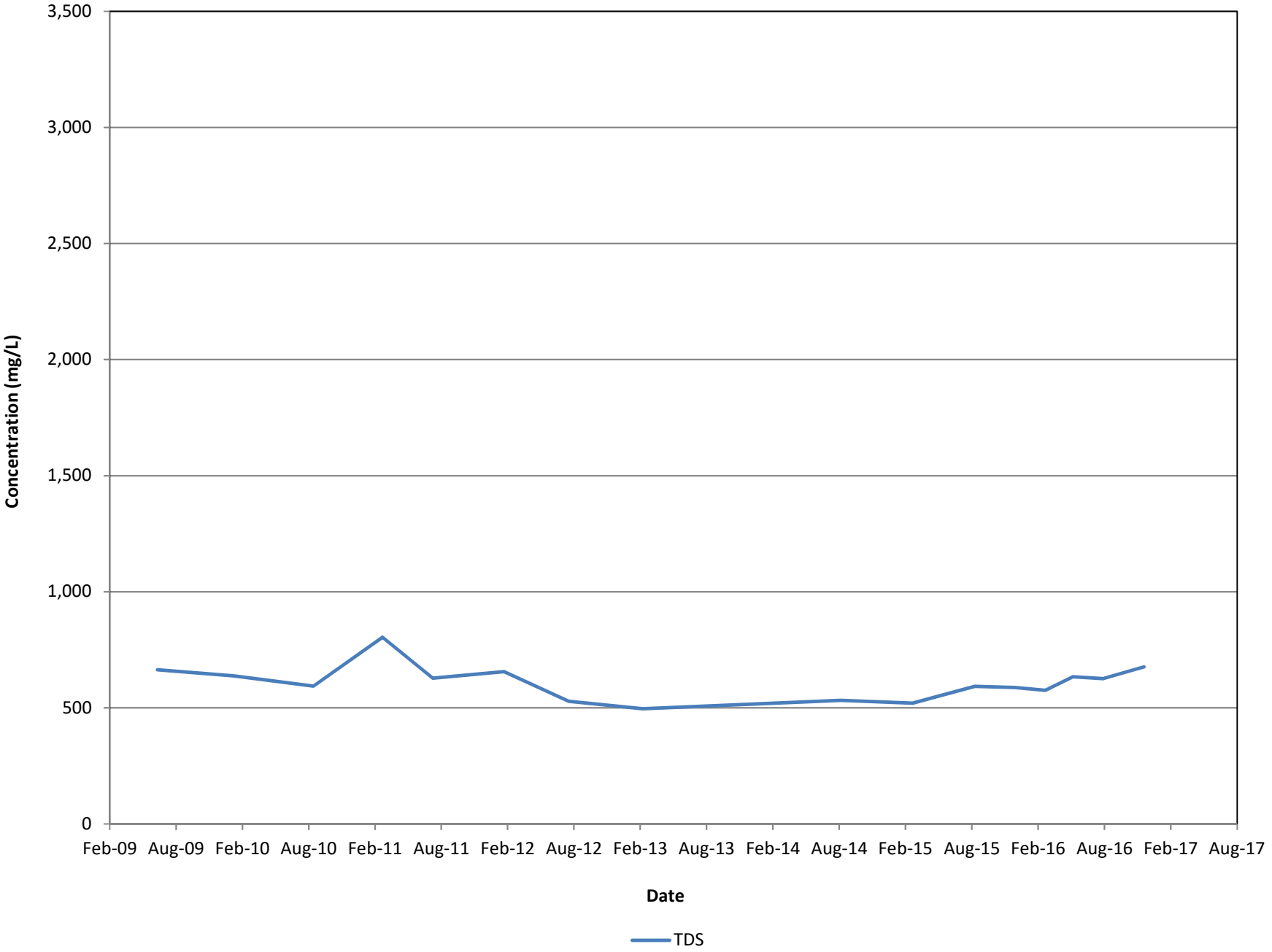
EAST WELL (WW-EAST): METAL CONCENTRATIONS OVER TIME



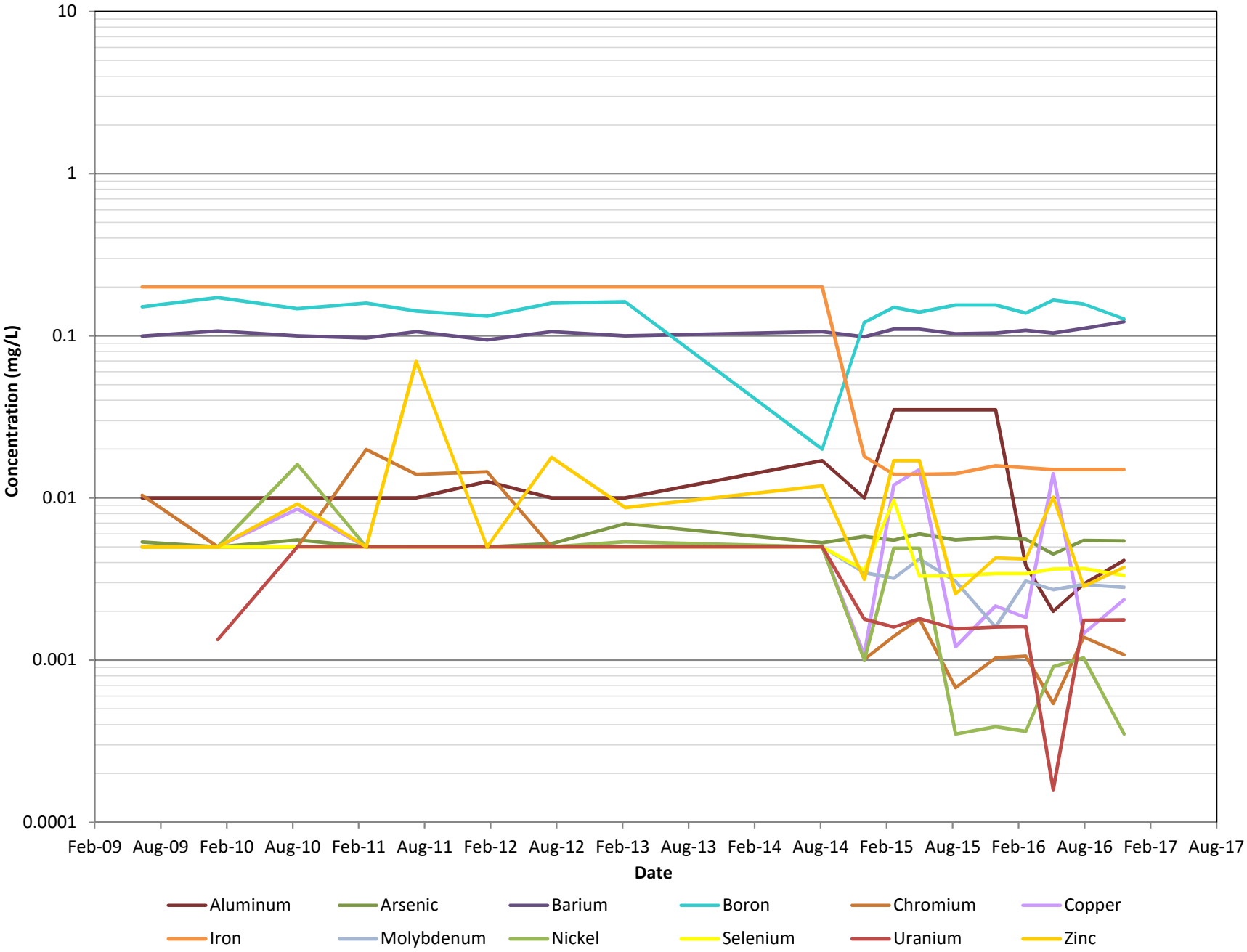
NORTH WELL (WW-NORTH): ANION CONCENTRATIONS OVER TIME



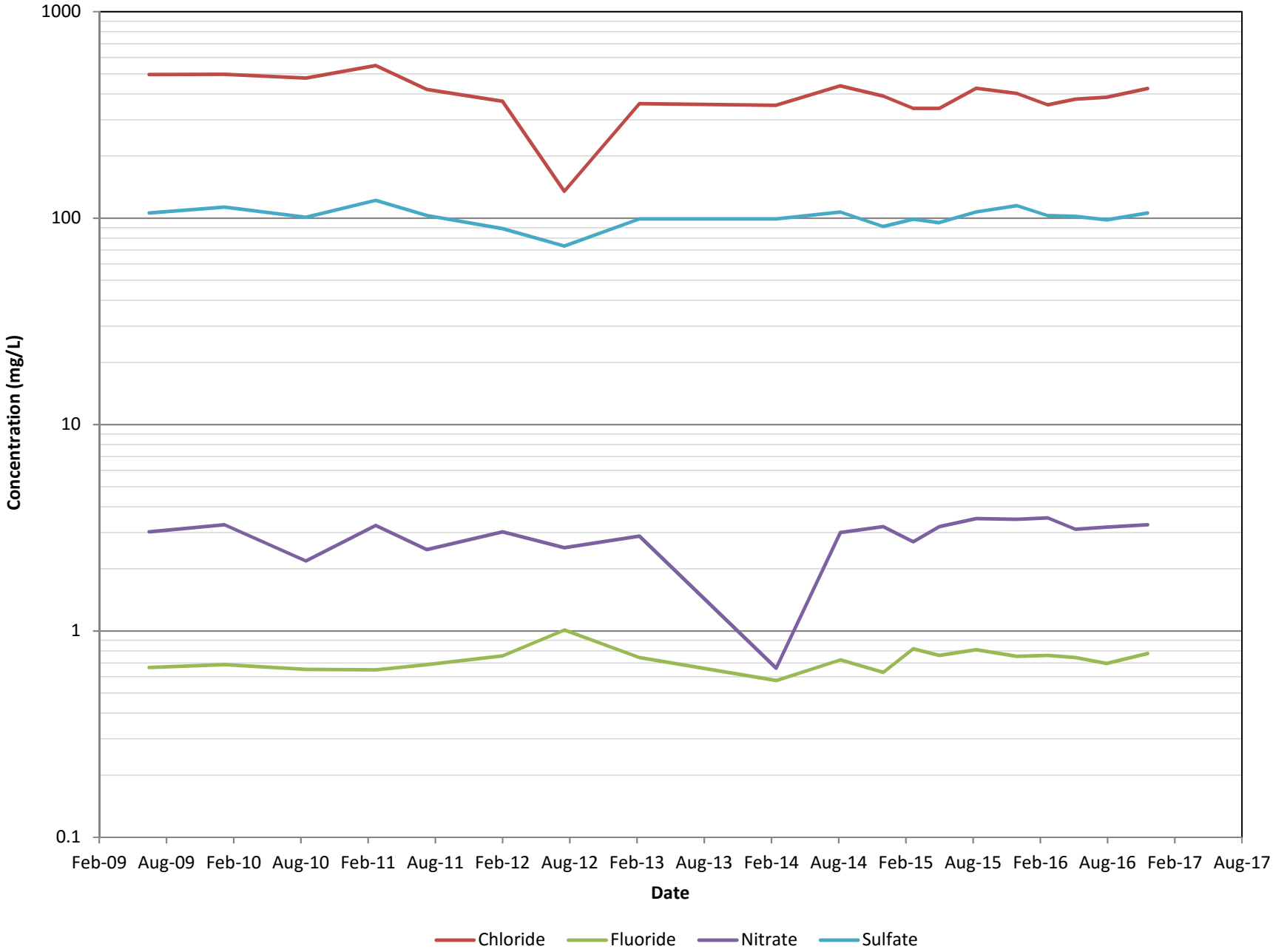
NORTH WELL (WW-NORTH): TDS CONCENTRATIONS OVER TIME



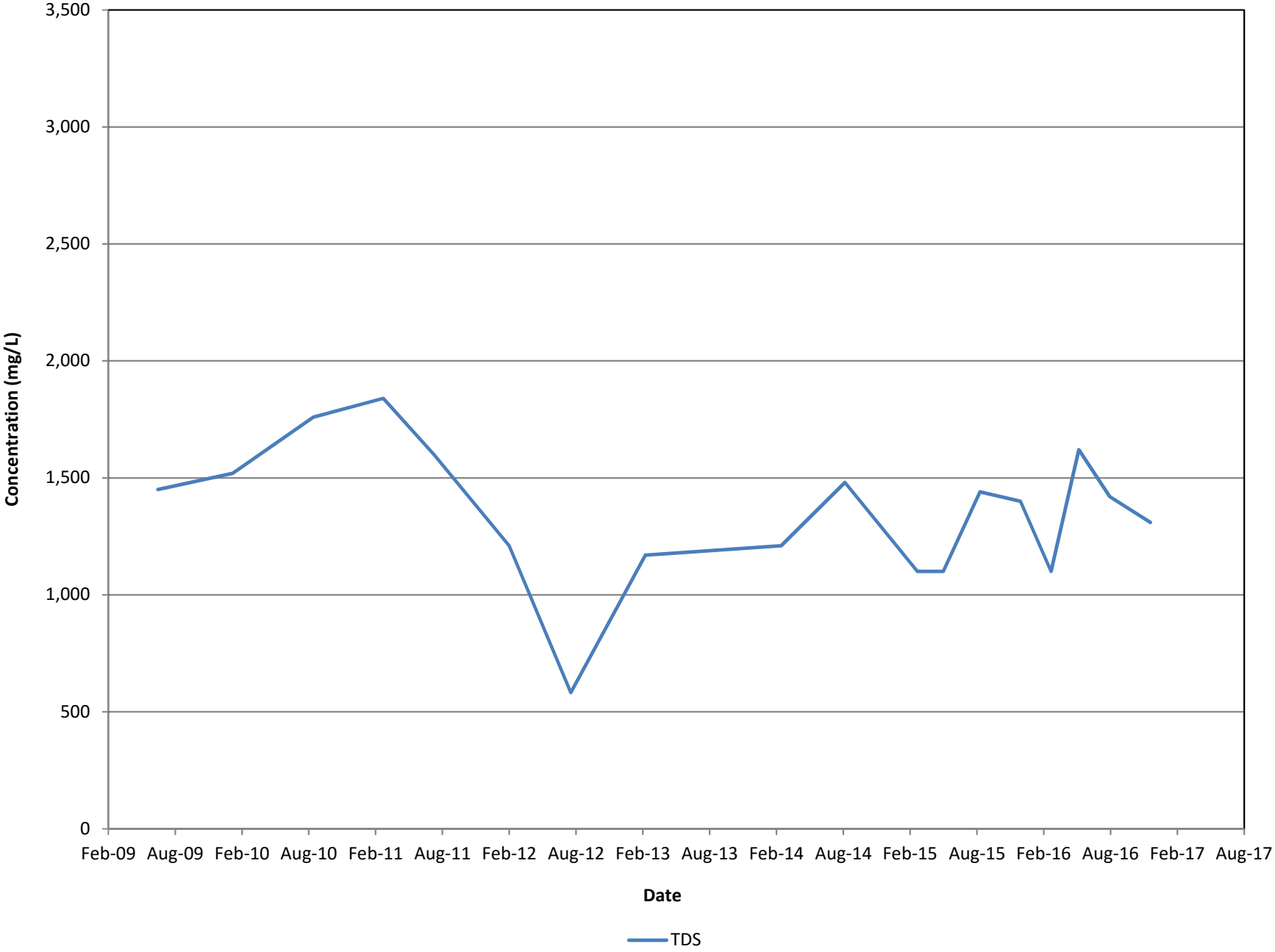
NORTH WELL (WW-NORTH): METAL CONCENTRATIONS OVER TIME



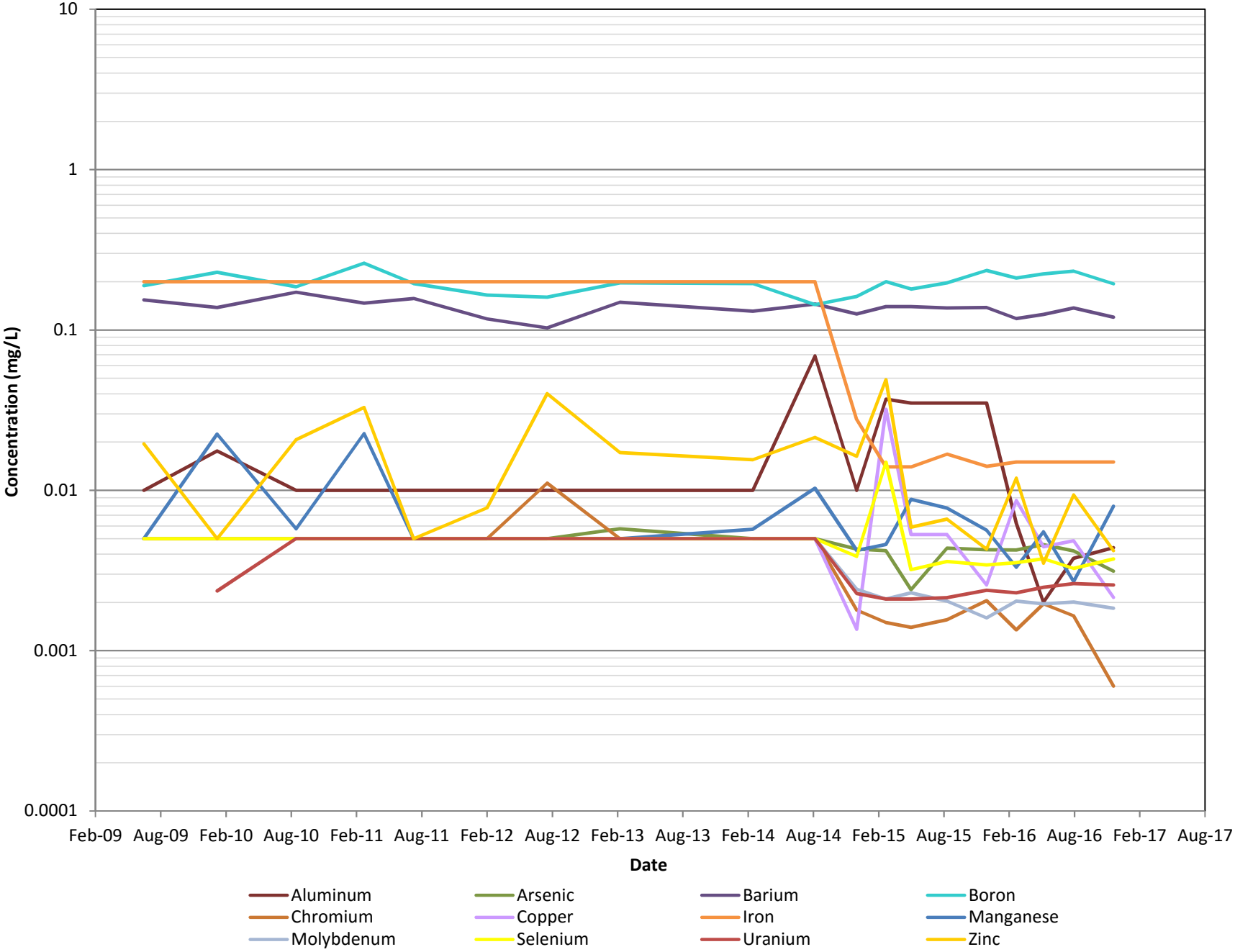
SOUTH WELL (WW-SOUTH): ANION CONCENTRATIONS OVER TIME



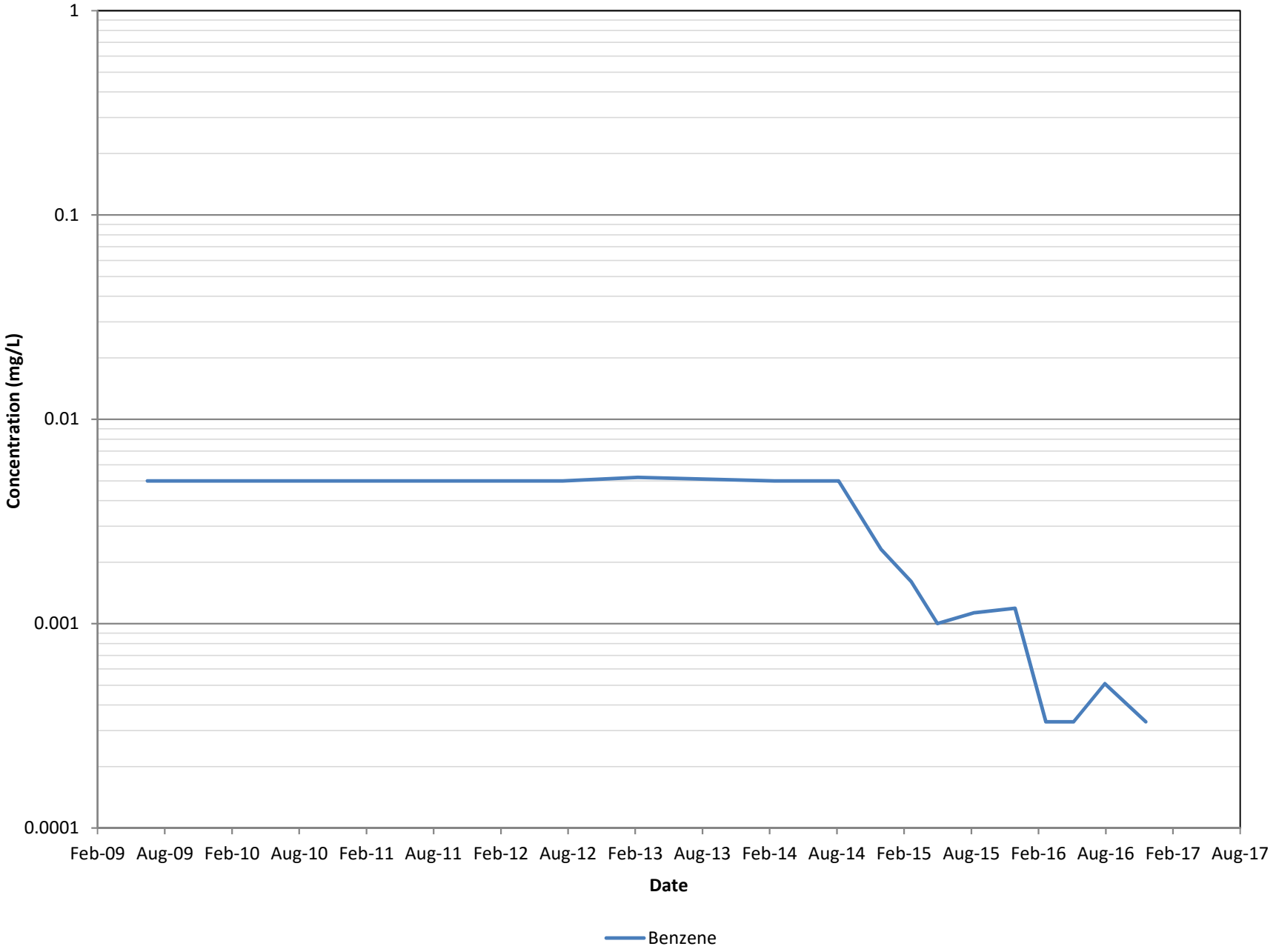
SOUTH WELL (WW-SOUTH): TDS CONCENTRATIONS OVER TIME



SOUTH WELL (WW-SOUTH): METAL CONCENTRATIONS OVER TIME



SOUTH WELL (WW-SOUTH): VOC CONCENTRATIONS OVER TIME



APPENDIX D

QUALITY ASSURANCE/QUALITY CONTROL DATA SUMMARY

APPENDIX D – QUALITY ASSURANCE/QUALITY CONTROL DATA SUMMARY

1.1 Semi-Annual and Quarterly Groundwater Samples

Nineteen water samples, two field duplicates, one equipment blank, and six trip blanks were collected from March 7 to 10, 2016. Three water samples and one field duplicate were collected on May 25, 2016. Thirty-two water samples, four field duplicates, two equipment blanks, and eight trip blanks were collected from August 15 to 19, 2016. Three water samples, one field duplicate, and one trip blank were collected on December 8, 2016. These samples were submitted to ESC in Mount Juliet, Tennessee for analyses.

TRC Quality Assurance (QA) staff reviewed resultant data on March 14, 2017. Six separate data packages identified as L822693, L822843, L837813, L854986, L854500, and L877712 were reviewed. Data were reviewed for compliance with the analytical protocols used for sample analysis and laboratory-defined quality control (QC) limits. Items reviewed during the data validation process included the following:

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

Data interpretation issues are identified in the following subsections.

1.1.1 Holding Times

- Laboratory notes indicate that all pH analyses were performed outside of holding time. The method states that samples must be analyzed immediately. ESC interprets this to mean within 15 minutes of collection.

1.1.2 Surrogates

- In March, May, August, and December 2016, surrogate recoveries of all analyses were within laboratory QC limits.

1.1.3 Laboratory Method Blanks

- In March 2016, nitrate-nitrite was detected in the laboratory method blanks WG857081 and WG856707. Specific conductance was detected in the laboratory method blank WG855609. These compounds were not detected in any associated samples at concentrations within five times the method blank concentration; therefore, there are

no data interpretation issues associated with detection of nitrate-nitrite or specific conductance in this method blank.

- In March 2016, these compounds were detected in the laboratory method blank WG855745. These compounds were detected in the following associate samples at concentrations within five times the method blank concentration and therefore may include measurement contributions from laboratory sources:
    - Aluminum: MW-1, MW-13, MW-15, MW-17R, MW-29, MW-30, Dup-1
    - Copper: MW-1, MW-13, MW-15, MW-17R, MW-29, MW-30, Dup-1
    - Iron: MW-13
    - Lead: MW-13, MW-15, Dup-1
    - Molybdenum: MW-1, MW-17R
    - Zinc: MW-1, MW-13, MW-15, MW-17R, Dup-1
- In March 2016, copper and molybdenum were detected in laboratory method blank WG856192. These compounds were detected in the following associate samples at concentrations within five times the method blank concentration and therefore may include measurement contributions from laboratory sources:
    - Copper: MW-6, MW-12R, MW-25, WW-North, and WW-East
    - Molybdenum: MW-6, MW-12R, MW-25, WW-North, WW-South, and WW-East
- In March 2016, di-n-butyl phthalate and di-n-octyl phthalate were detected in laboratory method blank WG856641. Di-n-butyl phthalate and di-n-octyl phthalate were detected in associated samples MW-12R, MW-25, WW-North, and WW-South at concentrations within ten times the method blank concentration and therefore may include measurement contributions from laboratory sources.
- In March 2016, aluminum was detected in laboratory method blank WG856533. Aluminum was detected in associated samples MW-6, MW-12R, MW-25, WW-North, WW-South, WW-East, and EB-3-10-16-A at concentrations within five times the method blank concentration and therefore may include measurement contributions from laboratory sources.
- In May 2016, alkalinity was detected in laboratory method blank WG876251. Alkalinity was not detected in any associated samples at concentrations within five

times the method blank concentration; therefore, there are no data interpretation issues associated with detection of alkalinity in this method blank.

- In May 2016, manganese was detected in laboratory method blank WG876373. Manganese was not detected in WW-South, WW-North, and Dup-4 at concentrations within five times the method blank concentration; therefore, there are no data interpretation issues associated with the detection of alkalinity in this method blank. Manganese was detected in WW-East within five times the associated method blank concentrations and therefore may include measurement contributions from laboratory sources.

- In August 2016, alkalinity was detected in laboratory method blank WG901093. Alkalinity was not detected in any associated samples at concentrations within five times the method blank concentration; therefore, there are no data interpretation issues associated with the detection of alkalinity in this method blank.

- In August 2016, nitrate-nitrite was detected in laboratory method blank WG900741. Nitrate-nitrite was not detected in any associated samples at concentrations within five times the method blank concentration; therefore, there are no data interpretation issues associated with the detection of nitrate-nitrite in this method blank.

- In August 2016, chloride and sulfate were detected in laboratory method blank WG900748. Chloride and sulfate were not detected in any associated samples at concentrations within five times the method blank concentration; therefore, there are no data interpretation issues associated with the detection of chloride and sulfate in this method blank.

- In August 2016, the following compounds were detected in laboratory method blank WG901756: aluminum, calcium, chromium, copper, manganese, nickel, and zinc. These compounds were detected in the following associated samples at concentrations within five times the associated method blank concentrations and therefore may include measurement contributions from laboratory sources:

    - Aluminum: MW-2, MW-6, MW-8, MW-12R, MW-14, MW-16, MW-17R, WW-North, WW-East, Dup-4

    - Calcium: EB-08-18-16-A, EB-08-18-16-B

    - Chromium: MW-2, MW-6, MW-8, MW-12R, MW-14, MW-17R, MW-18, WW-North, Dup-4, WW-East, EB-08-18-16-A, EB-08-18-16-B

    - Copper: MW-2, MW-6, MW-8, MW-12R, MW-14, MW-17R, MW-18, MW-29, WW-North, WW-South, Dup-4, WW-East, EB-08-18-16-A, EB-08-18-16-B

- Manganese: MW-2, MW-8, MW-29, WW-North, EB-08-18-16-A
- Nickel: MW-2, MW-6, MW-8, MW-12R, MW-14, MW-17R, MW-18, MW-29, WW-North, WW-South, Dup-4, WW-East, EB-08-18-16-A, EB-08-18-16-B
- Zinc: MW-2, MW-6, MW-8, MW-14, MW-18, MW-29, WW-North, WW-South, Dup-4, WW-East

- In August 2016, mercury was detected in laboratory method blank WG901226. Mercury was not detected in MW-6, MW-14, MW-17R, MW-29, WW-East, EB-08-18-16-A, and EB-08-18-16-B; therefore, there are no data interpretation issues associated with the detection of mercury in this method blank. Mercury was detected in associated samples MW-2, MW-8, MW-12R, MW-18, WW-North, WW-South, and Dup-4 at concentrations within five times the method blank concentration and therefore may include measurement contributions from laboratory sources.
- In August 2016, the following compounds were detected in laboratory method blank WG901124: aluminum, chromium, copper, iron, lead, manganese, molybdenum, nickel, and potassium. Molybdenum and potassium were not detected in any associated samples at concentrations within five times the blank concentration; therefore, there are no data interpretation issues associated with detection of these compounds in this method blank. These compounds were detected in the following associated samples at concentrations within five times the associated method blank concentrations and therefore may include measurement contributions from laboratory sources:
  - Aluminum: MW-1, MW-4, MW-5, MW-13, MW-15, MW-16, MW-19, MW-20, MW-22, MW-24, MW-25, MW-28, MW-30, Dup-1, Dup-2, Dup-3
  - Chromium: MW-1, MW-4, MW-5, MW-13, MW-15, MW-16, MW-19, MW-20, MW-22, MW-24, MW-25, MW-28, MW-30, Dup-1, Dup-2, Dup-3
  - Copper: MW-1, MW-4, MW-5, MW-13, MW-15, MW-16, MW-19, MW-22, MW-24, MW-25, Dup-1, Dup-2, Dup-3
  - Iron: MW-1, MW-4, MW-5, MW-13, MW-16, MW-19, MW-20, MW-24, MW-25, MW-28, Dup-1, Dup-3
  - Lead: MW-20
  - Manganese: MW-1, MW-4, MW-5, MW-19, MW-20, MW-22, MW-24, MW-28
  - Nickel: MW-4, MW-5, MW-19, MW-20, MW-22, MW-24, MW-25, MW-28, MW-30, Dup-2

- In August 2016, aluminum, calcium, chromium, copper, manganese, nickel, and potassium were detected in laboratory method blank WG901422. Calcium, manganese, and potassium were not detected in associated sample MW-21 at concentrations within five times the blank concentration; therefore, there are no data interpretation issues associated with detection of these compounds in this method blank. Aluminum, chromium, copper, and nickel were detected in associated sample MW-21 at concentrations within five times the method blank concentration and therefore may include measurement contributions from laboratory sources.

- In August 2016, n-butylbenzne and hexachloro-1,3-butadiene were detected in laboratory method blanks WG900855 and WG900942, but were not detected in any associated samples. Therefore, there are no data interpretation issues associated with this blank detection.

- In August 2016, chloromethane was detected in laboratory method blanks WG901614, but it was not detected in any associated samples. Therefore, there are no data interpretation issues associated with this blank detection.

- In August 2016, di-n-butyl phthalate and di-n-octyl phthalate were detected in laboratory method blanks WG901058 and WG902203. Di-n-butyl phthalate and di-n-octyl phthalate were detected in associated samples at concentrations within ten times the method blank concentration and therefore may include measurement contributions from laboratory sources.

- In December 2016, dissolved aluminum and dissolved manganese were detected in laboratory method blank WG934836. Dissolved aluminum was detected in associated samples WW-North, WW-South, WW-South D, and WW-East at concentrations within five times the method blank concentration and therefore may include measurement contributions from laboratory sources. Dissolved manganese was detected in associated samples WW-North at concentrations within five times the method blank and therefore may include measurement contributions from laboratory sources.

- In December 2016, bromomethane and chloromethane were detected in laboratory method blank WG934682, but they were not detected in any associated samples. Therefore, there are no data interpretation issues associated with this blank detection.

- In December 2016, di-n-octyl phthalate was detected in laboratory method blank WG934274. Samples with a di-n-octyl phthalate detection were at concentrations within ten times the method blank concentration and therefore may include measurement contributions from laboratory sources.

1.1.4 Equipment Blanks

- In March 2016, the following compounds were detected in equipment blank EB-3-10-16-A: aluminum, boron, manganese, nickel, zinc, and benzaldehyde.
    - Aluminum was detected in MW-1, MW-6, MW-12R, MW-13, MW-15, MW-17R, MW-25, MW-29, MW-30, WW-North, WW-South, WW-East, and Dup-1 at concentrations within five times the blank concentration and may include measurement contributions from inadequate decontamination of field equipment or from laboratory sources as discussed above.
    - Benzaldehyde was not detected in any associated samples; therefore, there are no data interpretation issues associated with this blank detection.
    - Boron was detected in all samples greater than five times the equipment blank concentrations. Therefore, there are no data interpretation issues associated with this blank detection.
    - Manganese was detected in MW-1, MW-12R, MW-13, MW-15, MW-29, MW-30, WW-North, WW-South, WW-East, and Dup-1 at concentrations within five times the blank concentration and may include measurement contributions from inadequate decontamination of field equipment.
    - Nickel was detected in samples MW-1, MW-6, MW-12R, MW-13, MW-15, MW-17R, MW-25, MW-29, MW-30, WW-North, WW-South, WW-East, and Dup-1 within five times the maximum equipment blank concentration and may include measurement contributions from inadequate decontamination of field equipment.
    - Zinc was detected in MW-1, MW-6, MW-13, MW-15, MW-17R, MW-25, WW-North, WW-South, WW-East, and Dup-1 at concentrations within five times the blank concentration and may include measurement contributions from inadequate decontamination of field equipment or from laboratory sources as discussed above.
- In August 2016, the following compounds were detected in equipment blank EB-3-10-16-A: TDS, alkalinity, boron, calcium, chromium, copper, manganese, nickel, sodium, benzaldehyde, and di-n-butyl phthalate. The following compounds were detected in equipment blank EB-3-10-16-B: TDS, nitrate-nitrite, chloride, boron, calcium, chromium, copper, nickel, benzaldehyde, and di-n-butyl phthalate.
    - TDS, alkalinity, chloride, nitrate-nitrite, boron, calcium, sodium, and benzaldehyde were not detected in any associated samples at concentrations within five times the blank concentration; therefore, there are no data interpretation issues associated with these blank detections.

- Chromium was detected in samples MW-1, MW-2, MW-4, MW-5, MW-6, MW-8, MW-12R, MW-13, MW-14, MW-15, MW-16, MW-17R, MW-18, MW-19, MW-20, MW-21, MW-22, MW-24, MW-25, MW-28, MW-30, WW-North, WW-South, WW-East, Dup-1, Dup-2, Dup-3, and Dup-4 at concentrations within five times the blank concentration and may include measurement contributions from inadequate decontamination of field equipment or from laboratory sources as discussed above.

- Copper was detected in samples MW-1, MW-2, MW-4, MW-5, MW-6, MW-8, MW-12R, MW-13, MW-14, MW-15, MW-16, MW-17R, MW-18, MW-19, MW-21, MW-22, MW-24, MW-25, MW-29, WW-North, WW-South, WW-East, Dup-1, Dup-2, Dup-3, and Dup-4 at concentrations within five times the blank concentration and may include measurement contributions from inadequate decontamination of field equipment or from laboratory sources as discussed above.

- Manganese was detected in samples MW-2, MW-4, MW-5, MW-8, MW-19, MW-20, MW-22, MW-24, MW-28, MW-29, and WW-North at concentrations within five times the blank concentration and may include measurement contributions from inadequate decontamination of field equipment or from laboratory sources as discussed above.

- Nickel was detected in samples MW-2, MW-4, MW-5, MW-6, MW-8, MW-12R, MW-13, MW-14, MW-17R, MW-18, MW-19, MW-20, MW-21, MW-22, MW-24, MW-28, MW-29, MW-30, WW-North, WW-South, WW-East, Dup-2, and Dup-4 at concentrations within five times the blank concentration and may include measurement contributions from inadequate decontamination of field equipment. With the exception of MW-13, these samples also may include measurement contributions from laboratory sources as discussed above.

- Di-n-butyl phthalate was detected in all samples, except MW-19 which was non-detect, in August 2016 at concentrations within ten times the blank concentration and may include measurement contributions from inadequate decontamination of field equipment or from laboratory sources as discussed above.

1.1.5 Laboratory Control Sample/Laboratory Control Sample Duplicate (LCS/LCSD)

- In March 2016, LCS/LCSD recoveries of 1,1,2,2-tetrachloroethane was below laboratory-defined control limits in batch WG856335. 1,1,2,2-tetrachloroethane was not detected in any of the associated samples; therefore, there are no data interpretation issues associated with these recoveries.

- In March 2016, LCS recovery of caprolactam was below the laboratory-defined control limit in batch WG856644. Caprolactam was not detected in any of the associated samples; therefore, there are no data interpretation issues associated with this recovery.
- In August 2016, LCSD recovery of 4-nitroaniline exceeded the laboratory-defined control limit in batch WG901966. 4-nitroaniline was not detected in any of the associated samples; therefore, there are no data interpretation issues associated with this recovery.
- In August 2016, LCS recovery of bromoform was below the laboratory-defined control limit in batch WG900942. Bromoform was not detected in any of the associated samples; therefore, there are no data interpretation issues associated with this recovery.
- In August 2016, the relative percent difference (RPD) of bromoform exceeded the laboratory-defined control limit in batch WG900942. Bromoform was not detected in any of the associated samples; therefore there are no data interpretation issues associated with the RPD.
- In August 2016, LCS/LCSD recoveries for 2,4-dinitrotoluene and 4-nitrophenol exceeded laboratory-defined control limits in batch WG901057. The LCSD recovery for 4-nitroaniline exceeded the laboratory-defined control limit in the same batch. 2,4-dinitrotoluene, 4-nitrophenol, and 4-nitroaniline were not detected in any of the associated samples; therefore, there are no data interpretation issues associated with these recoveries.
- In August 2016, the RPDs of benzaldehyde and 2,4-dinitrophenol exceeded the laboratory-defined control limit in batches WG901058 and WG902203. Benzaldehyde and 2,4-dinitrophenol were not detected in any of the associated samples; therefore, there are no data interpretation issues associated with the RPD.
- In December 2016, the RPD of acetone exceeded the laboratory-defined control limit in batch WG934318. Acetone was not detected in any of the associated samples; therefore, there are no data interpretation issues associated with the RPD.
- In December 2016, the LCSD recovery of n-butylbenzene, the LCS recovery of 1,1,2-trichloroethane, and the LCS/LCSD recoveries of chloroethane and naphthalene were outside the laboratory-defined control limits in batch WG934682. These analytes were not detected in any of the associated samples; therefore, there are no data interpretation issues associated with these recoveries.
- In December 2016, the LCS/LCSD recoveries of 4-nitroaniline and the RPDs of 2,4-dinitrophenol and 4-nitrophenol exceeded the laboratory-defined control limits in batch

WG934274. These analytes were not detected in any of the associated samples; therefore, there are no data interpretation issues associated with these recoveries or RPDs.

1.1.6 Matrix Spike/Matrix Spike Duplicate (MS/MSD)

- In March 2016, MS/MSD recoveries of select compounds did not meet laboratory-defined limits in the following samples:
  - WW-North:
    - The MS recoveries for 1,2-dichloroethane, 1,2-dichloropropane, 2-butanone, acetone, and bromodichloromethane were greater than laboratory-defined limits. These compounds were not detected in this sample, therefore, there are no data interpretation issues associated with the compounds in this sample.
    - MS/MSD recoveries for alkalinity were below the laboratory-defined limits, and therefore the alkalinity result in this sample may be biased low.
    - MSD recovery for sulfate was above the laboratory-defined limits, and therefore the sulfate result in this sample may be biased high.
  - WW-East:
    - The MS recovery for nitrate-nitrite was below the laboratory-defined limits, and therefore the nitrate-nitrite result in this sample may be biased low.
  - MW-28:
    - MS/MSD recoveries for alkalinity were below the laboratory-defined limits, and therefore the alkalinity result in this sample may be biased low.
  - MW-3:
    - The MS recovery for nitrate-nitrite was below the laboratory-defined limits, and therefore the nitrate-nitrite result in this sample may be biased low.
- In March 2016, RPD of hexachloro-1,3-butadiene exceeded the laboratory-defined control limit. Hexachloro-1,3-butadiene was not detected in any of the associated samples; therefore, there are no data interpretation issues associated with the RPD.
- In May 2016, the MSD recovery of calcium and the MS recovery of sodium were below the laboratory-defined limits in the WW-South, therefore the calcium and sodium result in this sample may be biased low.

- In August 2016, MS/MSD recoveries of select compounds did not meet laboratory-defined limits in the following samples:
    - WW-North:
        - MS/MSD recoveries for alkalinity were below the laboratory-defined limits, and therefore the alkalinity result in this sample may be biased low.
        - MSD recovery for calcium was above the laboratory-defined limits. The calcium spike concentration was less than four times the sample concentrations; therefore, there are no data interpretation issues associated with this compound in this sample.
    - WW-South:
        - MS/MSD recoveries for alkalinity were below the laboratory-defined limits, and therefore the alkalinity result in this sample may be biased low.
        - The MS/MSD recoveries for calcium and sodium were below laboratory-defined limits. The fluoride result in this sample may be biased high. The calcium and sodium spike concentrations were less than four times the sample concentrations; therefore, there are no data interpretation issues associated with these compounds in this sample.
- In August 2016, MS/MSD RPDs of all compounds met laboratory-defined limits.
- In December 2016, MS/MSD recoveries of select compounds did not meet laboratory-defined limits in the following sample:
    - WW-North:
        - MS/MSD recoveries for alkalinity were below the laboratory-defined limits, and therefore the alkalinity result in this sample may be biased low.
        - MS/MSD recovery for dissolved calcium and the MSD recovery for dissolved sodium were below the laboratory-defined limits. The dissolved calcium and dissolved sodium spike concentrations were less than four times their respective sample concentrations; therefore there are no data interpretation issues associated with this compound result in this sample.
        - The MSD recovery for dissolved boron was below the laboratory-defined limits. However, the MS recovery is within the laboratory-defined limits, so there are no data interpretation issues associated with this compound in this sample.

- All RPDs and at least one MS/MSD recovery for each VOC (except bromomethane) were out of the laboratory-defined limits in batch WG934318. However, VOCs were not detected in the parent sample, so no data interpretation issues associated with these compounds in the associated samples.

- The RPD and MSD percent recovery for di-n-octyl phthalate were outside of the laboratory-defined limits in batch WG934274. The detection in sample WW-North may be biased high.

1.1.7 Laboratory Duplicates

There were no data interpretation issues associated with laboratory duplicate analyses in March, May, or December 2016. In August 2016, the relative percent difference (RPD) of alkalinity for sample EB-08-18-16-A exceeded the laboratory-defined control limit and therefore the alkalinity result in this sample may be biased high.

1.1.8 Field Duplicates

- In March 2016, the RPDs for the following samples did not meet control limits. All but chromium and selenium were already considered estimated by the lab:

  - MW-30/DUP-1: aluminum, chromium, manganese, molybdenum, selenium

- In May 2016, the RPD for chromium did not meet control limits between South-WW and its duplicate sample Dup-4. The detected concentrations in both samples are already considered estimated by the lab.

- In August 2016, the RPDs for the following samples did not meet control limits, but the detected concentrations were already considered estimated by the lab:

  - MW-15/Dup-1: copper

  - MW-30/Dup-2: aluminum

  - MW-25/Dup-3: aluminum, copper, iron

  - WW-South/Dup-4: TPH-High Fraction (DRO)

- In December 2016, the RPD for di-n-butyl phthalate did not meet control limits between WW-South and its duplicate sample WW-South-D. The detected concentrations in both samples are already considered estimated by the lab.

All other RPD values did not exceed 30% in other field duplicate pairs

APPENDIX E

STATE WELL REPORTS, PLUGGING REPORTS, AND SOIL BORING/WELL COMPLETION LOGS

PLUGGING RECORD

NOTE: A Well Plugging Plan of Operations shall be approved by the State Engineer prior to plugging - 19.27.4 NMAC

I. GENERAL / WELL OWNERSHIP:

State Engineer Well Number: L-14228

Well owner: Holly Frontier Navajo Refining LLC Phone No.: _____

Mailing address: 501 East Main Street

City: Artesia State: NM Zip code: 88210

II. WELL PLUGGING INFORMATION:

1) Name of well drilling company that plugged well: Harrison & Cooper, Inc. (DBA HCI Drilling)

2) New Mexico Well Driller License No.: WD-1670 Expiration Date: 04/30/2017

3) Well plugging activities were supervised by the following well driller(s)/rig supervisor(s): Ken Cooper and Jarod Michalsky

4) Date well plugging began: 12/07/2016 Date well plugging concluded: 12/07/2016

5) GPS Well Location: Latitude: 32 deg, 52 min, 49.18 sec
Longitude: 103 deg, 18 min, 7.95 sec, WGS 84

6) Depth of well confirmed at initiation of plugging as: 115 ft below ground level (bgl), by the following manner: _____

7) Static water level measured at initiation of plugging: Dry ft bgl

8) Date well plugging plan of operations was approved by the State Engineer: _____

9) Were all plugging activities consistent with an approved plugging plan? Yes If not, please describe differences between the approved plugging plan and the well as it was plugged (attach additional pages as needed):

10) Log of Plugging Activities - Label vertical scale with depths, and indicate separate plugging intervals with horizontal lines as necessary to illustrate material or methodology changes. Attach additional pages if necessary.

For each interval plugged, describe within the following columns:

Depth (ft bgl)	Plugging Material Used (include any additives used)	Volume of Material Placed (gallons)	Theoretical Volume of Borehole/ Casing (gallons)	Placement Method (tremie pipe, other)	Comments ("casing perforated first", "open annular space also plugged", etc.)
	Type I/II Portland	20	20	Tremie pipe	

MULTIPLY		BY		AND OBTAIN
cubic feet	x	7.4805	=	gallons
cubic yards	x	201.97	=	gallons

III. SIGNATURE:

I, Ken Cooper, say that I am familiar with the rules of the Office of the State Engineer pertaining to the plugging of wells and that each and all of the statements in this Plugging Record and attachments are true to the best of my knowledge and belief.

Signature of Well Driller

12/14/2016
Date

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER): MW-11R	OSE FILE NUMBER(S): L-14228
WELL OWNER NAME(S): HollyFrontier Navajo Refining LLC	PHONE (OPTIONAL):
WELL OWNER MAILING ADDRESS: 501 E Main Street	CITY: Artesia; STATE: NM; ZIP: 88210

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	32	52	49.37	N
LONGITUDE	103	18	8.06	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND

* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHJIP, RANGE) WHERE AVAILABLE

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD-1670	Ken Cooper	Harrison & Cooper, Inc. (DBA HCI Drilling)

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
12/07/2016	12/07/2016	130'	130'	

COMPLETED WELL IS: ARTESIAN DRY HOLE ● SHALLOW (UNCONFINED) — STATIC WATER LEVEL IN COMPLETED WELL (FT):

DRILLING FLUID: ● AIR ✕ MUD — ADDITIVES – SPECIFY:

DRILLING METHOD: ● ROTARY HAMMER CABLE TOOL OTHER – SPECIFY:

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
+3	110	6.125	Riser-PVC	FJ	2"	Sch 40	
100	130	6.125	Screen-PVC	FJ	2"	Sch 40	0.010

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
0	2	6.125	Cement	~1	Mixed/Poured
2	100	6.125	Neat Cement Grout	~8	Mixed/Poured
100	105	6.125	Bentonite Chips	~1	Poured
105	130	6.125	Sand-8/16	~18	Poured

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 10/29/15)

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION		PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES **(attach supplemental sheets to fully describe all units)**	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	2	2	Topsoil	Y N	
2	12	10	Tan Sand and Caliche	Y N	
12	16	4	Sandstone	Y N	
16	130	114	Tan Sand with Caliche Stringers	Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

☐ PUMP ☐ AIR LIFT ☐ BAILER ☐ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): 0.00

5. TEST; RIG SUPERVISION

WELL TEST — TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION:

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:
Jarod Michalsky

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

Ken Cooper — 12/14/2016

SIGNATURE OF DRILLER / PRINT SIGNEE NAME — DATE

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 10/29/2015)

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION		PAGE 2 OF 2

WELL RECORD & LOG

OFFICE OF THE STATE ENGINEER

www.ose.state.nm.us

1. GENERAL AND WELL LOCATION

OSE POD NUMBER (WELL NUMBER): MW-31	OSE FILE NUMBER(S): L-14228
WELL OWNER NAME(S): HollyFrontier Navajo Refining LLC	PHONE (OPTIONAL):
WELL OWNER MAILING ADDRESS: 501 E Main Street	CITY: Artesia; STATE: NM; ZIP: 88210

WELL LOCATION (FROM GPS)	DEGREES	MINUTES	SECONDS	
LATITUDE	32	52	31.60	N
LONGITUDE	103	17	47.97	W

* ACCURACY REQUIRED: ONE TENTH OF A SECOND

* DATUM REQUIRED: WGS 84

DESCRIPTION RELATING WELL LOCATION TO STREET ADDRESS AND COMMON LANDMARKS – PLSS (SECTION, TOWNSHIP, RANGE) WHERE AVAILABLE

2. DRILLING & CASING INFORMATION

LICENSE NUMBER	NAME OF LICENSED DRILLER	NAME OF WELL DRILLING COMPANY
WD-1670	Ken Cooper	Harrison & Cooper, Inc. (DBA HCI Drilling)

DRILLING STARTED	DRILLING ENDED	DEPTH OF COMPLETED WELL (FT)	BORE HOLE DEPTH (FT)	DEPTH WATER FIRST ENCOUNTERED (FT)
12/07/2016	12/07/2016	120'	120'	

COMPLETED WELL IS: ARTESIAN DRY HOLE ● SHALLOW (UNCONFINED)

STATIC WATER LEVEL IN COMPLETED WELL (FT):

DRILLING FLUID: ● AIR X MUD ADDITIVES – SPECIFY:

DRILLING METHOD: ● ROTARY HAMMER CABLE TOOL OTHER – SPECIFY:

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM (inches)	CASING MATERIAL AND/OR GRADE (include each casing string, and note sections of screen)	CASING CONNECTION TYPE	CASING INSIDE DIAM. (inches)	CASING WALL THICKNESS (inches)	SLOT SIZE (inches)
0	100	6.125	Riser-PVC	FJ	2"	Sch 40	
100	120	6.125	Screen-PVC	FJ	2"	Sch 40	0.010

3. ANNULAR MATERIAL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	BORE HOLE DIAM. (inches)	LIST ANNULAR SEAL MATERIAL AND GRAVEL PACK SIZE-RANGE BY INTERVAL	AMOUNT (cubic feet)	METHOD OF PLACEMENT
0	2	6.125	Cement	~1	Mixed/Poured
2	90	6.125	Neat Cement Grout	~8	Mixed/Poured
90	95	6.125	Bentonite Chips	~1	Poured
95	120	6.125	Sand-8/16	~18	Poured

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 10/29/15)

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION		PAGE 1 OF 2

4. HYDROGEOLOGIC LOG OF WELL

DEPTH (feet bgl) FROM	DEPTH (feet bgl) TO	THICKNESS (feet)	COLOR AND TYPE OF MATERIAL ENCOUNTERED - INCLUDE WATER-BEARING CAVITIES OR FRACTURE ZONES **(attach supplemental sheets to fully describe all units)**	WATER BEARING? (YES / NO)	ESTIMATED YIELD FOR WATER-BEARING ZONES (gpm)
0	2	2	Topsoil	Y N	
2	12	10	Tan Sand and Caliche	Y N	
12	16	4	Sandstone	Y N	
16	120	104	Tan Sand with Caliche Stringers	Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	
				Y N	

METHOD USED TO ESTIMATE YIELD OF WATER-BEARING STRATA:

☐ PUMP ☐ AIR LIFT ☐ BAILER ☐ OTHER – SPECIFY:

TOTAL ESTIMATED WELL YIELD (gpm): 0.00

5. TEST; RIG SUPERVISION

WELL TEST — TEST RESULTS - ATTACH A COPY OF DATA COLLECTED DURING WELL TESTING, INCLUDING DISCHARGE METHOD, START TIME, END TIME, AND A TABLE SHOWING DISCHARGE AND DRAWDOWN OVER THE TESTING PERIOD.

MISCELLANEOUS INFORMATION:

PRINT NAME(S) OF DRILL RIG SUPERVISOR(S) THAT PROVIDED ONSITE SUPERVISION OF WELL CONSTRUCTION OTHER THAN LICENSEE:

Jarod Michalsky

6. SIGNATURE

THE UNDERSIGNED HEREBY CERTIFIES THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE FOREGOING IS A TRUE AND CORRECT RECORD OF THE ABOVE DESCRIBED HOLE AND THAT HE OR SHE WILL FILE THIS WELL RECORD WITH THE STATE ENGINEER AND THE PERMIT HOLDER WITHIN 20 DAYS AFTER COMPLETION OF WELL DRILLING:

Ken Cooper — SIGNATURE OF DRILLER / PRINT SIGNEE NAME

12/14/2016 — DATE

FOR OSE INTERNAL USE

WR-20 WELL RECORD & LOG (Version 10/29/2015)

FILE NUMBER	POD NUMBER	TRN NUMBER
LOCATION		PAGE 2 OF 2

BORING LOG and WELL CONSTRUCTION

MW-11R

Client: Holly Frontier	TRC Project #: 247359
Site: Navajo Lovington Refinery	Start Date: 12/17/2016
Address: 7406 South Main Street, Lovington, New Mexico 88260	Finish Date: 12/17/2016
Project: Groundwater Investigation	Permit #: Not applicable
Drilling Company: HCI Drilling — Drilling Crew: Ken Cooper and Crew	TRC Site Rep.: John O'Neal
Drilling Method: Air/Mud Rotary	TRC Reviewer: Julie Speer
Boring Diameter (in): 7 — Boring Depth (ft bgs): 130	Coord. System: NM State Plane East Zone
Sampling Method: Continuous	Northing: 32.88035
Blow Count Method: Not applicable	Easting: -103.30216
Field Screening Parameter: Volatile Organic Compounds	Elevation Datum: NAVD1988
Meter: MiniRAE PID — Units: ppm	Ground Elevation (ft): 3835.78
Well Depth (ft bgs): 130 — Well Depth (ft toc): 132.73	Well Elevation (ft): 3838.51
Casing Length (ft): 112.73 — Screen Length (ft): 20	Well Measuring Point: Top of Casing
Surface Completion: Steel Protective Cover and Concrete Pad	Depth to Water (ft toc): 116.82
Well Development: Pump and surge	Date/Time: 2/6/17; 1230

Elevation (ft)	Depth (ft)	Sample: Analytical	Sample: Field Screening	Lithology	Lithologic Description	Well Construction Diagram
5 to -130	-5 to 130		13.6		Caliche: Dry, Hydrocarbon Odor	Steel Protective Cover and Concrete Pad
			5.0		Sandstone: Tan, Fine Grain, Hydrocarbon Odor	
			6.3		Sandstone: Tan, Fine Grain, Hydrocarbon Odor	2-inch Sch. 40 PVC Riser Pipe
			5.3		SP: Tan to Red Brown, Fine Grain, Loose, Well Sorted, Dry	
			5.1			
			4.2			Cement
			7.8			
			8.5			
			6.7			
			5.5			
			5.0			
			4.9			
			4.7			2-inch Sch. 40 PVC Riser Pipe
			5.3			
			4.6			
			5.1			
			7.3			
			4.8			
			4.6			
			2.6		SP: Dark Brown to Tan, Fine Grain, Loose, Well Sorted, Moist	3/8-inch Hydrated Bentonite Chips
			6.4			8/16-inch Silica Sand
			1.4		SP: Dark Brown to Tan, Fine Grain, Loose, Well Sorted, Wet	
			5.8			
			6.4		SP: Red Brown, Fine Grain, Loose, Well Sorted, Wet	2-inch Sch. 40 PVC 0.010-inch Slotted Pipe
			5.1			
			2.8			2-inch Sch. 40 PVC 6-inch Endcap

BORING LOG and WELL CONSTRUCTION

MW-31

Client: Holly Frontier	TRC Project #: 247359
Site: Navajo Lovington Refinery	Start Date: 12/17/2016
Address: 7406 South Main Street, Lovington, New Mexico 88260	Finish Date: 12/17/2016
Project: Groundwater Investigation	Permit #: Not applicable
Drilling Company: HCI Drilling — Drilling Crew: Ken Cooper and Crew	TRC Site Rep.: John O'Neal
Drilling Method: Air/Mud Rotary	TRC Reviewer: Julie Speer
Boring Diameter (in): 7 — Boring Depth (ft bgs): 120	Coord. System: NM State Plane East Zone
Sampling Method: Continuous	Northing: 32.87548
Blow Count Method: Not applicable	Easting: -103.29668
Field Screening Parameter: Volatile Organic Compounds	Elevation Datum: NAVD1988
Meter: MiniRAE PID — Units: ppm	Ground Elevation (ft): 3818.90
Well Depth (ft bgs): 120 — Well Depth (ft toc): 120.27	Well Elevation (ft): 3819.17
Casing Length (ft): 100.27 — Screen Length (ft): 20	Well Measuring Point: Top of Casing
Surface Completion: Steel Flush Mount and Concrete Pad	Depth to Water (ft toc): 105.11
Well Development: Pump and surge	Date/Time: 2/6/17; 1230